Outgoing
C/007/0001
cc: C/007/0020 ✓

State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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

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

COPY

I HEREBY CERTIFY THAT the attached documents, bearing serial numbers 000001 through 000381 are true and correct copies of documents on file in the official public records of the Utah Division of Oil, Gas and Mining, in the files of Lodestar Energy, Inc., as present Permittee of coal mining permits No. ACT/007/001 and ACT/007/020, entitled "White Oak Mine" and "Horizon Mine", respectively.

DATED this 2nd Day of January 2002

Vicky L Dyson
VICKY L DYSON, RECORDS CUSTODIAN

File in:
☐ Confidential
☐ Shelf
☒ Expandable
Refer to Record No 0001 Date 01022002
In C/007/0020 Outgoing
For additional information

Mine # C/007/0020
File Outgoing
Record #
Doc. Date 1-2-02
Recd. Date

United States Department of the Interior

FISH AND WILDLIFE SERVICE

UTAH FIELD OFFICE
LINCOLN PLAZA
145 EAST 1300 SOUTH, SUITE 404
SALT LAKE CITY, UTAH 84115

In Reply Refer To
(CO/KS/NE/UT)

February 15, 2001

Mr. Daren Rasmussen, Stream Alteration Specialist
Utah Division of Water Rights
1594 West North Temple, Suite 220
Box 146300
Salt Lake City, Utah 84114-6300

Copy FYM

RE: Stream Channel Alteration Application No. 00-91-24SA, Lodestar Energy, Inc., Whiskey Creek, Carbon County

C/007/001 -SR01A
Incoming

Dear Mr. Rasmussen:

This is in reference to our February 6, 2001 meeting regarding the referenced Stream Channel Alteration Application. In our meeting, we discussed the proposed surface coal mine under a portion of Whiskey Creek with the Division of Wildlife Resources (UDWR), Division of Water Rights, Division of Water Quality, Division of Oil, Gas, and Mining (UDOGM), and the Bureau of Land Management. The project as proposed would require the temporary movement of a section of the stream to allow mining operations under the streambed.

As we understand it, Whiskey Creek currently has considerable impacts from an ongoing mining operation in-place just below the proposed location for the subject project. The banks suffer from considerable physical disturbance due to mining activities. In addition, while naturally intermittent, Whiskey Creek now flows perennially due to mining discharge. These activities have considerably altered the ecological function of Whiskey Creek and we have significant concerns regarding any further impacts to the stream and downstream waterways.

The Colorado cutthroat trout (CCT) is known to inhabit Clear Creek just downstream of Whiskey Creek. The Service was recently petitioned by the Center for Biological Diversity to list the CCT under the Endangered Species Act (ESA). Due to declines throughout its range, the CCT is considered a sensitive species by the State of Utah and federal agencies. The CCT is managed under a Conservation Agreement which is a voluntary cooperative plan between state and federal resource agencies that identify threats to a species in decline and provides for conservation measures to pro-actively conserve and protect the species. Threats that may warrant listing under ESA should be significantly reduced or eliminated through implementation of the Conservation Agreement. Projects that would cause degradation or loss of CCT habitats would be contrary to the spirit and intent of this Conservation Agreement. Maintaining and expanding strong populations of CCT with protection of habitat through the Conservation Agreement is critical to preventing listing of this species.

To minimize detrimental effects on Whiskey Creek, we believe it is critical that a comprehensive restoration plan is developed in consultation with all interested parties before any mining activities take place. In our last meeting, we discussed the content of a restoration plan for this project. Please consider the following comments regarding minimization of potential impacts and restoration of Whiskey Creek and important downstream fish and wildlife resources.

1. Water quality control measures should take place during all mining and restoration activities. These measures should include monitoring and control of both sediment and water quality (ie. acidity, conductivity, metals) upstream and downstream of the project area.

2. All project activities should occur during low flow periods to minimize sedimentation into the stream. Mining activities should be completed as quickly as possible during this period of time. As we understand it, Whiskey Creek mining and restoration activities are scheduled to be completed by spring of 2002.

3. We do not recommend the use of riprap, concrete or other human-made materials where natural materials can be used. Boulders, root-wads, large woody debris, and other natural materials found locally should be used as necessary in the restoration of Whiskey Creek.

4. Restoration of Whiskey Creek, including placement of instream stabilization and other necessary structures, should closely approximate the natural channel form and function (sinuosity, gradient, hydrology and sediment transport). The disturbed portion of the stream bed should also be restored to its original level.

5. Disturbed areas (work sites, ingress, egress, stockpile site/s, pit) should be revegetated when appropriate after construction with native plants or certified weed-free native seed. The planting should be monitored for success and should be reseeded/planted if unsuccessful.

6. Disturbed areas should be monitored for noxious and undesirable plant species and control actions should be implemented if necessary.

We understand the restoration plans for the existing and proposed mine operations will be amended and supervised by UDOGM and UDWR. We request the opportunity to review a revised restoration plan to provide additional recommendations, if needed, for the protection of fish and wildlife resources.

This response has been prepared under the authority of and in accordance with the provisions of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) and the Endangered Species Act (16 U.S.C. 1531 et seq.) and represents Department of Interior comments on this application.

Thank you for the opportunity to review and comment on this application. If you have any questions or need further information please contact Jessica Gourley, Fish and Wildlife Biologist, at (801) 524-5009 ext. 133.

Sincerely,

Henry R. Maddux
Utah Field Supervisor

cc: EPA-Denver
UDWR-SLC
COE-Bountiful
UDOGM-SLC
David Miller, Lodestar Energy, HC 35 Box 370, Helper, Utah, 84526

Pam

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155

RECEIVED
FEB 27 2001
DIVISION OF
OIL, GAS AND MINING

IN REPLY REFER TO:
3474.4
UTU-017354
UTU-067498
UTU-47974
UTU-47975
UTU-70018
UTU-74804
(UT-931)

FEB 26 2001

Incoming
C/007/001
Copy C/007/020
Copy Pam

CERTIFIED MAIL--Return Receipt Requested
Certification No.

Lodestar Energy, Inc
HC 35 Box 370
Helper, Utah 84526

Re: Lease Bonds Required

NOTICE OF NON-COMPLIANCE

The Bureau of Land Management (BLM), Utah State Office has determined that Lodestar Energy, Inc has failed to comply with lease term Part 1, Section 1; ". . . and to the regulations and formal orders of the Secretary of the Interior which are now or hereafter in force, when not inconsistent with the express and specific provisions herein." Lodestar Energy, Inc., fails to have corporate surety bonds from a qualified surety as per 43 CFR 3474.4.

Background - As of February 14, 2001, the following bonds with Lodestar Energy Inc., as principal, and Frontier Insurance Company, as surety, are currently held in our office for the following coal leases.

Lease Number	Surety Bond Number	Amount
UTU-017354	149093	$193,000
UTU-067498	149094	$5,000
UTU-47974	149095	$10,000
UTU-47975	149096	$15,000
UTU-70018	149097	$5,000
UTU-74804	149098	$194,000

On June 1, 2000, Frontier Insurance Company was decertified by the Treasury Department as an acceptable surety for Federal bonds. Consequently, as provide in 43 CFR 3474.4, the bonds currently on file with BLM are not acceptable. On July 18, 2000, BLM directed Lodestar to provide replacement bonds on these leases and allowed the bonds for UTU-017354 and UTU-74804 to be reduced to $109,000 and $130,000 respectively. Lodestar was granted extensions by BLM (August 7, 2000, and September 18, 2000) to comply with the requirement to supply acceptable bonds for the leases. In a letter dated January 16, 2001, Lodestar requested additional time to have acceptable replacement bonds put into place based on Lodestar's uncertain financial condition. BLM has determined that Lodestar has had adequate time to comply with the original request of July 18, 2000, and hereby denies Lodestar's request for a further extension of time.

Requirements to Correct the Noncompliance:

Within 30 days of receipt of this letter (the compliance period), Lodestar Energy, Inc. must submit appropriate bonding amounts listed above. The appropriate bonding must be as follows:

1. Corporate surety, that is an acceptable surety on Federal bonds;
2. Cash bond; or
3. Personal lease bond(s) secured by negotiable U.S. bonds of a par value equal to the amount of the required surety bond, together with a power of attorney executed on a form approved by the Director.

Compliance Failure Failure to comply with this Notice of Noncompliance will be grounds for cessation of operations and the recommendation that the leases be cancelled as contained in 43 CFR 3486.3.

Appeal Rights

You have 30 calendar days from the receipt of this notice to come into compliance. Following the compliance period, you then have 30 calendar days to appeal to the Board of Land Appeals, Office of the Secretary, in accordance with the regulation at 43 CFR Part 4 and the enclosed Form 1842-1. If an appeal is taken, your notice of appeal must be filed in this office within 30 calendar days following the end of the compliance period. The appellant has the burden of showing that the decision appealed from is in error.

If you wish to file a petition pursuant to regulation 43 CFR 4.21 (58 FR 4939, January 19, 1993) for a stay of the effectiveness of this decision during the time that you appeal is being reviewed by the Board, the petition for a stay must accompany your notice of appeal. A petition for a stay is required to show sufficient justification based on the standards listed below. Copies of the notice of appeal and the petition for a stay must also be submitted to the Office of the Solicitor (see 43 CFR 4.413) at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

Standards for Obtaining a Stay

Except as otherwise provided by law or other pertinent regulation, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards;

(1) The relative harm to the parties if a stay is granted or denied;

(2) The likelihood of the appellant's success on the merits;

(3) The likelihood of the immediate and irreparable harm if the stay is not granted, and;

(4) Whether the public interest favors granting the stay.

Sincerely,

Douglas M. Koza

Douglas M. Koza
Deputy State Director, Natural Resources

Enclosure:
1. Form 1842-1 (1 p)

cc: Mary Ann Wright, Utah Division of Oil, Gas and Mining, w/o enc., P.O. Box 145801, Salt Lake City Utah, 84114-5801
Field Solicitor, Attn: John Steiger, Suite 6201 Federal Building, 125 South State, Salt Lake City, Utah 84138
Interior Board of Land Appeals, Attn: J. Roberts, 4051 Wilson Blvd., Arlington, VA 22203 (Docket Nos. 98-376, 2000-52)

Form 1842-1
(February 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

INFORMATION ON TAKING APPEALS TO THE BOARD OF LAND APPEALS

DO NOT APPEAL UNLESS

1. This decision is adverse to you,

AND

2. You believe it is incorrect

IF YOU APPEAL, THE FOLLOWING PROCEDURES MUST BE FOLLOWED

1. NOTICE OF APPEAL . . . . Within 30 days file a *Notice of Appeal* in the office which issued this decision (see 43 CFR Secs. 4.411 and 4.413). You may state your reasons for appealing, if you desire.

2. WHERE TO FILE NOTICE OF APPEAL . . .

SOLICITOR ALSO COPY TO . . . .

3. STATEMENT OF REASONS . . Within 30 days after filing the *Notice of Appeal*, file a complete statement of the reasons why you are appealing. This must be filed with the United States Department of the Interior. Office of the Secretary, Board of Land Appeals, 4015 Wilson Blvd., Arlington, Virginia 22203 (see 43 CFR Sec. 4.412 and 4.413). If you fully stated your reasons for appealing when filing the *Notice of Appeal*, no additional statement is necessary.

SOLICITOR ALSO COPY TO . . . .

4. ADVERSE PARTIES . . . . Within 15 days after each document is filed, each adverse party named in the decision and the Regional Solicitor or Field Solicitor having jurisdiction over the State in which the appeal arose must be served with a copy of: (a) the *Notice of Appeal*, (b) the Statement of Reasons, and (c) any other documents filed (see 43 CFR Sec. 4.413). Service will be made upon the Associate Solicitor, Division of Energy and Resources, Washington, D.C. 20240, instead of the Field or Regional Solicitor when appeals are taken from decisions of the Director (WO-100).

5. PROOF OF SERVICE . . . . Within 15 days after any document is served on an adverse party, file proof of that service with the United States Department of the Interior, Office of the Secretary, Board of Land Appeals, 4015 Wilson Blvd., Arlington, Virginia 22203. This may consist of a certified or registered mail "Return Receipt Card" signed by the adverse party (see 43 CFR Sec. 4.401(c)(2)).

Unless these procedures are followed your appeal will be subject to dismissal (see 43 CFR Sec. 4.402). Be certain that all communications are identified by serial number of the case being appealed.

NOTE: *A document is not filed until it is actually received in the proper office (see 43 CFR Sec. 4.401(a))*

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155

In Reply Refer To:
3474
UTU-017354
UTU-067498
UTU-47974
UTU-47975
UTU-70018
UTU-74804
(UT-932)

APR 4 2001
C/007/001
Copy C/007/020

DECISION

Lodestar Energy, Inc. Attn: R. Eberley Davis 333 West Vine Street, Suite 1700 Lexington, KY 40507-1628	: : : :	Coal Leases UTU-017354, UTU-067498, UTU-47974, UTU-47975, UTU-70018, UTU-74804

Bonds Accepted
Bond Periods of Liability Terminated

On March 29, 2001, Lodestar Energy, Inc. filed, in this office, cash bonds for the above mentioned coal leases. The bonds have been examined, and are hereby accepted effective as of their date of filing. The bonds and their amounts are as follows:

Lease No.	Cashiers Check No.	Amount	BLM Bond No.
UTU-017354	158930320	$109,000	UT1209
UTU-067498	158930317	$5,000	UT1210
UTU-47974	158930315	$10,000	UT1211
UTU-47975	158930316	$15,000	UT1212
UTU-70018	158930314	$5,000	UT1213
UTU-74804	158930319	$130,000	UT1214

The period of liability for the following surety bonds (with the de-certified surety company Frontier Insurance Company as issuer) is hereby terminated effective March 29, 2001, the effective date of the replacement bonds. 43 CFR 3474.6 allows only for termination of the period of liability under a lease bond, not for a bond's cancellation and return.

Lease No.	Surety Bond No.	Amount	BLM Bond No.
UTU-017354	149093	$193,000	UT1157
UTU-067498	149094	$5,000	UT1158
UTU-47974	149095	$10,000	UT1159
UTU-47975	149096	$15,000	UT1160
UTU-70018	149097	$5,000	UT1161
UTU-74804	149098	$194,000	UT1179

ROBERT LOPEZ

Robert Lopez
Chief, Branch of
Minerals Adjudication

cc: Price Coal Office (Attn: Jay Marshall)
Frontier Insurance Company, 195 Lake Louise Marie Road, Rock Hill, NY 12775
Mary Ann Wright, UDOGM, P.O. Box 145801, Salt Lake City, UT 84114-5801
Field Solicitor, Attn: John Steiger, Federal Building, Suite 6201, SLC, UT 84138
Interior Board of Land Appeals, Attn: J. Roberts, 4015 Wilson Blvd.,
Arlington, VA 22203 (Docket Nos. 98-376, 2000-52)
Lodestar Energy, Inc., (Attn: David Miller), HC 35, Box 370, Helper, UT 84526

Pam

LODESTAR ENERGY

March 28, 2001

Via Overnight Delivery

Douglas M. Koza
Deputy State Director, Natural Resources
United States Department of the Interior
Bureau of Land Management
Utah State Office
324 South State, Suite 400
Salt Lake City, UT 84111

Copy c/007/001
Copy c/007/020
Copy Pam

Re: Lodestar Energy, Inc./Lease Bonds

Dear Mr. Koza:

In response to your Notice of Noncompliance letter dated February 26, 2001, enclosed please find the following bonds for Lodestar Energy, Inc.:

Lease No.	Cashier Check No.	Amount
UTU-017354	158930320	$109,000.00
UTU-067498	158930317	$5,000.00
UTU-47974	158930315	$10,000.00
UTU-47975	158930316	$15,000.00
UTU-70018	158930314	$5,000.00
UTU-74804	158930319	$130,000.00

These cash bonds are submitted for replacement of the Frontier Insurance Company surety bonds referenced in your letter. Please return the Frontier bonds to me as soon as possible.

RECEIVED
APR 02 2001
DIVISION OF
OIL, GAS AND MINING

Lodestar Energy, Inc.
333 West Vine Street, Suite 1700 ▪ Lexington, Kentucky 40507-1628
tel. 859/255-4006 ▪ fax. 859/255-0330

Feel free to contact me should you have questions or need additional information.

Very truly yours,

R. Eberley Davis
Vice President & General Counsel

RED:cgs
Enclosures: As stated herein

cc: Mary Ann Wright, Utah Division of Oil, Gas and Mining, P. O. Box 145801
Salt Lake City, Utah 84114-5801

Field Solicitor, Attn: John Steiger, Suite 6201 Federal Building, 125 South State,
Salt Lake City, Utah 84138

Interior Board of Land Appeals, Attn: J. Roberts, 4051 Wilson Blvd.,
Arlington, VA 22203 (Docket Nos. 98-376, 2000-52)

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

Incoming
C/007/001

ok

Lodestar Energy, Inc.
Mountain Operations
White Oak, Horizon, and Grand Valley Mines
HC35 Box 370
Helper, Utah 84526

September 10, 2001

Ms. Pamela Grubaugh-Littig
Utah Coal Program
Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801

SUBJECT: Permit Revision – C/007/001 White Oak Mines
Revised Mining and Reclamation Plan at White Oak Complex
To Include Surface Mining of Barrier Coal

Dear Ms. Grubaugh-Littig:

Lodestar Energy, Inc. is respectfully submitting five (5) copies of a permit revision to surface mine the barrier coal at the White Oak Complex in response to the Technical Analysis issued July 13th. The disturbed area boundary for the White Oak Complex was expanded by 8.28 acres to maximize resource recovery.

Please review the C-2 because portions of the previous submittal (Appendix 1-1, public notice, amended Oman agreement, the spoil slope stability analysis, etc.) have not changed and were not re-submitted in this submittal.

Lodestar is hoping to have this review completed and approved by mid-October. This is due to the underground portion of the mining to be complete in mid- September.

If there are any questions, please feel free to call me at (435)448-9454 or 9455.

Sincerely,

David B. Miller
Business Manager

File:/Woak/Dogm/DOGM010910.doc

RECEIVED
SEP 10 2001
DIVISION OF
OIL, GAS AND MINING

Form DOGM - C1 (Last Revised September 7, 2001)

File Folder # 3

APPLICATION FOR PERMIT PROCESSING

Permit Change X	New Permit ☐	Renewal ☐	Transfer ☐	Exploration ☐	Bond Release ☐	Permit Number: C/007/001
Title of Proposal: Mining and Reclamation Plan Modification at White Oak Complex To Include Surface Mining of Barrier Coal						Mine: WHITE OAK
						Permittee: LODESTAR ENERGY, INC.

Description, include reason for application and timing required to implement:

Instructions: *If you answer yes to any of the first 8 questions (gray), submit the application to the Salt Lake Office. Otherwise, you may submit it to your reclamation specialist.*

X Yes	☐ No	1. Change in the size of the Permit Area? acres Disturbed Area? 8.28 acres X increase ☐ decrease
☐ Yes	X No	2. Is the application submitted as a result of a Division Order? DO #
☐ Yes	X No	3. Does application include operations outside a previously identified Cumulative Hydrologic Impact Area?
☐ Yes	X No	4. Does application include operations in hydrologic basins other than as currently approved?
☐ Yes	X No	5. Does application result from cancellation, reduction or increase of insurance or reclamation bond?
X Yes	☐ No	6. Does the application require or include public notice/publication?
X Yes	☐ No	7. Does the application require or include ownership, control, right-of-entry, or compliance information?
☐ Yes	X No	8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
☐ Yes	X No	9. Is the application submitted as a result of a Violation? NOV #
☐ Yes	X No	10. Is the application submitted as a result of other laws or regulations or policies? Explain:
X Yes	☐ No	11. Does the application affect the surface landowner or change the post mining land use?
☐ Yes	X No	12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2?)
X Yes	☐ No	13. Does the application require or include collection and reporting of any baseline information?
☐ Yes	X No	14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
X Yes	☐ No	15. Does application require or include soil removal, storage or placement?
X Yes	☐ No	16. Does the application require or include vegetation monitoring, removal or revegetation activities?
X Yes	☐ No	17. Does the application require or include construction, modification, or removal of surface facilities?
X Yes	☐ No	18. Does the application require or include water monitoring, sediment or drainage control measures?
X Yes	☐ No	19. Does the application require or include certified designs, maps, or calculations?
☐ Yes	X No	20. Does the application require or include subsidence control or monitoring?
X Yes	☐ No	21. Have reclamation costs for bonding been provided for?
X Yes	☐ No	22. Does application involve a perennial stream, a stream buffer zone or discharges to a stream?
X Yes	☐ No	23. Does the application affect permits issued by other agencies or permits issued to other entities?

☐ **Attach 5 complete copies of the application.**

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

Business Mgr 9/10/01

Signed - Name - Position - Date

Subscribed and sworn to before me this 10 day of SEPT, 2001

Notary Public

My Commission Expires: MARCH 7, 2002

Attest: STATE OF UTAH COUNTY OF CARBON

Notary Public
JOHN C. PAPPAS
1646 East Castle Circle
Price, Utah 84501
My Commission Expires
March 7, 2002
State of Utah

RECEIVED
SEP 11 2001
DIVISION OF OIL, GAS AND MINING

Assigned Tracking Number

Application for Permit Processing
Detailed Schedule of Changes to the MRP

Title of Application:	Permit Number: C/007/001
Mining and Reclamation Plan Modification at White Oak Complex to Include	Mine: WHITE OAK #1 & #2
Surface Mining of Barrier Coal	Permittee: LODESTAR ENERGY, INC.

Provide a detailed listing of all changes to the mining and reclamation plan which will be required as a result of this proposed permit application. Individually list all maps and drawings which are to be added, replaced, or removed from the plan. Include changes of the table of contents, section of the plan, pages, or other information as needed to specifically locate, identify and revise the existing mining and reclamation plan. **Include page, section and drawing numbers as part of the description.**

			DESCRIPTION OF MAP, TEXT, OR MATERIALS TO BE CHANGED
☐ ADD	X REPLACE	☐ REMOVE	Updated Chapter 1 Legal, Financial, and Related Information, Keep Update Entity Reference File Appendix 1-1 from January Submittal.
X ADD	☐ REPLACE	☐ REMOVE	Appendix 1-2, insert landowner lease agreements.
☐ ADD	X REPLACE	☐ REMOVE	Update Chapter 2 Soils Redline entire Chapter.
X ADD	☐ REPLACE	☐ REMOVE	Plate 231.100 Topsoil Salvage Areas, Reference Pg. 200-21
X ADD	☐ REPLACE	☐ REMOVE	Appendix 2-1 Order 1 Soil Survey by EIS, Appendix 2-2 SCS Prime Farmland letter.
☐ ADD	X REPLACE	☐ REMOVE	Update Chapter 3 Biology Redline complete chapter.
X ADD	☐ REPLACE	☐ REMOVE	Appendix 3-1 Vegetation Survey of Whisky Creek Riparian Corridor.
☐ ADD	X REPLACE	☐ REMOVE	Update Chapter 4 Land Use and Air Quality Redline complete chapter.
X ADD	☐ REPLACE	☐ REMOVE	Appendix 4-1 NOI Air Quality Permit letter.
☐ ADD	X REPLACE	☐ REMOVE	Update Chapter 5 Engineering redline of complete chapter
X ADD	☐ REPLACE	☐ REMOVE	Plate 5-1C White Oak Surface Mine Plan, Plate 5-1D Upper O'Connor Seam Surface and Underground Mining, Plate 5-1E Lower O'Connor Seam Surface and Underground Mining - Ref. Pg.500-8
☐ ADD	☐ REPLACE	X REMOVE	Maps 527 Sheets 12, 13, 14 Belina Mine Site Reclamation
X ADD	☐ REPLACE	☐ REMOVE	Maps 527 Sheet 12 White Oak Mine Site Initial Reclamation and Sheet 13 White Oak Mine Site Final Reclamation Ref. Pg. 500-26
☐ ADD	X REPLACE	☐ REMOVE	Map 521.124 Sheet 4 of 4 Belina Mine Site Disturbance and Map 521.150 Sheet 4a of 4 Belina Mine Site Underground Surface Facilities "As Built"
X ADD	☐ REPLACE	☐ REMOVE	Maps 521.160 White Oak Complex Cross-sections of Surface Mining Area Sheets A, B, C, & D .
X ADD	☐ REPLACE	☐ REMOVE	Map 521.150 Sheet 4b of 4 Whisky Creek Surface Mine Surface Facilities.
☐ ADD	X REPLACE	☐ REMOVE	Update Chapter 6 Geology Redline complete chapter.
X ADD	☐ REPLACE	☐ REMOVE	Appendix 6-1 Toxicity Test Results Overburden Corehole BCC-1.
☐ ADD	X REPLACE	☐ REMOVE	Update Chapter 7 Hydrology redline complete chapter.
☐ ADD	X REPLACE	☐ REMOVE	Map 731.720d Belina Sediment Control Facilities
X ADD	☐ REPLACE	☐ REMOVE	Map 742-310b Sub-Watershed Map - Dugout D-1 and Pond 004A and Map 731.750g Dugout D-1 Design
X ADD	☐ REPLACE	☐ REMOVE	Appendix 7-1 Rainfall Data, and Appendix 7-2 MSHA Letter.
X ADD	☐ REPLACE	☐ REMOVE	Chapter 9 Temporary Spoil Storage Area Figure 9-3 Temporary Spoil Storage. Keep Volumetrics and Stability Analysis from January submittal.
☐ ADD	X REPLACE	☐ REMOVE	Update Operational Plan redline of complete section.

☐ ADD	X REPLACE	☐ REMOVE	ate Reclamation Plan redline of complete sec .
X ADD	☐ REPLACE	☐ REMOVE	Stream Restoration Plan for Upper Whisky Creek and Figures SRP-1 and SRP-2.
X ADD	☐ REPLACE	☐ REMOVE	Appendix 524 - MSHA Ground Control Plan and MSHA Blasting Plan.
☐ ADD	X REPLACE	☐ REMOVE	Figure R-11 White Oak Complex - Reclaimed Contour with Figure R-11 White Oak Complex - Spoil Backfill and Reclamation Details Sheets A & B.
☐ ADD	☐ REPLACE	X REMOVE	Figures R-12 White Oak Complex - Disturbed 3-D View and Figure R-13 White Oak Complex - Reclaimed 3-D View.
X ADD	☐ REPLACE	☐ REMOVE	Updated Pond 004A Calculations, Added Dugout D-1 Pond Calculations to Appendix R614-301-742.221a Sediment Pond Calculations & Details and Stability Analysis for Dugout D-1 in Appendix R614-301-742.221b.
X ADD	☐ REPLACE	☐ REMOVE	Insert Ditch #1001,#1002,#1003,and #1004, along with Culverts C#1005 and #1006 into Hydrologic Calculations in Appendix R614-301-742.310.
X ADD	☐ REPLACE	☐ REMOVE	Spoil/Backfill Summary Surface Mine and Calculations, Stream Alteration Permit Application- Whisky Creek and Approval letter to Appendix R2 Reclamation Details. Keep Stability Analysis for spoil Backfill from January Submittal.
X ADD	☐ REPLACE	☐ REMOVE	Insert Recalculation of White Oak Complex and Haul Road portion of the Reclamation Bond to Appendix R-3

Any other specific or special instructions required for insertion of this proposal into the Mining and Reclamation Plan?

RECEIVED

SEP 24 2001 OK

DIVISION OF
OIL, GAS AND MINING

Lodestar Energy, Inc.
Mountain Operations
White Oak, Horizon, and Grand Valley Mines
HC35 Box 370
Helper, Utah 84526

September 21, 2001

Incoming
C/007/001
Copy Daron, Ann
Fax PFO

Ms. Pamela Grubaugh-Littig
Utah Coal Program
Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801

SUBJECT: Permit – C/007/001 White Oak Mines
Notification of Starting Reclamation at the White Oak Complex

Dear Ms. Grubaugh-Littig:

Lodestar Energy, Inc. is respectfully submitting this letter as notification of the start of the reclamation at the White Oak Complex. The underground portion of the mining will be complete by September 28, 2001. The initial phase of the reclamation process involves the removal of buildings and structures that will not be necessary and are in the path of the surface mining plan at this site.

The facilities to be removed are as follows:

S-25 Waste Water Treatment Building
S-27 Bathhouse
S-28 Shop
S-29 Portable Garage
S-30 Pumphouse
S-31 Diesel Fuel Storage (formerly washbay)
S-39 Conveyor No. 2
S-40 Transfer Building
S-41 Belina #1 Mine Fan
S-42 Belina #2 Mine Fan
S-43 Filter Pond 005
S-44 Main Substation
S-45 Pole Barn Foundation

(Non-building) Facilities
Tanks
Portals

Lodestar is planning to remove 9-inches of VSM material from the bank between the upper and lower mine bench and store this material on the road above Sediment pond 004. No undisturbed areas within the disturbed area boundary are planned to be affected until the surface mining permit application is approved.

If there are any questions, please feel free to call me at (435)448-9454 or 9455.

Sincerely,

David B. Miller
Business Manager

File:/Woak/Dogm/DOGM010921.doc

OK

Lodestar Energy, Inc.
Mountain Operations
White Oak, Horizon, and Grand Valley Mines
HC35 Box 370
Helper, Utah 84526

September 21, 2001

QUESTAR
180 E 100 S
Salt Lake City, UT 84111-1502

Copy Sarah
C/007/001 - SROIA
FAX PFO
Incoming

RE: Lodestar Energy, Inc. - Permit C/007/001
Public Notice of Blasting Schedule

Dear Property Owner:

This letter is to serve as notification that Lodestar Energy, Inc., Mining Permit C/007/001, proposes the following Blasting Schedule on its above referenced permit. This letter serves notice that all residents and public works within the given area are entitled to request a pre-blast survey. You may request a survey be conducted at your dwelling or structure if you are located within one-half (1/2) mile of the proposed mining area.

The existing permit area where blasting is to occur is at Latitude 39° 39' 55.6" and Longitude 111° 11' 16.4" at our Whisky Creek Mine on the White Oak Complex. This site is approximately 2 miles south west of the intersection of highways 96 and 264, approximately 5,000 feet south of Eccles Canyon in the Whisky Creek Canyon.

Should you desire a pre-blast survey be conducted, you must make a written request to:

Utah Coal Program
Utah Division of Oil, Gas and Mining
1594 West North Temple
Suite 1210
Salt Lake City, UT 84114-5801

or to

Lodestar Energy, Inc.
Mountain Operations
HC 35 Box 370
Helper, UT 84526

All requests for a pre-blast survey must be received by the State or the Company within thirty (30) days of notification.

Sincerely,

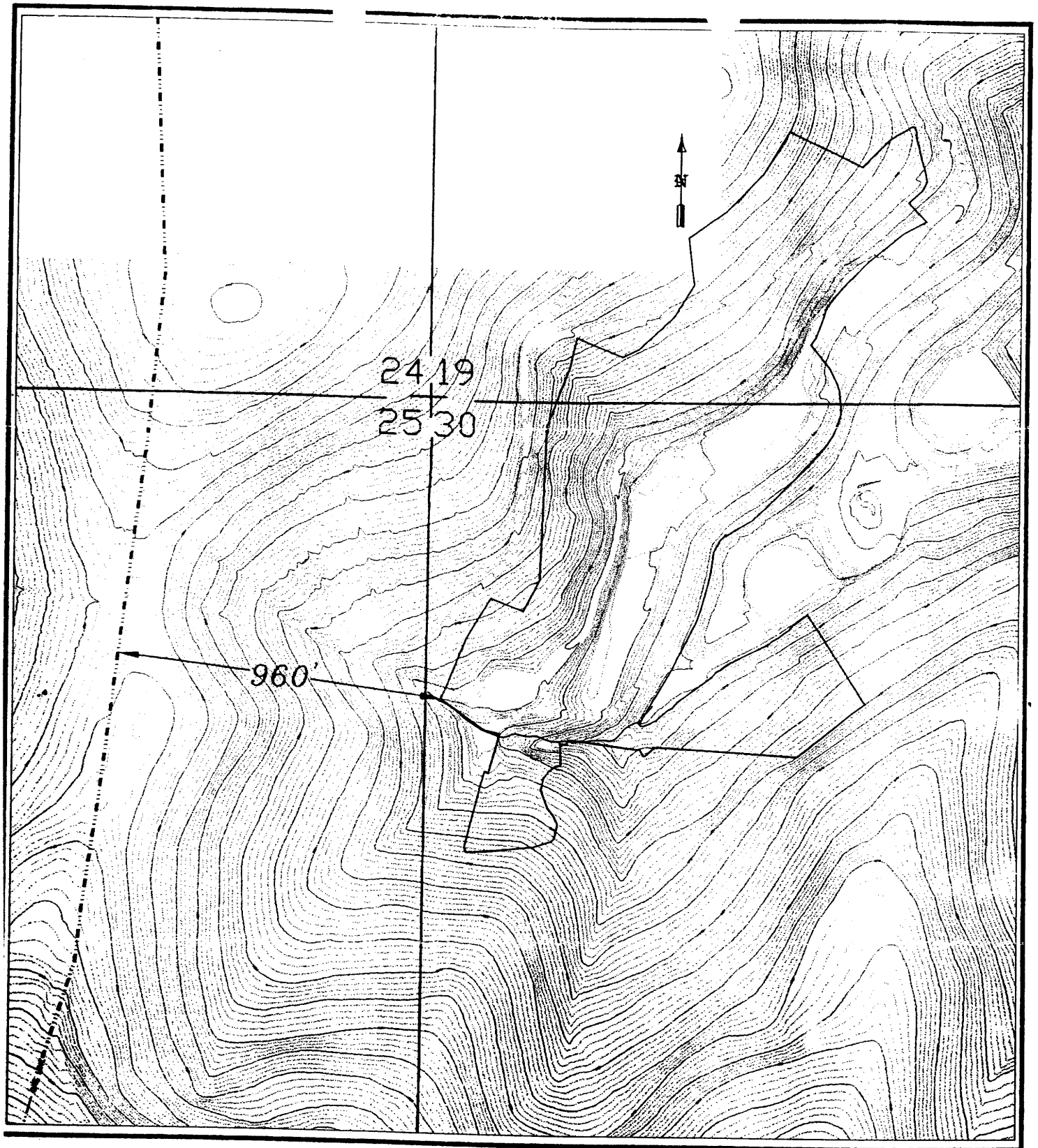
David B. Miller

David B. Miller
Business Manager
Lodestar Energy, Inc.

Xc: Utah Division of Oil, Gas and Mining

RECEIVED
SEP 24 2001
DIVISION OF
OIL, GAS AND MINING

000018



LEGEND:

MINING PERIMETER

GAS LINE

REGISTERED PROFESSIONAL ENGINEER
No. 7418
DAVID B. MILLER
STATE OF UTAH

Lodestar Energy Inc.
Mountain Operations, White Oak Mine
HC 35, Box 370, Helper Ut. 84526
PH #: 435-637-9200 Fax #: 435-448-9456

Drawn By: JASON BENNETT	Date: April 10, 2001	Scale: 1" = 400'
Approved: DAVE MILLER	Drawing Name: 99070-b.dwg	Sheet:

Drawing:

NEAREST STRUCTURE

QUESTAR

Q ir Regulated Services Co.
Questar Gas Co. • Questar Pipeline Co.
1140 West 200 South
P.O. Box 45360
Salt Lake City, UT 84145-0360
Tel 801 324 5555

OK

RECEIVED
NOV 16 2001
DIVISION OF
OIL, GAS AND MINING

David A. Ingleby, Supervisor
Property & Right of Way - Fax (801) 324-3803

November 14, 2001

Mr. David Miller
Lodestar Energy, Inc.
Mountain Operations
HC 35 Box 370
Helper, UT 84526

Incoming
C/007/001
FAX PFO
Copy Daron

Re: Lodestar Energy, Inc. - Proposed Blasting - Permit C/007/001

Dear Mr. Miller:

This letter is to confirm the phone conversation of November 13, 2001 between you, Al Richards, and me. Questar Pipeline Company requested and received a meeting to discuss a pre-blast survey regarding the above referenced permit. Al Richards has E-mailed you the information requested to complete the pre-blast survey analysis. Questar is waiting the written pre-blast survey report. As a result of our meeting, Questar Pipeline Company is proceeding with a geo-technical analysis of the planned Lodestar blasting. The purpose of this analysis is to determine if the blasting will have any adverse effects on the existing Questar Pipeline Company natural gas pipelines.

Questar operates several high pressure pipelines in the area which are critical to the heating and energy needs of the Wasatch Front. To ensure continued safe operation of these pipelines Questar requires that no blasting occur until the geo-technical analysis of the Lodestar blasting plan has been completed. Please contact me, or Al Richards (307) 352-7654 if you have any questions.

Sincerely

David A. Ingleby

CC: Al Richards

Utah Coal Program
Utah Division of Oil, Gas and Mining
1594 West North Temple
Suite 1210
Salt Lake City, UT 84114-5801

OK

Lodestar Energy, Inc.
Mountain Operations
White Oak, Horizon, and Grand Valley Mines
HC35 Box 370
Helper, Utah 84526

November 2, 2001

RECEIVED
NOV 05 2001
DIVISION OF
OIL, GAS AND MINING

Incoming
C/007/020
Copy C/007/001

Ms. Pamela Grubaugh-Littig
Utah Coal Program
Utah Division of Oil, Gas and Mining
1549 West North Temple, Suite 1210
Salt Lake City, UT 84114-5801

RE: Notification of Incapacity of Surety Company

Dear Ms. Grubaugh-Littig:

Lodestar Energy, Inc. is providing this letter in compliance with Utah Regulation R645-301.840.520. It has come to our attention that the Utah Insurance Department completed proceedings for the revocation of Certificate of Authority against Frontier Insurance Company 195 Lake Louis Marie Road, Rock Hill, NY 12775 on October 24, 2001. The certified letter of the proceeding and order was mailed to Frontier Insurance Company on October 25, 2001.

The order becomes final in fifteen (15) days after the date of mailing unless a written request for a hearing is received from the Respondent. The Respondent has 30 days from the date the order becomes final to seek an agency review by filing a written petition.

An "Order of Rehabilitation" was entered by the Supreme Court of the State of New York on October 15, 2001, which includes a finding that "Frontier is insolvent". It is our understanding that Frontier would deny that any "incapacity" is created by any such insolvency.

Please feel free to contact Eberley Davis – Lodestar (Lexington) at (859)255-4006 or myself at (435) 448-9454.

Sincerely,

David B. Miller
Business Manager

Cc: Eberley Davis – Lodestar Energy (Lexington)

File:/Mydocuments/DOGM/DOGM011102.doc

OK

Lodestar Energy, Inc.
Mountain Operations
HC 35 Box 370, Helper, Utah 84526
Phone: (435) 448-9420 – Fax: (435) 448-9456

LODESTAR ENERGY

RECEIVED
NOV 05 2001
DIVISION OF
OIL, GAS AND MINING

November 1, 2001

Ms. Pamela Grubaugh-Littig
Utah Coal Program
Utah Division of Oil, Gas and Mining
1594 West North Temple – Suite 1210
Box 145801
Salt Lake City, UT 84114-5801

Incoming
C/007/001

Dear Pam:

Lodestar Energy Inc. respectfully submits the October 2001 – Discharge Monitoring Reports (DMRs) associated with the White Oak Mine UPDES Permit UTG040021. If you have any questions, please feel free to call me at 435-448-9455.

Sincerely,

David B. Miller
Business Manager

Lodestar Energy, Inc.
Mountain Operations
White Oak, Horizon, and Grand Valley Mines
HC35 Box 370
Helper, Utah 84526

November 2, 2001

RECEIVED
NOV 05 2001
DIVISION OF
OIL, GAS AND MINING

Ms. Pamela Grubaugh-Littig
Utah Coal Program
Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801

Incoming
C/007/001
Copy Karon & Priscilla

SUBJECT: Permit Revision – C/007/001 White Oak Mines
Clean Copies of Revised Mining and Reclamation Plan at
White Oak Complex to Include Surface Mining of Barrier Coal

Dear Ms. Grubaugh-Littig:

Lodestar Energy, Inc. is respectfully submitting seven (7) clean copies of a permit revision to surface mine the barrier coal at the White Oak Complex that was approved October 26, 2001.

Stipulations #1, #3, #7, #8 and #9 have been addressed.

The enclosed C-2 details the sections of the permit that are replaced, inserted or removed.

If there are any questions, please feel free to call me at (435)448-9454 or 9455.

Sincerely,

David B. Miller
Business Manager

File:/Woak/Dogm/DOGM011102a.doc

APPLICATION FOR PERMIT PROCESSING

Permit Change X	New Permit ☐	Renewal ☐	Transfer ☐	Exploration ☐	Bond Release ☐	Permit Number: C/007/001
Title of Proposal: Mining and Reclamation Plan Modification at White Oak Complex To Include Surface Mining of Barrier Coal						Mine: WHITE OAK
						Permittee: LODESTAR ENERGY, INC.

Description, include reason for application and timing required to implement:

Instructions: *If you answer yes to any of the first 8 questions (gray), submit the application to the Salt Lake Office. Otherwise, you may submit it to your reclamation specialist.*

X Yes	☐ No	1. Change in the size of the Permit Area? [illegible] acres Disturbed Area? 8.28 acres X increase ☐ decrease
[illegible]	X No	2. Is the application submitted as a result of a Division Order? [illegible]
[illegible]	X No	3. Does application include operations outside a previously identified Cumulative Hydrologic Impact Area?
[illegible]	X No	4. Does application include operations in hydrologic basins other than as currently approved?
[illegible]	X No	5. Does application result from cancellation, reduction or increase of insurance or reclamation bond?
[illegible]	☐ No	6. Does the application require or include public notice/publication?
[illegible]	☐ No	7. Does the application require or include ownership, control, right of entry, or compliance information?
[illegible]	X No	8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
☐ Yes	X No	9. Is the application submitted as a result of a Violation? NOV #
☐ Yes	X No	10. Is the application submitted as a result of other laws or regulations or policies? Explain:
X Yes	☐ No	11. Does the application affect the surface landowner or change the post mining land use?
☐ Yes	X No	12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2?)
X Yes	☐ No	13. Does the application require or include collection and reporting of any baseline information?
☐ Yes	X No	14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
X Yes	☐ No	15. Does application require or include soil removal, storage or placement?
X Yes	☐ No	16. Does the application require or include vegetation monitoring, removal or revegetation activities?
X Yes	☐ No	17. Does the application require or include construction, modification, or removal of surface facilities?
X Yes	☐ No	18. Does the application require or include water monitoring, sediment or drainage control measures?
X Yes	☐ No	19. Does the application require or include certified designs, maps, or calculations?
☐ Yes	X No	20. Does the application require or include subsidence control or monitoring?
X Yes	☐ No	21. Have reclamation costs for bonding been provided for?
X Yes	☐ No	22. Does application involve a perennial stream, a stream buffer zone or discharges to a stream?
X Yes	☐ No	23. Does the application affect permits issued by other agencies or permits issued to other entities?

☐ **Attach 5 complete copies of the application.**

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

[signature] -Business Mgr 11/2/01

Signed - Name - Position - Date

Subscribed and sworn to before me this 2nd day of November, 2001

[signature]

Notary Public

My Commission Expires: March 7, 2002

Attest: STATE OF UTAH

COUNTY OF CARBON

, 20 } ss:

Notary Public
JOHN C. PAPPAS
1646 East Castle Circle
Price, Utah 84501
My Commission Expires
March 7, 2002
State of Utah

[illegible]

Application for Permit Processing
Detailed Schedule of Changes to the MRP

Title of Application:	Permit Number: C/007/001
Mining and Reclamation Plan Modification at White Oak Complex to Include	Mine: WHITE OAK #1 & #2
Surface Mining of Barrier Coal	Permittee: LODESTAR ENERGY, INC.

Provide a detailed listing of all changes to the mining and reclamation plan which will be required as a result of this proposed permit application. Individually list all maps and drawings which are to be added, replaced, or removed from the plan. Include changes of the table of contents, section of the plan, pages, or other information as needed to specifically locate, identify and revise the existing mining and reclamation plan. **Include page, section and drawing numbers as part of the description.**

			DESCRIPTION OF MAP, TEXT, OR MATERIALS TO BE CHANGED
☐ ADD	X REPLACE	☐ REMOVE	Replace entire Chapter 1 Legal, Financial, Compliance and Related Information with Clean copy of Chapter 1 October, 2001.
☐ ADD	X REPLACE	☐ REMOVE	Replace Plate 301-100 White Oak Area Permit Area Base Map
☐ ADD	X REPLACE	☐ REMOVE	Replace Appendix 1-1 with updated Entity Reference File
X ADD	☐ REPLACE	☐ REMOVE	Insert Oman Agreement, Madsen Agreement, and Post Mining Reclamation Comments into Right of Entry Information.
X ADD	☐ REPLACE	☐ REMOVE	Insert Modification Public Notice into Appendix 1-3 Insurance and Newspaper Acknowledgments
☐ ADD	X REPLACE	☐ REMOVE	Replace Chapter 2 Soils with entire revised Chapter2 Soils October, 2001
X ADD	☐ REPLACE	☐ REMOVE	Insert Plate 301-201.100 Topsoil Salvage Areas and Plate 301-242 Topsoil Redistribution
X ADD	☐ REPLACE	☐ REMOVE	Insert Appendix 2-1 Soil Inventory and Assessment White Oak Mine Study by Environmental Industrial Services.
X ADD	☐ REPLACE	☐ REMOVE	Insert Appendix 2-2 Prime Farmland Assessment Letter from Soil Conservation Service
☐ ADD	X REPLACE	☐ REMOVE	Replace Chapter 3 Biology with revised clean copy of Chapter 3 October, 2001
X ADD	☐ REPLACE	☐ REMOVE	Insert Appendix 3-1 Summary of the Vegetation Monitoring for the Riparian Corridor of Whisky Creek completed by JBR Environmental Consultants, Inc.
☐ ADD	X REPLACE	☐ REMOVE	Replace Chapter 4 Land Use and Air Quality with entire revised clean Chapter 4 October, 2001
X ADD	☐ REPLACE	☐ REMOVE	Insert Appendix 4-1 Air Quality Permit - NOI Letter submitting permit Revision to Division of Air Quality
☐ ADD	X REPLACE	☐ REMOVE	Replace Chapter 5 Engineering with revised clean copy of Chapter 5 October, 2001
☐ ADD	X REPLACE	☐ REMOVE	Replace Plate 521.124 Sheet 4 of 4 Belina Mine Site Disturbance with Plate 521.124 Belina Mine Site Disturbance dated January 23, 2001
X ADD	☐ REPLACE	☐ REMOVE	Insert Plate 5-1C White Oak Complex Projected Surface Mining Plan, Insert Plate 5-1D Upper O'Connor Seam Mining Surface and Underground, and insert Plate 5-1E Lower O'Connor Seam Mining Surface and Underground.
☐ ADD	☐ REPLACE	X REMOVE	Remove Plate 521.150 Belina Mine Site Facilities "As-built"
X ADD	☐ REPLACE	☐ REMOVE	Insert Plate 521.150 Belina Mine Site Facilities "As-built" to Appendix R2 as reference map.
X ADD	☐ REPLACE	☐ REMOVE	Insert Plate 521.150 Belina Mine Site Underground Surface Facilities Sheet 4a of 4, insert Plate 521.150 Whisky Creek Surface Mine Surface Facilities Sheet 4b of 4 and insert Plate 521.150 White Oak Surface Facilities After Initial Reclamation Sheet 4c of 4.
X ADD	☐ REPLACE	☐ REMOVE	Insert Plate 521.160 White Oak Complex X-Sections of Surface Mining Area Sheets A, B, C and D.
X ADD	☐ REPLACE	☐ REMOVE	Insert Plate 521.165 Potential Topsoil Storage Pile Cross Sections

☐ ADD	X REPLACE	☐ REMOVE	ɔlace Plate 521.150 White Oak Mine Haul R - Lower Section Sheet 2 of 4 dated October 16, 2001
☐ ADD	X REPLACE	☐ REMOVE	Replace Plate 521.150 White Oak Mine Haul Road - Upper Section Sheet 3 of 4 dated October 16, 2001
☐ ADD	X REPLACE	☐ REMOVE	Replace Plates 301-527 Sheets 12 and 13 White Oak Mine Site Reclamation with Plate 301-527 Sheet 12 White Oak Mine Site Initial Reclamation Contours and Sheet 13 White Oak Mine Site Final Reclamation Contours.
☐ ADD	X REPLACE	☐ REMOVE	Replace Chapter 6 Geology with entire revised Chapter 6 Geology October, 2001.
X ADD	☐ REPLACE	☐ REMOVE	Insert Figure 301-622.200n Surface Mining Stratagraphic Geologic Cross Section
X ADD	☐ REPLACE	☐ REMOVE	Insert Appendix 6-1 Summary of Results on Toxicity Tests for Barrier Coal Test Hole BCC-1 performed by North American Mine Services and Intermountain Labs.
☐ ADD	X REPLACE	☐ REMOVE	Replace Chapter 7 Hydrology with entire revised Chapter 7 Hydrology October, 2001
☐ ADD	X REPLACE	☐ REMOVE	Replace Plate 301-731.720d Belina Sediment Control Facilities
X ADD	☐ REPLACE	☐ REMOVE	Insert Plate 301-742.310B Sub-Watershed Map Dugout D-1 and Pond 4A
X ADD	☐ REPLACE	☐ REMOVE	Insert Figure 301-731.750g Sediment Structure D-1 Design Views and Figure 301-731.750h Dugout Pond D-1 Stage-Capacity Curves
X ADD	☐ REPLACE	☐ REMOVE	Insert Appendix 7-1 Rainfall Data
X ADD	☐ REPLACE	☐ REMOVE	Insert MSHA letter regarding water-flow into abandoned mines
X ADD	☐ REPLACE	☐ REMOVE	Insert Chapter 9 Temporary Spoil Storage Area volumes by elevation and slope stability calculations. Insert Figure 9-3 Temporary Spoil Storage
☐ ADD	X REPLACE	☐ REMOVE	Replace Operation Plan with entire revised Operation Plan October, 2001
☐ ADD	X REPLACE	☐ REMOVE	Replace Reclamation Plan with entire revised Reclamation Plan October, 2001
X ADD	☐ REPLACE	☐ REMOVE	Insert Stream Restoration Plan after Reclamation Plan, Insert Figures SRP-1 and SRP-2
X ADD	☐ REPLACE	☐ REMOVE	Insert SEDCAD output for Relocated Stream Channel Design printed 10-12-2001
X ADD	☐ REPLACE	☐ REMOVE	Insert Appendix 524 MSHA approved Ground Control and Blasting Plans for Whisky Creek Mine No. 1
X ADD	☐ REPLACE	☐ REMOVE	Insert into Appendix R614-301-742.221a the SEDCAD outputs for Pond 4A 10 yr.-24hr event and 25yr-6hr event dated 10-10-2001 and Dugout D-1 10yr-24hr event dated 8-21-2001 and 25yr-6hr event dated 9-05-2001.
X ADD	☐ REPLACE	☐ REMOVE	Insert into Appendix R614-301-742.221b the stability calculation for Dugout D-1
X ADD	☐ REPLACE	☐ REMOVE	Insert into Appendix R614-301-742.310 the SEDCAD outputs of design calculations for Ditches #1001, #1002, #1003 and #1004 along with Culverts #1005 and #1006.
X ADD	☐ REPLACE	☐ REMOVE	Insert into Appendix R614-301-742.310 Peak flow calculations for Ditches #1001, #1002, #1003 and #1004.
X ADD	☐ REPLACE	☐ REMOVE	Insert into Appendix R2 Spoil/Backfill Summary and slope stability calculations including saturation stability calculations. Insert Figure R-11 Spoil Backfill and Reclamation Details Cross Sections Sheets A and B
X ADD	☐ REPLACE	☐ REMOVE	Insert into Appendix R2 Stream Alteration Permit Number 00-91-24SA and Plates Whisky Creek Original and Proposed Locations, Stream Profiles Page 1 of 2, Stream Structures Page 2 of 2, and Ladder Drop Structure. Insert Joint Permit Application for the Stream Alteration.
☐ ADD	X REPLACE	☐ REMOVE	Replace Reclamation Cost Estimate in Appendix R3
☐ ADD	☐ REPLACE	X REMOVE	Remove Bond Calculation Dated June 1995 from Chapter 8

Any other specific or special instructions required ‹sertion of this proposal into the Mining and Reclamatio ı?

Original fireproof file

C/007/001

Incoming

Copy to Green Bldg. SLO & PFO and Baron

FEDERAL | **Permit Number C/007/001** | **August 24, 1999 (Revised October 26,2001)**

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801
(801) 538-5340

This permit, C/007/001, is issued for the State of Utah by the Utah Division of Oil, Gas and Mining (DOGM) to:

Lodestar Energy, Inc.
333 West Vine Street, Suite 1700
Lexington, Kentucky 40507-1628
(606) 255-4006

for the White Oak Complex (White Oak #1 and #2 Mines, Whisky Creek Mine, White Oak Loadout, Belina Haul Road and the Mine Office Facilities). Lodestar Energy, Inc. owns or controls federal coal leases U-020305, U-017354, U-044076, and U-067498, a Carbon County coal lease and fee-owned parcels. A performance bond is filed with the DOGM in the amount of $4,292,000.00, payable to the state of Utah, Division of Oil, Gas and Mining and the Office of Surface Mining Reclamation and Enforcement (OSMRE). DOGM must receive a copy of this permit signed and dated by the permittee.

Sec. 1 **STATUTES AND REGULATIONS** - This permit is issued pursuant to the Utah Coal Mining and Reclamation Act of 1979, Utah Code Annotated (UCA) 40-10-1 et seq, hereafter referred to as the Act.

Sec. 2 **PERMIT AREA** - The permittee is authorized to conduct coal mining and reclamation operations on the following described lands within the permit area at the White Oak Complex situated in the state of Utah, Carbon County, and located:

Township 13 South, Range 6 East, SLBM

Section 24: SE 1/4, and portions of S 2 NE 1/4, NW 1/4 NE 1/4, and E 2 SW 1/4
Section 25: E 2, portion of W 2
Section 35: Portions of E 2 E 2, and SW 1/4 SE 1/4
Section 36: All

Township 13 South, Range 7 East, SLBM
Section 8: E 2 SE 1/4, portion of SW 1/4 SE 1/4
Section 9: W 2SW 1/4

Township 13 South, Range 7 East, SLBM
Section 16: W 2 W 2, NE 1/4 NW 1/4, NW 1/4 NE 1/4
Section 17: NE 1/4 excluding parts of SW 1/4 NE 1/4 and NE 1/4 NE 1/4, N 2SE1/4
Section 19: S 2 SW 1/4, NE 1/4 SW 1/4, and portions of W 2 E 2 , E 2 NW 1/4
Section 20: Portions of NE 1/4 NE 1/4
Section 21: Portions of NW 1/4 NW 1/4
Section 30: W 2 W 2, SE 1/4 SW 1/4, NE 1/4 NW 1/4
Section 31: W 2 NW 1/4, SW 1/4

Township 14 South, Range 6 East, SLBM
Section 1: E 2 NE 1/4, NE 1/4 SE 1/4, N1/2 SE1/4 NW1/4, N1/2 SW1/4 NW1/4, Lots 2, 3 and 4

Township 14 South, Range 7 East, SLBM
Section 6: W 2, W 2 E 2
Section 7: NW 1/4, NW 1/4 NE 1/4

This legal description is for the permit area of the White Oak Complex (3,906 acres). The permittee is authorized to conduct coal mining and reclamation operations connected with mining on the foregoing described property subject to the conditions of the leases, the approved mining plan, including all conditions and all other applicable laws and regulations.

Sec. 3 **COMPLIANCE** - The permittee will comply with the terms and condition of the permit, all applicable performance standards and requirements of the State Program.

Sec. 4 **PERMIT TERM** - This permit becomes effective on October 26, 2001 and expires on August 24, 2004.

Sec. 5 **ASSIGNMENT OF PERMIT RIGHTS** - The permit rights may not be transferred, assigned or sold without the approval of the Director, DOGM. Transfer, assignment or sale of permit rights must be done in accordance with applicable regulations, including but not limited to 30 CFR 740.13(e) and R645-303.

Sec. 6 **RIGHT OF ENTRY** - The permittee shall allow the authorized representative of the DOGM, including but not limited to inspectors, and representatives of OSMRE, without advance notice or a search warrant, upon presentation of appropriate credentials, and without delay to:

A. Have the rights of entry provided for in 30 CFR 840.12, R645-400-110, 30 CFR 842.13 and R645-400-220; and,

B. be accompanied by private persons for the purpose of conducting an inspection in accordance with R645-400-210 and 30 CFR 842, when the inspection is in response to an alleged violation reported by the private person.

Sec. 7 **SCOPE OF OPERATIONS** - The permittee shall conduct coal mining and reclamation operations only on those lands specifically designated as within the permit area on the maps submitted in the mining and reclamation plan and permit application and approved for the term of the permit and which are subject to the performance bond.

Sec. 8 **ENVIRONMENTAL IMPACTS** - The permittee shall minimize any adverse impact to the environment or public health and safety through but not limited to:

A. Accelerated monitoring to determine the nature and extent of noncompliance and the results of the noncompliance;

B. Immediate implementation of measures necessary to comply; and

C. warning, as soon as possible after learning of such noncompliance, any person whose health and safety is in imminent danger due to the noncompliance.

Sec. 9 **DISPOSAL OF POLLUTANTS** - The permittee shall dispose of solids, sludge, filter backwash or pollutants in the course of treatment or control of waters or emissions to the air in the manner required by the approved Utah State Program and the Federal Lands Program which prevents violation of any applicable state or federal law.

Sec. 10 **CONDUCT OF OPERATIONS** - The permittee shall conduct its operations:

A. In accordance with the terms of the permit to prevent significant, imminent environmental harm to the health and safety of the public; and

B. utilizing methods specified as conditions of the permit by DOGM in approving alternative methods of compliance with the performance standards of the Act, the approved Utah State Program and the Federal Lands Program.

Sec. 11 **EXISTING STRUCTURES** - As applicable, the permittee will comply with R645-301 and R645-302 for compliance, modification, or abandonment of existing structures.

Sec. 12 RECLAMATION FEE PAYMENTS - The operator shall pay all reclamation fees required by 30 CFR Part 870 for coal produced under the permit, for sale, transfer or use.

Sec. 13 AUTHORIZED AGENT - The permittee shall provide the names, addresses and telephone numbers of persons responsible for operations under the permit to whom notices and orders are to be delivered.

Sec. 14COMPLIANCE WITH OTHER LAWS - The permittee shall comply with the provisions of the Water Pollution Control Act (33 USC 1151 et seq,) and the Clean Air Act (42 USC 7401 et seq), UCA 26-11-1 et seq, and UCA 26-13-1 et seq.

Sec. 15 PERMIT RENEWAL - Upon expiration, this permit may be renewed for areas within the boundaries of the existing permit in accordance with the Act, the approved Utah State Program and the Federal Lands Program.

Sec. 16 CULTURAL RESOURCES - If during the course of mining operations, previously unidentified cultural resources are discovered, the permittee shall ensure that the site(s) is not disturbed and shall notify DOGM. DOGM, after coordination with OSMRE, shall inform the permittee of necessary actions required. The permittee shall implement the mitigation measures required by DOGM within the time frame specified by DOGM.

Sec. 17 APPEALS - The permittee shall have the right to appeal as provided for under R645-300.

Sec. 18 SPECIAL CONDITIONS - There are special conditions associated with this permit, see Attachment A.

The above conditions (Secs. 1-18) are also imposed upon the permittee's agents and employees. The failure or refusal of any of these persons to comply with these conditions shall be deemed a failure of the permittee to comply with the terms of this permit and the lease. The permittee shall require his agents, contractors and subcontractors involved in activities concerning this permit to comply with these conditions. These conditions may be revised or amended, in writing, by the mutual consent of DOGM and the permittee at any time to adjust to changed conditions or to correct an oversight. DOGM may amend these conditions at any time without the consent of the permittee in order to make them consistent with any new federal or state statutes and any new regulations.

THE STATE OF UTAH

By: [signature], Associate Director, Mining

Date: October 26, 2001

I certify that I have read, understand and accept the requirements of this permit and any special conditions attached.

[signature] - Business Manager
Permittee (Authorized Representative)

Date: October 31, 2001

ATTACHMENT A

As conditions of the permit, the Permittee must provide the following in accordance with:

1) **Water Monitoring.** R645-301-731.200.
Lodestar Energy, Inc. will submit water quality data for the White Oak Complex and Loadout, in an electronic format through the Electronic Data Input web site, http://hlunix.hl.state.ut.us/cgi-bin/appx-ogm.cgi.

2) **Mining Operations and Facilities.** R645-301-553. The Permittee may take more than 60 days to do rough backfilling and grading provided that no more than 306,000 LCY of spoil may be stored in the temporary spoil pile or in any pit or other location at the mine where it is not in the approximate location for final grading.
R645-301-560. The Permittee must establish the approximate location of the upper portion of Whisky Creek during rough backfilling and grading.

3) **Operations Plan Hydrologic Information**.
R645-301-742.310. By November 26, 2001, the Permittee will revise all Map R645-301-742-310B versions (submitted on September 10, 2001) to indicate that the correct weighted curve number for Zone 4 is 74.

4) **Operational Use of Explosives.** R645-301-524.330 and R645-301-524.340. A pre-blast survey of the Questar gas pipeline must be conducted by the Permittee. Copies of the pipeline survey must be provided to Questar prior to blasting to provide an opportunity for comments. Copies of pipeline survey must be provided to the Division within 10 days of completion of the survey.

5) **General Reclamation Requirements.** R645-301-541.400. By January 26, 2002, details of the reclamation sequence of the Belina Haul Road and the White Oak Complex coal pad and Sediment Pond 004A must be submitted to the Division

6) **Post Mining Land Uses.** R645-301-412. By January 26, 2002, the Permittee must remove all references to construct the 1200-foot section of road because the Oman's desire to construct it themselves or the lease agreement must be modified. Also by January 26, 2002, comments from the landowners concerning the postmining land use for Section 30 must be provided.

7) **Hydrologic Reclamation Plan.**
R645-301-731.120. By November 26, 2001, the Permittee must revise Figure SRP-2 to include: 1) the location of the highwall in the Relocated Stream Profile that will be moved further upstream, and 2) the graded spoils in the restored stream channel that will be removed from the Transition X-Section to more accurately reflect the actual design.

8) **Maps Plans and Cross-Sections of Reclamation.** R645-301-542.300 and R645-301-521.152. By November 26, 2001 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

9) **Bonding.** R645-301-840.520 By November 2, 2001, the Permittee must notify the Division of the capacity of Frontier Insurance Company to provide adequate bond coverage for the White Oak Complex.

O:\007001.WO\FINAL\PERMIT\revP_102601.doc

JK

Lodestar Energy, Inc.
Mountain Operations
White Oak, Horizon, and Grand Valley Mines
HC35 Box 370
Helper, Utah 84526

October 24, 2001

Incoming
C/007/001

Ms. Pamela Grubaugh-Littig
Utah Coal Program
Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801

SUBJECT: Permit Revision – C/007/001 White Oak Mines
Revised Mining and Reclamation Plan at White Oak Complex
To Include Surface Mining of Barrier Coal

Dear Ms. Grubaugh-Littig:

Lodestar Energy, Inc. is respectfully submitting five (5) copies of the slope stability calculations under saturated conditions and the Ground Control and Blasting Plans approved by MSHA to be inserted into the permit revision to surface mine the barrier coal at the White Oak Complex. The slope stability is in response to the Technical Analysis issued October 17th.

Please review the C-2 because the slope stability will be inserted in Appendix R2 and the Ground Control and Blasting Plans will replace the draft copies of those plans.

Lodestar is hoping to have this review completed and approved by the end of October. Building demolition is on going and we hope to start drilling and blasting by mid-November.

If there are any questions, please feel free to call me at (435)448-9454 or 9455.

Sincerely,

David B. Miller
Business Manager

File:/Woak/Dogm/DOGM011024.doc

RECEIVED
OCT 24 2001
DIVISION OF
OIL, GAS AND MINING

Form DOGM - C1 (Last Revised October 23, 2001)

File Folder # 3

APPLICATION FOR PERMIT PROCESSING

Permit Change X	New Permit ☐	Renewal ☐	Transfer ☐	Exploration ☐	Bond Release ☐	Permit Number: C/007/001

Title of Proposal: Mining and Reclamation Plan Modification at White Oak Complex To Include Surface Mining of Barrier Coal

Mine: WHITE OAK

Permittee: LODESTAR ENERGY, INC.

Description, include reason for application and timing required to implement:

Instructions: *If you answer yes to any of the first 8 questions (gray), submit the application to the Salt Lake Office. Otherwise, you may submit it to your reclamation specialist.*

X Yes	☐ No	1. Change in the size of the Permit Area? acres Disturbed Area? 8.28 acres X increase☐ decrease.
☐ Yes	X No	2. Is the application submitted as a result of a Division Order? DO #
☐ Yes	X No	3. Does application include operations outside a previously identified Cumulative Hydrologic Impact Area?
☐ Yes	X No	4. Does application include operations in hydrologic basins other than as currently approved?
☐ Yes	X No	5. Does application result from cancellation, reduction or increase of insurance or reclamation bond?
X Yes	☐ No	6. Does the application require or include public notice/publication?
X Yes	☐ No	7. Does the application require or include ownership, control, right-of-entry, or compliance information?
☐ Yes	X No	8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
☐ Yes	X No	9. Is the application submitted as a result of a Violation? NOV #
☐ Yes	X No	10. Is the application submitted as a result of other laws or regulations or policies? Explain:
X Yes	☐ No	11. Does the application affect the surface landowner or change the post mining land use?
☐ Yes	X No	12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2?)
X Yes	☐ No	13. Does the application require or include collection and reporting of any baseline information?
☐ Yes	X No	14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
X Yes	☐ No	15. Does application require or include soil removal, storage or placement?
X Yes	☐ No	16. Does the application require or include vegetation monitoring, removal or revegetation activities?
X Yes	☐ No	17. Does the application require or include construction, modification, or removal of surface facilities?
X Yes	☐ No	18. Does the application require or include water monitoring, sediment or drainage control measures?
X Yes	☐ No	19. Does the application require or include certified designs, maps, or calculations?
☐ Yes	X No	20. Does the application require or include subsidence control or monitoring?
X Yes	☐ No	21. Have reclamation costs for bonding been provided for?
X Yes	☐ No	22. Does application involve a perennial stream, a stream buffer zone or discharges to a stream?
X Yes	☐ No	23. Does the application affect permits issued by other agencies or permits issued to other entities?

☐ **Attach 5 complete copies of the application.**

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

Business Mgr 10/23/01

Signed - Name - Position - Date

Subscribed and sworn to before me this 23 day of OCTOBER, 2001

Notary Public

My Commission Expires: MARCH 7, 2002

Attest: STATE OF UTAH COUNTY OF CARBON

Notary Public
JOHN C. PAPPAS
1646 East Castle Circle
Price, Utah 84501
My Commission Expires
March 7, 2002
State of Utah

Received by Oil, Gas & Mining

RECEIVED

OCT 24 2001

DIVISION OF OIL, GAS AND MINING

ASSIGNED TRACKING NUMBER

Form DOGM - C2 (Last Revised 6/93)

File Folder # 3

Application for Permit Processing
Detailed Schedule of Changes to the MRP

Title of Application:	Permit Number: C/007/001
Mining and Reclamation Plan Modification at White Oak Complex to Include Surface Mining of Barrier Coal	Mine: WHITE OAK #1 & #2
	Permittee: LODESTAR ENERGY, INC.

Provide a detailed listing of all changes to the mining and reclamation plan which will be required as a result of this proposed permit application. Individually list all maps and drawings which are to be added, replaced, or removed from the plan. Include changes of the table of contents, section of the plan, pages, or other information as needed to specifically locate, identify and revise the existing mining and reclamation plan. **Include page, section and drawing numbers as part of the description.**

			DESCRIPTION OF MAP, TEXT, OR MATERIALS TO BE CHANGED
☐ ADD	X REPLACE	☐ REMOVE	Appendix 524 replace Draft copies of Ground Control and Blasting with the approved MSHA plans.
X ADD	☐ REPLACE	☐ REMOVE	Insert Slope Stability Calculations for Backfill Slopes Under Saturated Conditions into Appendix R2
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☐ REMOVE	
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☐ ADD	☐ REPLACE	☐ REMOVE	

Any other specific or special instructions required for insertion of this proposal into the Mining and Reclamation Plan?

RECEIVED

OCT 24 2001

DIVISION OF
OIL, GAS AND MINING

Lodestar Energy, Inc.
Mountain Operations
White Oak, Horizon, and Grand Valley Mines
HC35 Box 370
Helper, Utah 84526

October 19, 2001

Ms. Pamela Grubaugh-Littig
Utah Coal Program
Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801

SUBJECT: Permit Revision – C/007/001 White Oak Mines
Revised Mining and Reclamation Plan at White Oak Complex
To Include Surface Mining of Barrier Coal

Dear Ms. Grubaugh-Littig:

Lodestar Energy, Inc. is respectfully submitting five (5) copies of a permit revision to surface mine the barrier coal at the White Oak Complex in response to the Technical Analysis issued October 17th. This submittal is a redline/strikeout compared to the September submittal addressing the October 17th deficiencies.

Please review the C-2 because this submittal corrects the September Submittal and does not replace the previous submittal. Take notice to the green dividers. They contain the same instructions as the C-2. Things that have not changed were not re-submitted in this submittal.

Lodestar is hoping to have this review completed and approved by the end of October. Building demolition is on going and we hope to start drilling and blasting by mid-November.

If there are any questions, please feel free to call me at (435)448-9454 or 9455.

Sincerely,

David B. Miller
Business Manager

File:/Woak/Dogm/DOGM011019.doc

RECEIVED
OCT 19 2001
DIVISION OF
OIL, GAS AND MINING

APPLICATION FOR PERMIT PROCESSING

Permit Change X	New Permit ☐	Renewal ☐	Transfer ☐	Exploration ☐	Bond Release ☐	Permit Number: C/007/001
Title of Proposal: Mining and Reclamation Plan Modification at White Oak Complex To Include Surface Mining of Barrier Coal						Mine: WHITE OAK Permittee: LODESTAR ENERGY, INC.

Description, include reason for application and timing required to implement:

Instructions: *If you answer yes to any of the first 8 questions (gray), submit the application to the Salt Lake Office. Otherwise, you may submit it to your reclamation specialist.*

X Yes	☐ No	1. Change in the size of the Permit Area? acres Disturbed Area? 8.28 acres X increase ☐ decrease
☐ Yes	X No	2. Is the application submitted as a result of a Division Order? DO #
☐ Yes	X No	3. Does application include operations outside a previously identified Cumulative Hydrologic Impact Area?
☐ Yes	X No	4. Does application include operations in hydrologic basins other than as currently approved?
☐ Yes	X No	5. Does application result from cancellation, reduction or increase of insurance or reclamation bond?
X Yes	☐ No	6. Does the application require or include public notice/publication?
X Yes	☐ No	7. Does the application require or include ownership, control, right-of-entry, or compliance information?
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☐ Yes	X No	9. Is the application submitted as a result of a Violation? NOV #
☐ Yes	X No	10. Is the application submitted as a result of other laws or regulations or policies? Explain:
X Yes	☐ No	11. Does the application affect the surface landowner or change the post mining land use?
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☐ Yes	X No	20. Does the application require or include subsidence control or monitoring?
X Yes	☐ No	21. Have reclamation costs for bonding been provided for?
X Yes	☐ No	22. Does application involve a perennial stream, a stream buffer zone or discharges to a stream?
X Yes	☐ No	23. Does the application affect permits issued by other agencies or permits issued to other entities?

☐ **Attach 5 complete copies of the application.**

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

[signature] - Business Mgr. 10/19/01

Signed - Name - Position - Date

Subscribed and sworn to before me this 19 day of October, 2001

Notary Public

My Commission Expires: March 7, 2002 , 20

Attest: STATE OF UTAH COUNTY OF CARBON

Notary Public
JOHN C. PAPPAS
1646 East Castle Circle
Price, Utah 84501
My Commission Expires
March 7, 2002
State of Utah

Received by Oil, Gas & Mining
RECEIVED
OCT 19 2001
DIVISION OF OIL, GAS AND MINING

Application for Permit Processing
Detailed Schedule of Changes to the MRP

Title of Application:	Permit Number: C/007/001
Mining and Reclamation Plan Modification at White Oak Complex to Include	Mine: WHITE OAK #1 & #2
Surface Mining of Barrier Coal	Permittee: LODESTAR ENERGY, INC.

Provide a detailed listing of all changes to the mining and reclamation plan which will be required as a result of this proposed permit application. Individually list all maps and drawings which are to be added, replaced, or removed from the plan. Include changes of the table of contents, section of the plan, pages, or other information as needed to specifically locate, identify and revise the existing mining and reclamation plan. **Include page, section and drawing numbers as part of the description.**

			DESCRIPTION OF MAP, TEXT, OR MATERIALS TO BE CHANGED
☐ ADD	X REPLACE	☐ REMOVE	Chapter 1 Redline/strikeout Pages 1-1,6,11,13 and 14. Replace Plate 301.100 Permit Area Base Map.
X ADD	☐ REPLACE	☐ REMOVE	Appendix 1-2, insert Oman Post Mining Reclamation Comments.
☐ ADD	X REPLACE	☐ REMOVE	Chapter 2 Redline/strikeout Table of Contents, Pages 200-20 to 26.
X ADD	☐ REPLACE	☐ REMOVE	Plate 301.242 Topsoil Redistribution
☐ ADD	X REPLACE	☐ REMOVE	Chapter 3 Redline/strikeout page 300-7 of 9
☐ ADD	X REPLACE	☐ REMOVE	Appendix 3-1 Replace Page 5 of JBR Environmental Report Summary of Vegetation of Whisky Creek.
☐ ADD	X REPLACE	☐ REMOVE	Chapter 4 Redline/strikeout Page 400-4 of 6.
☐ ADD	X REPLACE	☐ REMOVE	Chapter 5 Redline/strikeout Table of Contents, Pages 500-10,12,15,16,17,19,20,and 30.
☐ ADD	X REPLACE	☐ REMOVE	Replace Plate 5-1c Projected Surface Mining Plan (surface and coal ownership).
☐ ADD	X REPLACE	☐ REMOVE	Replace Plate 521.150 Sheet 4a of 4 Belina Mine Site Underground Surface Facilities.
X ADD	☐ REPLACE	☐ REMOVE	Insert Plates 521.150 Sheet 4c of 4 White Oak Surface Facilities After Initial Reclamation and 521.165 Potential Topsoil Storage Pile Cross-sections.
☐ ADD	X REPLACE	☐ REMOVE	Replace Plates 521.150 Sheet 2 of 4 White Oak Haul Road Lower Section and 521.150 Sheet 3 of 4 White Oak Haul Road Upper Section. Inserted explosive storage locations.
☐ ADD	X REPLACE	☐ REMOVE	Chapter 6 Redline/strikeout Page 600-6 of 20.
☐ ADD	X REPLACE	☐ REMOVE	Chapter 7 Redline/strikeout Table of Contents, Pages 700-57, 58, 62, 68, 69, 70, 76, 79, 80 and 81. Replace Plate 731.720d Belina Sediment Control Facilities.
X ADD	☐ REPLACE	☐ REMOVE	Insert Figure 731.750h Dugout Pond D-1 Stage-Capacity Curves.
☐ ADD	X REPLACE	☐ REMOVE	Operation Plan Redline/strikeout Pages O-14 thru 16.
☐ ADD	X REPLACE	☐ REMOVE	Mine Reclamation Plan Redline/strikeout Pages R-4, 10, 12, 13, 16, 17, 20, 21, 22, 23, 24, 25, 27, 31, and 35 of 35.
☐ ADD	X REPLACE	☐ REMOVE	Stream Restoration Plan Redline/strikeout of entire section. Replace Figure SRP-2
X ADD	☐ REPLACE	☐ REMOVE	Insert SEDCAD Design Calculations for Relocated Stream Channel.
☐ ADD	X REPLACE	☐ REMOVE	Appendix 524 replace sheet 2 of 3 in the Blasting plan with delay patterns
☐ ADD	X REPLACE	☐ REMOVE	Appendix 614-301-742.221a Replace Pond 4A SEDCAD Calculations for 10yr-24hr Event and Calculations for 25yr-6hr Event.
X ADD	☐ REPLACE	☐ REMOVE	Relocate Plate 521.150 Sheet 4 of 4 Belina Mine Site Facilities to use as reference.
X ADD	☐ REPLACE	☐ REMOVE	Insert Slope Stability Calculations for Backfill Slopes Under Saturated Conditions (Mailed from Kentucky Thursday should be here first of week)
☐ ADD	X REPLACE	☐ REMOVE	Appendix R3 Replace Bond Calculation Sheets. Keep description of reclamation process.

☐ ADD	☐ REPLACE	☐ REMOVE	
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Any other specific or special instructions required for insertion of this proposal into the Mining and Reclamation Plan?

QUESTAR

tar Regulated Services Co.
Questar Gas Co. • Questar Pipeline Co.
1140 West 200 South
P.O. Box 45360
Salt Lake City, UT 84145-0360
Tel 801 324 5555

OK

David A. Ingleby, Supervisor
Property & Right of Way - Fax (801) 324-3803

Incoming
C/007/001
SR01A
CC: DOGM

October 17, 2001

Utah Coal Program
Utah Division of Oil, Gas and Mining
1594 West North Temple
Suite 1210
Salt Lake City, UT 84114-5801

Re: Lodestar Energy, Inc. - Permit C/007/001

Ladies and Gentlemen:

Questar Pipeline Company is in receipt of a letter from Lodestar Energy, Inc dated September 21, 2001 advising of blasting which will occur near natural gas pipelines owned and operated by Questar. As outlined in the September 21, 2001 letter, Questar Pipeline requests a pre-blast survey be held to discuss the proposal. Please contact me at (801) 324-3151 to schedule the meeting.

Sincerely

David A. Ingleby

CC: Lodestar Energy, Inc.
Mountain Operatins
HC 35 Box 370
Helper, UT 84526

RECEIVED
OCT 18 2001
DIVISION OF
OIL, GAS AND MINING

Incoming C/007/001

United States Department of Agriculture | Forest Service | Manti-La Sal National Forest

Supervisor's Office
599 West Price River Drive
Price, UT 84501
Phone # (435) 637-2817
Fax# (435) 637-4940

cc: Pam
Daron
Pete
ok

File Code: 2820-4
Date: October 15, 2001

Ms. Pamela Grubaugh-Littig
Permit Supervisor
Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, UT 84114

Dear Ms. Grubaugh-Littig:

This letter is concerning the White Oak mine Subsidence Sinkhole Item #23 on the BLM inspection number JM-101000. We find this subsidence feature to be a significant safety hazard that needs to be reclaimed. This feature is not in conformance with pre and post-mining land uses of the area as specified in the Land and Resource Management Plan, Manti-La Sal National Forest and the approved Mining and Reclamation Plan.

Lodestar Mining Company must submit a proposal to UDOGM and the Forest Service to backfill and revegetate the chimney subsidence pit in Boardinghouse Canyon for review and consent. Since Lodestar Mining is discontinuing underground mining operations, and previous documentation of undesirable subsidence features has occurred, it will be necessary for future monitoring of subsidence that may take place.

Sincerely,

for Dawn L Horne
ELAINE J. ZIEROTH
Forest Supervisor

RECEIVED
OCT 18 2001
DIVISION OF
OIL, GAS AND MINING

Incoming C/007/001
cc: Wayne
Daron
Pete
OK

Lodestar Energy, Inc.
Mountain Operations
White Oak, Horizon, and Grand Valley Mines
HC35 Box 370
Helper, Utah 84526

October 11, 2001

QUESTAR Pipeline Company
322 West 1100 North
Price, UT 84111-1502

RE: Lodestar Energy, Inc. - Permit C/007/001
Public Notice of Blasting Schedule- 2nd Notice

Dear Property Owner:

This letter is a **SECOND NOTICE**. The first notice was sent September 21, 2001 to the Salt Lake City office by certified mail and no return receipt has been received to this date.

This letter is to serve as notification that Lodestar Energy, Inc., Mining Permit C/007/001, proposes the following Blasting Schedule on its above referenced permit. This letter serves notice that all residents and public works within the given area are entitled to request a pre-blast survey. You may request a survey be conducted at your dwelling or structure if you are located within one-half (1/2) mile of the proposed mining area.

The existing permit area where blasting is to occur is at Latitude 39° 39' 55.6" and Longitude 111° 11' 16.4" at our Whisky Creek Mine on the White Oak Complex. This site is approximately 2 miles south west of the intersection of highways 96 and 264, approximately 5,000 feet south of Eccles Canyon in the Whisky Creek Canyon.

Should you desire a pre-blast survey be conducted, you must make a written request to:

Utah Coal Program
Utah Division of Oil, Gas and Mining
1594 West North Temple
Suite 1210
Salt Lake City, UT 84114-5801

or to

Lodestar Energy, Inc.
Mountain Operations
HC 35 Box 370
Helper, UT 84526

All requests for a pre-blast survey must be received by the State or the Company within thirty (30) days of notification.

Sincerely,

David B. Miller
Business Manager
Lodestar Energy, Inc.

Xc: Utah Division of Oil, Gas and Mining

RECEIVED
OCT 15 2001
DIVISION OF
OIL, GAS AND MINING

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

State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
1594 West North Temple, Suite 1210
PO Box 145801
Salt Lake City, Utah 84114-5801
801-538-5340
801-359-3940 (Fax)
801-538-7223 (TDD)

October 15, 2001

TO: Internal File

THRU: Priscilla W. Burton, Reclamation Soil Specialist &Team Lead

FROM: Gregg A. Galecki, Reclamation Hydrologist

RE: Surface Mining of Barrier Coal, Loadstar Energy, Inc., White Oak Mine, C/007/001-SR01A-1

SUMMARY:

On February 2, 2001, the Division received an application for a Significant Revision of the Mining and Reclamation Plan at the White Oak Complex to include Surface mining of barrier coal. Mining would occur in areas that are currently disturbed but also extend into areas that are not now disturbed but which are in within the disturbed area boundary. An Administrative Completeness Review (ACR) determined some deficiencies existed, but the proposed amendment was considered administratively complete on March 19, 2001, based on the applicants' commitment to provide the requested information.

The proposal was returned to Lodestar Energy, Inc. with deficiencies and requesting additional information on July 13, 2001. Lodestar Energy, Inc. submitted additional information on September 10, 2001. The following technical review evaluates the application from a geologic and hydrologic prospective. The current application does not meet the requirements of the State regulations. In addition to the information requested during the ACR review, other deficiencies were observed.

TECHNICAL ANALYSIS:

PERMIT APPLICATION FORMAT AND CONTENTS

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

Analysis:

The proposal contains no cited examples where the current MRP needs to be changed for accuracy and completeness based on the proposed Significant Revision.

Findings:

Information in the application adequately addresses the requirements of the Permit Application Format and Contents section of the regulations.

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

ALLUVIAL VALLEY FLOORS

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

Applicability of Statutory Exclusions

A statutory exclusion is applicable in the proposed Significant Revision because the affected alluvial valley is undeveloped rangeland, and no farming exists in the area. The statutory exclusion is based on State Regulations R645-302-324.221 and -324.222.

Findings:

Information in the application adequately addresses the requirements of the Alluvial Valley Floor section of the regulations.

GEOLOGIC RESOURCE INFORMATION

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

Analysis:

As outlined in R645-301-622, the application includes 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 Sec. 701.5, 784.14; R645-100-200, -301-724.

Analysis:.

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.

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 Whiskey 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 Whiskey 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 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

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-labelled as VC-1, which also needs to be corrected.

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 Whiskey 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).

Findings:

Information in the application is not adequate to meet the requirements of the Maps, Plans, and Cross Sections of Resource Information section of the regulations. The following items need to be addressed:

R645-301-722,-731, 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.

OPERATION PLAN

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 784.24, 817.150, 817.151; R645-301-521, -301-527, -301-534, -301-732.

Analysis:

Plans and Drawings

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.

Findings:

Information in the application is adequate to meet the requirements of the Road System and Other Transportation
Facilities section of the regulations.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

Surface-Water Monitoring

With the proposed alteration of Whiskey 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 upsream to accomodate moving of the undisturbed area boundary.

Acid and toxic-forming materials

With the use of data collected from the characterization of the overburden and underlying units the applicant has demonstrated that no acid and toxic-forming materials are likely to be encountered.

Discharges

French drains are not being required installation at the Mine portals. 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/measureable flows from seeps or springs are anticipated.

Stream Buffer Zones

A complete alteration/disruption of the upper reaches of Whiskey Creek will take place during the proposed Surface mining operation. Approximately 700-ft of Whiskey 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 Whiskey 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 dischanged into Whiskey Creek. Additional Pond storage has been designed to accomodate 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

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(SEDCAD 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:

Information in the application does not adequately address the requirements of the Hydrologic Information section of the regulations. The following items need to be addressed:

R645-301-742.221, On Map 742-310B and repective 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.

RECLAMATION PLAN

GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, 301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

BACKFILLING AND GRADING

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

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.

Findings:

Information in the application is adequate to meet the requirements of the Genera Backfilling and Grading section of the regulations.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

Analysis:

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 Whiskey 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 stream bed. The lengthing of the 35%-grade slope from 50-feet to 175-feet increases the velocity and erosional power of the stream significantly.

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 presribed 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 WHiskey 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 armouring/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. A narrative commitment to the use of native stream channel sediments and clays, their respective volumes and original location, needs to be stated.

Findings:

Information in the application does not adequately address the requirements of the Reclamation Plan Hydrologic Information section of the regulations. The following items need to be addressed:

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 Whiskey Creek. Specifically, the use, volumes, and location of native stream channel sediments and clay.

CONTEMPORANEOUS RECLAMATION

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

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 access of 2 gpm. This is employed to ensure any significant water will flow away from the portals/headwall and drain towards the Whiskey Creek drainage.

Findings:

Information in the application is adequate to meet the requirements of the Contemporaneous Reclamation section of the regulations.

RECOMMENDATION:

The amendment cannot be accepted in its present form.

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

State of Utah

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October 15, 2001

TO: Internal File

THRU: Priscilla Burton, Soil Reclamation Specialist & Team Lead

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

RE: Surface Mining of Barrier Coal, Lodestar Energy, Inc., White Oak Mine, C/007/001-SR01A-1

SUMMARY:

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

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

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

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

TECHNICAL ANAYLSIS:

ENVIRONMENTAL RESOURCE INFORMATION

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

GENERAL

Regulatory Reference: 30 CFR Sections 779.11; 783.12.

R645-301 Sections 411; 521; 721.

Minimum Regulatory Requirements:

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

Analysis:

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

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

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

The White Oak Mine Complex is at an elevation of 9,200 feet. The slopes at the Belina Mine Complex range from 30 to 50 %. The North facing slopes are covered with Engelman Spruce and subalpine fir. Aspen communities are found on the south facing slopes. Mountain meadow communities are scattered on upper slopes and ridges. The Mine Complex is bi-sected by a perennial stream that is bordered by the spruce-fir forest.

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

Findings:

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

PERMIT AREA

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

Minimum Regulatory Requirements:

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

Analysis:

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

The Permittee has reclassified the disturbed areas as follows:

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

The permitted increased the disturbed area boundary at the White Oak mine complex by 8.28 acres to 69.2 acres. The reason for the increase is for maximizing coal recovery. Within the Mine Complex disturbed area boundary underground mining and the related surface facilities have already disturbed 29.5 acres. Surface mining will disturb an additional 17.3 acres. Undisturbed islands within the disturbed area boundary total 22.4 acres. See Section 114 of the MRP for additional details.

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

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 requirements of the Regulations. Prior to approval, 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 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.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

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

Minimum Regulatory Requirements:

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

Affected area boundary maps

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

Archeological site maps

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

Coal resource and geologic information maps

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

Cultural resource maps

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

Existing structures and facilities maps

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

Existing surface configuration maps

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

Mine workings maps

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

Monitoring and sampling location maps

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

Permit area boundary maps

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

Subsurface water resource maps

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

Surface and subsurface manmade features maps

The location of all buildings in and within 1,000 feet of the proposed permit area, with identification of the current use of the buildings. The location of surface and subsurface manmade features within, passing through, or passing over the proposed permit area, including, but not limited to, major electric transmission lines, pipelines, and agricultural drainage tile fields. Each public road located in or within 100 feet of the proposed permit area.

Surface and subsurface ownership maps

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

Surface water resource maps

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

Vegetation reference area maps

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

Well maps

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

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

Analysis:

Affected Area Boundary Maps

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

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

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

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

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

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

Mine Workings Maps

Plate 5-1D shows the underground workings for the upper O'Connor seam and Plate 5-1E shows the location of the underground workings for the lower O'Connor seam. The outline of the proposed surface mine is overlaid on those maps. A registered professional engineer has certified both maps. The Division considers those mine working maps to be adequate to evaluate the relationship between surface and underground mining.

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

Permit Area Boundary Maps

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.

Findings:

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

R645-301-521.132 and R645-301- 521.190, The Permittee must show on Plate 5-1C the location of the boundary for all Federally owned coal.

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.

OPERATION PLAN

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

Minimum Regulatory Requirements:

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

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

MINING OPERATIONS AND FACILITIES

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

Minimum Regulatory Requirements:

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

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

Analysis:

General

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

In section 523 of the MRP the Permittee states:

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

In section 523.200 of the MRP the Permittee states:

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

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

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

Type and Method of Mining Operations

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

The Permittee plans to begin surface mining as follows:

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

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

The 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-1and 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. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-114, R645-301-521.132 and R645-301- 521.190, 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.

EXISTING STRUCTURES:

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

Minimum Regulatory Requirements:

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

Provide a description of each existing structure proposed to be used in connection with or to facilitate the surface coal mining and reclamation operation. The description shall include: the location; plans of the structure which describe its current

condition; approximate dates on which construction of the existing structure was begun and completed; and, a showing, including relevant monitoring data or other evidence, whether the structure meets the permanent program performance standards or, if the structure does not meet the permanent program performance standards, a showing whether the structure meets the interim program performance standards.

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

Analysis:

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

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

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

Findings:

The Permittee met the minimum regulatory requirements of this section.

RELOCATION OR USE OF PUBLIC ROADS

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

Minimum Regulatory Requirements:

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

Analysis:

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

Findings:

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

COAL RECOVERY

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

Minimum Regulatory Requirements:

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

Analysis:

The Permittee proposes to conduct surface mining in and around the disturbed area boundary of the White Oak mine site. The main reason for surface mining is to recover coal that was unrecoverable by underground mining. The area of potential surface mining is limited by the location of underground workings and overburden depth.

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

The Permittee proposes conducting surface mining within 500 feet of an underground mine. R645-301-523.200 prohibits mining within 500 feet to any point of either an active or abandoned underground mine, except that the operations results in improved resource recovery. All of the coal that the Permittee proposes to mine is within 500 feet of underground mines. If

the Permittee does not recover the coal by surface mining then the reserves will not be recovered.

The Division approved the Permittee coal recovery plan because:

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

Findings:

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

SUBSIDENCE CONTROL PLAN

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

Minimum Regulatory Requirements:

Renewable resources survey

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

Subsidence control plan

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

1.) A description of the method of coal removal, such as longwall mining, room-and-pillar removal, hydraulic mining, or other extraction methods, including the size, sequence, and timing for the development of underground workings.
2.) A map of underground workings which describes the location and extent of areas in which planned-subsidence mining methods will be used and which includes all areas where measures will be taken to prevent or minimize subsidence and subsidence related damage and where appropriate, to correct subsidence-related material damage.
3.) A description of the physical conditions, such as depth of cover, seam thickness, and lithology, which affect the likelihood or extent of subsidence and subsidence-related damage.
4.) A description of monitoring, if any, needed to determine the commencement and degree of subsidence so that, when appropriate, other measures can be taken to prevent, reduce, or correct material damage.
5.) Except for those areas where planned subsidence is projected to be used, a detailed description of the subsidence control measures that will be taken to prevent or minimize subsidence and subsidence-related damage, including, but not limited to: backstowing or backfilling of voids; leaving support pillars of coal; leaving areas in which no coal is removed, including a description of the overlying area to be protected by leaving the coal in place; and, taking

measures on the surface to prevent material damage or lessening of the value or reasonably foreseeable use of the surface.

6.) A description of the anticipated effects of planned subsidence, if any.

7.) A description of the measures to be taken to mitigate or remedy any subsidence-related material damage to, or diminution in value or reasonably foreseeable use of the land, or structures or facilities to the extent required under State law.

8.) Other information specified by the Division as necessary to demonstrate that the operation will be conducted in accordance with the performance standards for subsidence control.

Performance standards for subsidence control

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

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

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

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

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

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

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

Notification

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

Analysis:

Renewable Resources Survey

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

Subsidence Control Plan

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

Subsidence Control Plan

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

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

part of the Permittee's annual report.

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

Monitoring of Extraction Ratio

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

Monitoring of Pillar Stacking

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

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

The stacking of pillars will be monitored by the Mine's engineer to ensure that a success ratio of better than 90% is occurring in the two coal seams. A report, which is P.E. certified by the engineer monitoring the pillar stacking, will be forwarded to the Division and the concerned surface management agency on a quarterly basis.

Surface Mining

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

Performance Standards for Subsidence control

The Permittee adopted standard room and pillar mining method, which is commonly used in the area. Room and pillar mining usually prevents subsidence from causing material damage

to the extent technologically and economically feasible, maximize mine stability, and maintain the value and reasonably foreseeable use of surface lands.

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

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

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

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

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

Notification

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

Findings:

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

SLIDES AND OTHER DAMAGE

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

Minimum Regulatory Requirements:

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

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

Analysis:

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

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

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

Findings:

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

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

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

Minimum Regulatory Requirements:

Road classification system

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

Plans and drawings

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

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

Performance standards

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

1.) Control or prevent erosion, siltation, and the air pollution attendant to erosion, including road dust and dust occurring on other exposed surfaces, by measures such as vegetating, watering, using chemical or other dust suppressants, or otherwise stabilizing all exposed surfaces in accordance with current, prudent engineering practices;
2.) Control or prevent damage to fish, wildlife, or other habitat and related environmental values;

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

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

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

Primary road certification

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

chapter; current, prudent engineering practices; and any design criteria established by the Division.

Other Transportation Facilities

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

Analysis:

Road classification system

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

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

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

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

Plans and drawings

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

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

Performance standards

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

Primary road certification

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

Other Transportation Facilities

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

Findings:

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

SPOIL AND WASTE MATERIALS

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

Minimum Regulatory Requirements:

Disposal of noncoal mine wastes

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

revegetation compatible with the natural surroundings.

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

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

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

Coal mine waste

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

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

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

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

The disposal facility shall be designed using current, prudent engineering practices and shall meet any design criteria established by the Division. A qualified registered professional engineer, experienced in the design of similar earth and waste structures, shall certify the design of the disposal facility. The disposal facility shall be designed to attain a minimum long-term static safety factor of 1.5. The foundation and abutments must be stable under all conditions of construction. Sufficient foundation investigations, as well as any necessary laboratory testing of foundation material, shall be performed in order to determine the design requirements for foundation stability. The analyses of the foundation conditions shall take into consideration the effect of underground mine workings, if any, upon the stability of the disposal facility.

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

other emergency procedures are required to protect the public.

Refuse piles

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

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

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

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

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

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

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

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

A qualified registered professional engineer, or other qualified professional specialist under the direction of the professional engineer, shall inspect the refuse pile during construction. The professional engineer or specialist shall be experienced in the construction of similar earth and waste structures. Such inspection shall be made at least quarterly throughout construction and during critical construction periods. Critical construction periods shall include, at a minimum: Foundation preparation including the removal of all organic material and topsoil; Placement of underdrains and protective filter systems; Installation of final surface drainage systems; and, The final graded and revegetated facility. Regular inspections by the engineer or specialist shall also be conducted during placement and compaction of coal mine waste materials. More frequent inspections shall be conducted if a danger of harm exists to the public health and safety or the environment. Inspections shall continue until the refuse pile has been finally graded and revegetated or until a later time as required by the Division.

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

Impounding structures

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

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

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

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

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

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

Burning and burned waste utilization

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

Return of coal processing waste to abandoned underground workings

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

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

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

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

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

Excess Spoil: General Requirements

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Excess Spoil: Durable rock fills

The Division may approve the alternative method of disposal of excess durable rock spoil by gravity placement in single or multiple lifts, provided the following conditions are met: durable rock fills shall meet the general requirements for excess spoil except as provided in this section; the excess spoil consists of at least 80 percent, by volume, durable, nonacid- and nontoxic-forming rock (e.g., sandstone or limestone) that does not slake in water and will not degrade to soil material. Where used, noncemented clay shale, clay spoil, soil, or other nondurable excess spoil material shall be mixed with excess durable rock spoil in a controlled manner such that no more than 20 percent of the fill volume, as determined by tests performed by a registered engineer and approved by

the Division, is not durable rock; a qualified registered professional engineer certifies that the design will ensure the stability of the fill and meet all other applicable requirements; the fill is designed to attain a minimum long-term static safety factor of 1.5, and an earthquake safety factor of 1.1; the underdrain system may be constructed simultaneously with excess spoil placement by the natural segregation of dumped materials, provided the resulting underdrain system is capable of carrying anticipated seepage of water due to rainfall away from the excess spoil fill and from seeps and springs in the foundation of the disposal area and the other requirements for drainage control are met; and, surface water runoff from areas adjacent to and above the fill is not allowed to flow onto the fill and is diverted into stabilized diversion channels designed to safely pass the runoff from a 100-year, 6-hour precipitation event.

Excess Spoil: Preexisting benches

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

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

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

Analysis:

Disposal of noncoal waste

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

The Permittee state 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 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 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 resourece 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 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.

Impounding structures

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

Burning and burned waste utilization

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

Return of coal processing waste to abandoned underground workings

No underground development waste will disposed in underground workings.

Excess spoil

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

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

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

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

The existing MRP makes provisions for spoil in Volume 1/1 on page O-14 at the top of the page. Spoil taken to the spoil management area will be used as fill material during final reclamation or for routine maintenance. The Permittee estimates that the spoil storage area has a capacity of 22,500 cubic yards (Operations Plan page O-14). The spoil storage area is shown on Map R645-301-527, Sheet 12 and also on Map R645-301-231.300, Sheet 4. (The location was not found on Sheet 4 of R645-301-231.300 as indicated in Volume 1/1 on page O-14.)

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

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

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

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

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

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

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.

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:

R645-301-528.332, 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).

HYDROLOGIC INFORMATION

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

Minimum Regulatory Requirements:

General

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

Groundwater Monitoring

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

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

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

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

Surface Water Monitoring

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

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

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

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

Acid- and toxic-forming materials and underground development waste

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

Discharges into an underground mine

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

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

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

Gravity discharges from underground mines

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

Water-quality standards and effluent limitations

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

Diversions: General

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

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

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

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

Diversions: Perennial and intermittent streams

Diversion of perennial and intermittent streams within the permit area may be approved by the Division after making the finding relating to stream buffer zones that the diversions will not adversely affect the water quantity and quality and related environmental resources of the stream. The design capacity of channels for temporary and permanent stream channel diversions shall be at least equal to the capacity of the unmodified stream channel immediately upstream and downstream from the diversion. Protection against flooding and resultant damage to life and property shall be met when the temporary and permanent diversions for perennial and intermittent streams are designed so that the combination of channel, bank and flood-plain configuration is adequate to pass safely the peak runoff of a 10-year, 6-hour precipitation event for a temporary diversion and a 100-year, 6-hour precipitation event for a permanent diversion. The design and construction of all stream channel diversions of perennial land intermittent streams shall be certified by a qualified registered professional engineer as meeting the performance standards and any design criteria set by the Division.

Diversions: Miscellaneous flows

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

Stream buffer zones

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

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

Sediment control measures

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

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

Siltation Structures: General

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

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

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

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

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

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

Siltation Structures: Sedimentation ponds

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

1.) Provide adequate sediment storage volume;

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

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

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

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

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

7.) Ensure against excessive settlement;

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

9.) Be compacted properly.

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

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

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

Siltation Structures: Other treatment facilities

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

Siltation Structures: Exemptions

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

Discharge structures

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

Impoundments

The following requirements apply to both temporary and permanent impoundments:

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

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

3.) **An impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a) or located where failure would be expected to cause loss of life or serious property damage shall have a minimum static safety factor of 1.5 for a normal pool with steady state seepage saturation conditions, and a seismic safety factor of at least 1.2. Impoundments not meeting the size or other criteria of 30 CFR Sec. 77.216(a), except for a coal mine waste**

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

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

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

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

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

8.) Spillways. An impoundment shall include either a combination of principal and emergency spillways, a single open-channel spillway, or, be configured as an impoundment that relies primarily on storage to control the runoff from the applicable design precipitation event. The Division may approve a single open-channel spillway that is: of nonerodible construction and designed to carry sustained flows; or, earth- or grass-lined and designed to carry short-term, infrequent flows at non-erosive velocities where sustained flows are not expected. Except impoundments that rely primarily on storage to control the runoff, the required design precipitation events for an impoundment having spillways are: for an impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a) a 100-year 6-hour event, or greater event as specified by the Division; and, for an impoundment not meeting the size or other criteria of 30 CFR Sec. 77.216(a), a 25-year 6-hour event, or greater event as specified by the Division. In lieu of meeting the single open-channel spillway requirements, the Division may approve an impoundment that relies primarily on storage to control the runoff from the design precipitation event when it is demonstrated by the operator and certified by a qualified registered professional engineer or qualified registered professional land surveyor that the impoundment will safely control the design precipitation event, the water from which shall be safely removed in accordance with current, prudent, engineering practices. Such an impoundment shall be located where failure would not be expected to cause loss of life or serious property damage, except where: in the case of an impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a), it is designed to control the precipitation of the probable maximum precipitation of a 6-hour event, or greater event as specified by the Division; or, in the case of an impoundment not meeting the size or other criteria of 30 CFR Sec. 77.216(a), it is designed to control the precipitation of a 100-year6-hour event, or greater event as specified by the Division.

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

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

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

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

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

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

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

2.) The quality of impounded water will be suitable on a permanent basis for its intended use and, after reclamation, will meet applicable State and Federal water quality standards, and discharges from the impoundment will meet applicable effluent limitations and will not degrade the quality of receiving water below applicable State and Federal water quality standards.

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

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

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

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

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

Ponds, impoundments, banks, dams, and embankments

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

If the structure is 20 feet or higher or impounds more than 20 acre-feet, each plan of this section shall include a stability analysis of each structure. The stability analysis shall include, but not be limited to, strength parameters, pore pressures, and long-term seepage conditions. The plan shall also contain a description of each engineering design assumption and calculation with a discussion of each alternative considered in selecting the specific design parameters and construction methods.

Analysis:

Discharges into an underground mine

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

The surface mining activities will mine through the portal areas of the inactive underground mines. During this process, the flows from highwall seeps and intermittent spring may flow into the inactive mine workings prior to spoil being pushed into the mine

openings. This flow will be minimal as well as seasonal. The water that migrates into the mine workings will not be degraded.

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

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

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

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

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

Gravity discharges

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

Sedimentation ponds.

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

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

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

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

Findings:

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

SUPPORT FACILITIES AND UTILITY INSTALLATIONS

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

Minimum Regulatory Requirements:

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

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

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

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

Analysis:

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

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

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

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

The Permittee made those statements in section 526.200 and 526.200.

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

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

- Prevents or controls erosion and siltation, water pollution, and damage to public or private property.

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

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

- **Well House**
- **Reclaim Belt and Truck Bin**

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

Findings:

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

SIGNS AND MARKERS

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

Minimum Regulatory Requirements:

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

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

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

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

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

Analysis:

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

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

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

Findings:

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

USE OF EXPLOSIVES

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

Minimum Regulatory Requirements:

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

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

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

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

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

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

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

General performance standards

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

Blasting signs, warnings, and access control

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

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

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

Control of adverse effects

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

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

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

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

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

Records of blasting operations

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

Analysis:

General

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

The permittee has submitted, as part of SR01A three blast sketches which leave the certified blaster designing the blasting pattern a great deal of flexibility relative to the design criteria. As example, burden and spacing dimensions have the capability of being varied from ten to twenty-five feet, with borehole diameters having the ability to be varied from five inches to nine inches. This seems credible, based on the varying thicknesses of the numerous sandstone members which must be fractured in order to expose the coals. The controlling factors relative to the blast design will be the control of the adverse affects produced by air blast and ground vibration. Based on the 960 foot distance from the blasting area to the nearest manmade structure which must be protected (the Questar natural gas pipeline), the maximum amount of explosive which can be legally shot per 8 millisecond delay period calculates to be 289 pounds,

assuming a scaled distance factor of 55 and a maximum peak particle velocity of 1 "/sec. This also assumes that seismic monitoring will not be conducted, as indicated on page 2 of the proposed blasting plan.

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

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

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

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 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.

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:

Findings:

APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR Sections 780.23, 784.15; 785.16, 816.102, 816.107, 816.133; 817.102; 817.107; 817.133.

R645-301 Sections 234; 270; 271; 412; 413; 512; 531; 533; 553; 536; 542; 731; 732; 733; 764.

Minimum Regulatory Requirements:

Note :The following requirements have been suspended insofar as they authorize any variance from approximate original contour for surface coal mining operations in any area which is not a steep slope area.

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

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

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

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

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

Analysis:

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

> **"Achieve the approximate original contour (AOC), except as provided in R645-301-553.500 through R645-301-553.540 (previously mined areas (PMA's), continuously mined areas (CMA's) and areas subject to the AOC provisions), R645-301-553.600 through R645-301-553.612 (PMA's and CMA's), R645-302-270 (non-mountaintop removal on steep slopes), R645-302-220 (mountaintop removal mining), R645-301-553.700 (thin overburden) and R645-301-553.800 (thick overburden)"**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- **The flat areas used for coal storage and loading along with the surface facilities areas will be shaped into sloped areas that more closely resemble the surrounding areas.**
- **The sediment ponds will be removed.**
- **Whisky Creek will be restored.**
- **The roads will be removed, although a jeep trail will be established in part of the area.**

- All highwalls will be eliminated.
- No spoil piles will exist after reclamation.

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

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

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

Findings:

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

BACKFILLING AND GRADING

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

Minimum Regulatory Requirements:

General

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

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

If it is determined by the Division that disturbance of the existing spoil or underground development waste would increase environmental harm or adversely affect the health and safety of the public, the Division may allow the existing spoil or underground development waste pile to remain in place. Accordingly, regrading of settled and revegetated fills to achieve approximate original contour at the conclusion of underground mining activities shall not be required if: the settled and revegetated fills are composed of spoil or nonacid- or nontoxic-forming underground development waste; the spoil or underground development waste is not located so as to be detrimental to the environment, to the health and safety of the public, or to the approved postmining land use; stability of

the spoil or underground development waste must be demonstrated through standard geotechnical analysis to be consistent with backfilling and grading requirements for material on the solid bench (1.3 static safety factor) or excess spoil requirements for material not placed on a solid bench (1.5 static safety factor); and, the surface of the spoil or underground development waste shall be vegetated in accordance with the revegetation standards for success, and surface runoff shall be controlled in accordance with the regulatory requirements for diversions.

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

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

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

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

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

Previously mined areas

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

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

Backfilling and grading on steep slopes

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

Special provisions for steep slope mining

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

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

Analysis:

General

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

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

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

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

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

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

The reclamation plan and timetable is as follows:

Prior to Surface Mining

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

During Surface Mining

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

Surface Mine Area After Mining

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

Loadout Area After Mining

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

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

Achieve the Approximate Original Contour

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

Eliminate All Highwalls

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

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

Eliminate all Spoil Piles

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

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

Eliminate Depressions

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

Slope Stability

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

Findings:

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

MINE OPENINGS

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

Minimum Regulatory Requirements:

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

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

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

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

Analysis:

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

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

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

Findings:

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

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

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

Minimum Regulatory Requirements:

Reclamation

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

Retention

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

Analysis:

Reclamation

The only roads associated with the White Oak Mine Complex are the haul roads that are located within the pad area. New roads will be constructed as part of surface mining. The roads within the surface mine will be reclaimed as part of on going surface mining and reclamation.

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

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

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

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

Retention

The 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:

Gravity discharges

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

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

Sedimentation ponds

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

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

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

Findings:

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

CESSATION OF OPERATIONS

Regulatory Reference: 30 CFR Sections 816.131; 816.132; 817.131; 817.132.

R645-301 Sections 515; 541.

Minimum Regulatory Requirements:

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

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

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

All surface equipment, structures, or other facilities not required for continued underground mining activities and monitoring, unless approved as suitable for the postmining land use or environmental monitoring, shall be removed and the affected lands reclaimed.

Analysis:

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

Findings:

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

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Regulatory Reference: 30 CFR Sections 780.14 ; 784.23.

R645-301 Sections 323; 512; 521; 542; 632; 731.

Minimum Regulatory Requirements:

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

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

Affected area boundary maps

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

Bonded area map

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

Reclamation backfilling and grading maps

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

Reclamation facilities maps

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

phased reclamation activities or to remain as part of reclamation.

Final surface configuration maps

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

Reclamation monitoring and sampling location maps

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

Reclamation surface and subsurface manmade features maps

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

Reclamation treatments maps

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

Certification Requirements.

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

Each detailed design plan for an impounding structure that meets or exceeds the size or other criteria of the Mine Safety and Health Administration, 30 CFR Section 77.216(a) shall: be prepared by, or under the direction of, and certified by a qualified registered professional engineer with assistance from experts in related fields such as geology, land surveying, and landscape

architecture; include any geotechnical investigation, design, and construction requirements for the structure; describe the operation and maintenance requirements for each structure; and, describe the timetable and plans to remove each structure, if appropriate.

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

Analysis:

Affected area boundary maps

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

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

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

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

Bonded area map

The Division usually considers that the disturbed areas are the bonded areas. The disturbed area boundary map is shown on several maps including Map R645-301-527 Sheet 13.

Reclamation backfilling and grading maps

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

Reclamation facilities maps

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

Final surface configuration maps

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

Reclamation surface and subsurface manmade features maps

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

Findings:

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

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

BONDING AND INSURANCE REQUIREMENTS

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

Minimum Regulatory Requirements:

General

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

The bond or bonds shall cover the entire permit area, or an identified increment of land within the permit area upon which

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

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

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

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

Form of bond

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

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

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

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

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

Determination of bond amount

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

The amount of the bond shall be sufficient to assure the completion of the reclamation plan if the work has to be

performed by the Division in the event of forfeiture, and in no case shall the total bond initially posted for the entire area under 1 permit be less than $10,000.

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

Terms and conditions for liability insurance

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

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

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

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

Analysis:

Determination of bond amount

The Division 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:

- 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.

RECOMMENDATION:

The Division should deny the permit until the Permittee satisfies the deficiencies and agrees to the stipulations in the TA.

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

State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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Salt Lake City, Utah 84114-5801
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801-538-7223 (TDD)

INSPECTION REPORT

Partial: XXX Complete: ____ Exploration: ____
Inspection Date & Time: 10/02/2001 / 9 AM-11AM
Date of Last Inspection: 9/14/2001

Mine Name: White Oak #1 and #2 County: Carbon Permit Number: **C/007/001**
Permittee and/or Operator's Name: Lodestar Energy, Inc.
Business Address: HC 35 Box 370, Helper, Utah 84526
Type of Mining Activity: Underground XXX Surface ____ Prep. Plant ____ Other ____
Company Official(s): Mr. Kit Pappas, Engineering Dept.
State Official(s): Peter Hess Federal Official(s): None
Weather Conditions: Sunny, cool; 50's Fahrenheit
Existing Acreage: Permitted 3906 Disturbed 140.2 Regraded ____ Seeded ____
Status: Active XXX

REVIEW OF PERMIT, PERFORMANCE STANDARDS & PERMIT CONDITION REQUIREMENTS

1. Substantiate the elements on this inspection by checking the appropriate performance standard.
   a. For complete inspections provide narrative justification for any elements not fully inspected unless element is not appropriate to the site, in which case check N/A.
   b. For partial inspections check only the elements evaluated.
2. Document any noncompliance situation by referencing the NOV issued at the appropriate performance standard listed below.
3. Reference any narratives written in conjunction with this inspection at the appropriate performance standard listed below.
4. Provide a brief status report for all pending enforcement actions, permit conditions, Division Orders, and amendments.

	EVALUATED	N/A	COMMENTS	NOV/ENF
1. PERMITS, CHANGE, TRANSFER, RENEWAL, SALE	[X]	[ ]	[X]	[ ]
2. SIGNS AND MARKERS	[X]	[ ]	[ ]	[ ]
3. TOPSOIL	[ ]	[ ]	[ ]	[ ]
4. HYDROLOGIC BALANCE:				
a. DIVERSIONS	[ ]	[ ]	[ ]	[ ]
b. SEDIMENT PONDS AND IMPOUNDMENTS	[ ]	[ ]	[ ]	[ ]
c. OTHER SEDIMENT CONTROL MEASURES	[X]	[ ]	[X]	[ ]
d. WATER MONITORING	[X]	[ ]	[X]	[ ]
e. EFFLUENT LIMITATIONS	[ ]	[ ]	[ ]	[ ]
5. EXPLOSIVES	[X]	[ ]	[X]	[ ]
6. DISPOSAL OF EXCESS SPOIL/FILLS/BENCHES	[ ]	[ ]	[ ]	[ ]
7. COAL MINE WASTE/REFUSE PILES/IMPOUNDMENTS	[ ]	[ ]	[ ]	[ ]
8. NONCOAL WASTE	[X]	[ ]	[X]	[ ]
9. PROTECTION OF FISH, WILDLIFE AND RELATED ENVIRONMENTAL ISSUES	[ ]	[ ]	[ ]	[ ]
10. SLIDES AND OTHER DAMAGE	[ ]	[ ]	[ ]	[ ]
11. CONTEMPORANEOUS RECLAMATION	[ ]	[ ]	[ ]	[ ]
12. BACKFILLING AND GRADING	[ ]	[ ]	[ ]	[ ]
13. REVEGETATION	[ ]	[ ]	[ ]	[ ]
14. SUBSIDENCE CONTROL	[ ]	[ ]	[ ]	[ ]
15. CESSATION OF OPERATIONS	[ ]	[ ]	[ ]	[ ]
16. ROADS:				
a. CONSTRUCTION/MAINTENANCE/SURFACING	[ ]	[ ]	[ ]	[ ]
b. DRAINAGE CONTROLS	[ ]	[ ]	[ ]	[ ]
17. OTHER TRANSPORTATION FACILITIES	[ ]	[ ]	[ ]	[ ]
18. SUPPORT FACILITIES/UTILITY INSTALLATIONS	[ ]	[ ]	[ ]	[ ]
19. AVS CHECK (4th Quarter- April, May, June)	[ ]	[ ]	[ ]	[ ]
20. AIR QUALITY PERMIT	[X]	[ ]	[X]	[ ]
21. BONDING & INSURANCE	[ ]	[ ]	[ ]	[ ]

(COMMENTS ARE NUMBERED TO CORRESPOND WITH TOPICS LISTED ABOVE)

Note: The permittee completed the underground coal extraction process in the #2 Mine on September 27, 2001. The Division was notified of this on September 28.

The permittee notified the Division in a letter dated September 21, 2001 of the intent to initiate the demolition of various unneeded structures within the Mine site surface facilities area. As noted this day, the permittee is preparing to move the administration/engineering/bath house facilities from the Mine site to the old school house in Scofield during 10/5-7/2001. Mining-related apparatus including lubricants and various machine parts are also being moved to other storage sites.

Demolition of the structures noted in the permittee's letter of 9/21/2001 has already started with the demolition of the portable garage (S-29) and the waste water treatment plant (S-25).

1. PERMITS, CHANGE, TRANSFER, RENEWAL, SALE

At the present time, C/007/001-SR01A, which would allow the surface contour stripping of approximately 600,000 tons of coal from the upper and lower O'Connor coal seams in the White Oak #1 and #2 Mines surface facilities area, is still under review within the UDNR/OGM.

4C. HYDROLOGIC BALANCE: OTHER SEDIMENT CONTROL MEASURES

The permittee has made the necessary repairs which were noted during the September inspection relative to the sediment control structures along the Belina Mine primary coal haul road.

The permittee has cleaned up and removed the compressed coal fines which had been observed on the access road to pond 004A.

The pile of road material accumulated and deposited from the snow removal process SW of the powder and detonator storage magazines has been removed and deposited on the spoil pile.

4D. HYDROLOGIC BALANCE: WATER MONITORING

The permittee is preparing to initiate the fourth quarter 2001 surface and ground water monitoring requirements for the White Oak Mine site.

Eccles and Mud Creeks continue to flow at high flow capacity, due to the increase in volume of mine water from the Skyline Mine.

5. EXPLOSIVES

The permittee anticipates using ammonium nitrate and fuel oil as a blasting agent to fracture the numerous layers of sandstone in the overburden and interburden associated with SR01A. In order to assist the permittee relative to the numerous Federal requirements for the storage of this type of blasting

agent, a copy of the *Organized Crime Control Act of 1970, Title XI, Public Law 91-452, Chapter 40, Subparts I and K* discussing the importation, manufacture, distribution, and storage of explosive materials was forwarded to the permittee. One deficiency which the permittee must address prior to Division approval of SR01A is where to locate the ammonium nitrate storage facilities as well as the detonator magazine.

Under Federal law same must be located a certain specified distance from any public highway, such as Utah State Highway 264, and depicted on a P.E. certified surface facilities map (R645-301-512.120).

As noted this day, the dynamite and detonator storage magazines which have been in use for many years at the site remain in the same location, i.e., along the road SE of the waste rock/spoil disposal area.

There has not been any surface blasting conducted at the site for many years.

8. NONCOAL WASTE

The permittee has cleaned up most of the site relative to noncoal waste. As the demolition of many of the surface structures begins, it will be necessary for the permittee to pay particular attention to this compliance requirement.

20. AIR QUALITY PERMIT

The paved roadway surface at the loadout was being watered by the sprinkling system during today's inspection.

Inspector's Signature: Peter Hess Date: October 5, 2001
Peter Hess #46

Note: This inspection report does not constitute an affidavit of compliance with the regulatory program of the Division of Oil, Gas & Mining.

cc: James Fulton, OSM
David Miller, Lodestar
Price Field office
O:\007001.WO\Compliance\2001\p_1002.wpd

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

State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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INSPECTION REPORT

Partial:_____ Complete: XXX Exploration: ____
Inspection Date & Time: 11/05, 16 & 26/2001 / 10:00-12:30 PM
Date of Last Inspection: 10/02/2001

Mine Name: White Oak #1 and #2 County: Carbon Permit Number: **C/007/001**
Permittee and/or Operator's Name: Lodestar Energy, Inc.
Business Address: HC 35 Box 370, Helper, Utah 84526
Type of Mining Activity: Underground XXX Surface _____ Prep. Plant _____ Other _____
Company Official(s): Shane Hansen, Surface Foreman , Dave Miller, Business Manager
State Official(s): Peter Hess Federal Official(s): None
Weather Conditions: Overcast / 40's Fahrenheit / Short showers
Existing Acreage: Permitted 3906 Disturbed 140.2 Regraded _____ Seeded _____
Status: Active XXX

REVIEW OF PERMIT, PERFORMANCE STANDARDS & PERMIT CONDITION REQUIREMENTS

1. Substantiate the elements on this inspection by checking the appropriate performance standard.
   a. For complete inspections provide narrative justification for any elements not fully inspected unless element is not appropriate to the site, in which case check N/A.
   b. For partial inspections check only the elements evaluated.
2. Document any noncompliance situation by referencing the NOV issued at the appropriate performance standard listed below.
3. Reference any narratives written in conjunction with this inspection at the appropriate performance standard listed below.
4. Provide a brief status report for all pending enforcement actions, permit conditions, Division Orders, and amendments.

	EVALUATED	N/A	COMMENTS	NOV/ENF
1. PERMITS, CHANGE, TRANSFER, RENEWAL, SALE	[X]	[ ]	[X]	[ ]
2. SIGNS AND MARKERS	[X]	[ ]	[ ]	[ ]
3. TOPSOIL	[X]	[ ]	[ ]	[ ]
4. HYDROLOGIC BALANCE:				
a. DIVERSIONS	[X]	[ ]	[X]	[ ]
b. SEDIMENT PONDS AND IMPOUNDMENTS	[X]	[ ]	[X]	[ ]
c. OTHER SEDIMENT CONTROL MEASURES	[X]	[ ]	[X]	[ ]
d. WATER MONITORING	[X]	[ ]	[X]	[ ]
e. EFFLUENT LIMITATIONS	[X]	[ ]	[ ]	[ ]
5. EXPLOSIVES	[X]	[ ]	[ ]	[ ]
6. DISPOSAL OF EXCESS SPOIL/FILLS/BENCHES	[ ]	[X]	[ ]	[ ]
7. COAL MINE WASTE/REFUSE PILES/IMPOUNDMENTS	[X]	[ ]	[X]	[ ]
8. NONCOAL WASTE	[X]	[ ]	[ ]	[ ]
9. PROTECTION OF FISH, WILDLIFE AND RELATED ENVIRONMENTAL ISSUES	[X]	[ ]	[ ]	[ ]
10. SLIDES AND OTHER DAMAGE	[ ]	[X]	[ ]	[ ]
11. CONTEMPORANEOUS RECLAMATION	[X]	[ ]	[X]	[ ]
12. BACKFILLING AND GRADING	[ ]	[X]	[ ]	[ ]
13. REVEGETATION	[ ]	[X]	[ ]	[ ]
14. SUBSIDENCE CONTROL	[X]	[ ]	[ ]	[ ]
15. CESSATION OF OPERATIONS	[ ]	[X]	[ ]	[ ]
16. ROADS:				
a. CONSTRUCTION/MAINTENANCE/SURFACING	[X]	[ ]	[ ]	[ ]
b. DRAINAGE CONTROLS	[X]	[ ]	[ ]	[ ]
17. OTHER TRANSPORTATION FACILITIES	[X]	[ ]	[ ]	[ ]
18. SUPPORT FACILITIES/UTILITY INSTALLATIONS	[X]	[ ]	[ ]	[ ]
19. AVS CHECK (4th Quarter- April, May, June)	[X]	[ ]	[ ]	[ ]
20. AIR QUALITY PERMIT	[X]	[ ]	[ ]	[ ]
21. BONDING & INSURANCE	[X]	[ ]	[X]	[ ]

(COMMENTS ARE NUMBERED TO CORRESPOND WITH TOPICS LISTED ABOVE)

Note: The permittee has hauled all of the stockpiled coal from the Mine site stacking tube to the rail loading facility.

At this time, the permittee continues the demolition of the surface structures at the Mine facilities area which will not be needed. Photographs of the demolition process can be viewed in the "O" drive under 007001 / Images / 110501.

The site received its first appreciable amount of snow fall on November 24-25. Twenty-four to twenty-eight inches were received at the Mine site. The permittee was still in the process of clearing the Belina primary road on 11/26/2001. Access to the Mine's main facilities area was not possible.

1. PERMITS, CHANGE, TRANSFER, RENEWAL, SALE

Lodestar Energy, Inc./ Mountain Operations received a permit to conduct a surface contour coal stripping operation from the UDNR/OGM on October 26, 2001.

There are several issues pending relative to the initiation of the contour stripping operation. These are:

1) The surface is privately owned by a local family whose matriarch recently passed away. The new surface owners (several members of that same family) have concerns about the current lease of the land within the proposed strip mine disturbance. These include the type of mining operation proposed, timber sales, and the current reclamation bond status of the site.

2) Questar has concerns about ground vibration from the proposed surface blasting operation as it relates to their natural gas pipeline which is 960 feet from several of the proposed strip pits. A pre-blast survey and analysis is pending relative to this issue.

4A. HYDROLOGIC BALANCE: DIVERSIONS

The permittee has removed the concrete ditch liner from ditches D-30 and D-33A, as part of the demolition in anticipation of initiating the overburden removal process. A track hoe was observed removing culvert C-32-36 from the equipment storage area NNE of the administration building. Mr. Hansen indicated that it was the permittee's intent to re-establish the ditches in earth to reestablish the drainage pattern previously established by ditches D-30 and D-33A. A rework of the drop box at the toe of D-30 will be necessary to allow the runoff to report into the culvert designated as C-30-24 and thence to the sediment pond 004.

As observed on November 16, 2001, the new ditches have been established.

4B. HYDROLOGIC BALANCE: SEDIMENT PONDS AND IMPOUNDMENTS

The permittee conducted the fourth quarter impoundment inspections for the Mine site and the rail loading facility on October 31, 2001. Mr. Kit Pappas performed the inspections. There were no hazardous conditions or signs of instability noted for ponds 001, 002, 003 or 004. The impoundment inspections were certified by Mr. Dave Miller, P.E., on 11/01/2001.

The permittee has not conducted inspections for pond 005 for the third or fourth quarters. The pond is a series of sediment traps and is constructed of twelve-inch thick concrete walls. The pond was used to treat mine water from the #1 Mine, which has been sealed for several years. The pond does contain water, from precipitation events. The construction of the impoundment prohibits the formation of unstable conditions. If a hazard does exist, it would probably be due to the potential for wildlife to drown in this pond.

4C. HYDROLOGIC BALANCE: OTHER SEDIMENT CONTROL MEASURES

The sediment control structures located at the "big fill" (bottom of ditch D-25B) utilizes a silt fence at the base of the access to the inlet end of culvert C-25-36. This is the access in which rock was placed in the erosion rills which had developed. The silt fence needs to have the sediment buildup behind it mucked out.

The bale dikes at the bottom of disturbed ditch D-21 need minor repairs. The #1 dike in this series has undercut. The #2 dike has sediment built up to the point that it appears that the next event will overtop it. The #3 dike appeared to be capable of functioning as designed.

4D. HYDROLOGIC BALANCE: WATER MONITORING

The permittee's third quarter 2001 water monitoring information was reviewed. The following surface water monitoring points were monitored and sampled; VC-1, VC-2, VC-10, VC-11, VC-12, and Coal and Cox Canyons. VC-4 and VC-5 were reported as dry.

The following ground water points were monitored; S7-11, S36-23, S36-7, S31-13, S36-17, S24-12, S36-19, Scoal 1 and Scoal 5. Water monitoring point S25-13 was reported as dry.

The permittee has received analytical results for all of the aforementioned samples with the exception of Scoal 5 and S31-13. None of the analytical sheets which had been received showed any abnormalities in water chemistry. All analyses had cation/anion balances which were within the acceptable error range.

Discharge monitoring reports for the months of July, August, September, and October were reviewed. Pond 004 had discharges during the months of July and August; no exceedances in effluent parameters were reported to DEQ or noted during today's inspection. There were no other outfalls during the four month period.

The July reports were noted as being submitted to the various agencies on September 13, 2001. According to the UPDES permit reporting requirements for the White Oak site, these reports must be

submitted by no later than the 28th day of the month following the monitoring period. Hence, the July reports were late in being submitted. The monitoring reports for the other months were submitted in a timely fashion.

7. COAL MINE WASTE/REFUSE PILES/IMPOUNDMENTS

Mr. Kit Pappas conducted the fourth quarter spoil pile inspection for the permittee on October 31, 2001. Three hundred yards of material have been added along the access road during the facilities demolition process. No topsoil has been removed from the area; there were no hazardous conditions or other signs of instability noted by Mr. Pappas during his inspection. None were noted by this inspector on 11/05/2001. Mr. Dave Miller, P.E., certified the inspection report on November 1, 2001.

11. CONTEMPORANEOUS RECLAMATION

The following structures have been removed or are being removed within the Mine site surface facilities area:

1) The diesel tank containment (S-31).
2) The shop building (S-28).
3) The administration building (the roofing insulation was being removed this day by CO-OP Mining Company) (S-27).
4) The waste water treatment plant is removed including its foundation (S-25).
5) The culinary water tanks above the main area. The tanks have been removed and the area backfilled. (See photos 764 through 767). A CMP riser remains on the lower bank off the road which remains to be removed. The backfilling exists with a smooth finish at this time. It was recommended to Mr. Hansen that the area be roughened or "pocked" to stimulate revegetation. It was also suggested that this area be seeded as quickly as possible.

21. BONDING AND INSURANCE

The Division has ordered the permittee to replace the surety bond for the White Oak site by January 7, 2002. This is based on a determination of insolvency of the Frontier Insurance Company which occurred on October 15, 2001 in the Supreme Court of the State of New York..

The current bond amount for the White Oak site is $ 3,832,000.

Inspector's Signature: Peter Hess #46 Date: November 26, 2001

Note: This inspection report does not constitute an affidavit of compliance with the regulatory program of the Division of Oil, Gas & Mining.

cc: James Fulton, OSM
David Miller, Lodestar
Price Field office
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FEDERAL

Permit Number C/007/001

August 24, 1999 (Revised October 26,2001)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801
(801) 538-5340

This permit, C/007/001, is issued for the State of Utah by the Utah Division of Oil, Gas and Mining (DOGM) to:

Lodestar Energy, Inc.
333 West Vine Street, Suite 1700
Lexington, Kentucky 40507-1628
(606) 255-4006

for the White Oak Complex (White Oak #1 and #2 Mines, Whisky Creek Mine, White Oak Loadout, Belina Haul Road and the Mine Office Facilities). Lodestar Energy, Inc. owns or controls federal coal leases U-020305, U-017354, U-044076, and U-067498, a Carbon County coal lease and fee-owned parcels. A performance bond is filed with the DOGM in the amount of $4,292,000.00, payable to the state of Utah, Division of Oil, Gas and Mining and the Office of Surface Mining Reclamation and Enforcement (OSMRE). DOGM must receive a copy of this permit signed and dated by the permittee.

Sec. 1 **STATUTES AND REGULATIONS** - This permit is issued pursuant to the Utah Coal Mining and Reclamation Act of 1979, Utah Code Annotated (UCA) 40-10-1 et seq, hereafter referred to as the Act.

Sec. 2 **PERMIT AREA** - The permittee is authorized to conduct coal mining and reclamation operations on the following described lands within the permit area at the White Oak Complex situated in the state of Utah, Carbon County, and located:

Township 13 South, Range 6 East, SLBM

Section 24: SE 1/4, and portions of S 2 NE 1/4, NW 1/4 NE 1/4, and E 2 SW 1/4
Section 25: E 2, portion of W 2
Section 35: Portions of E 2 E 2, and SW 1/4 SE 1/4
Section 36: All

Township 13 South, Range 7 East, SLBM
Section 8: E 2 SE 1/4, portion of SW 1/4 SE 1/4
Section 9: W 2SW 1/4

Township 13 South, Range 7 East, SLBM
Section 16: W 2 W 2, NE 1/4 NW 1/4, NW 1/4 NE 1/4
Section 17: NE 1/4 excluding parts of SW 1/4 NE 1/4 and NE 1/4 NE 1/4, N 2SE1/4
Section 19: S 2 SW 1/4, NE 1/4 SW 1/4, and portions of W 2 E 2 , E 2 NW 1/4
Section 20: Portions of NE 1/4 NE 1/4
Section 21: Portions of NW 1/4 NW 1/4
Section 30: W 2 W 2, SE 1/4 SW 1/4, NE 1/4 NW 1/4
Section 31: W 2 NW 1/4, SW 1/4

Township 14 South, Range 6 East, SLBM
Section 1: E 2 NE 1/4, NE 1/4 SE 1/4, N1/2 SE1/4 NW1/4, N1/2 SW1/4 NW1/4, Lots 2, 3 and 4

Township 14 South, Range 7 East, SLBM
Section 6: W 2, W 2 E 2
Section 7: NW 1/4, NW 1/4 NE 1/4

This legal description is for the permit area of the White Oak Complex (3,906 acres). The permittee is authorized to conduct coal mining and reclamation operations connected with mining on the foregoing described property subject to the conditions of the leases, the approved mining plan, including all conditions and all other applicable laws and regulations.

Sec. 3 **COMPLIANCE** - The permittee will comply with the terms and condition of the permit, all applicable performance standards and requirements of the State Program.

Sec. 4 **PERMIT TERM** - This permit becomes effective on October 26, 2001 and expires on August 24, 2004.

Sec. 5 **ASSIGNMENT OF PERMIT RIGHTS** - The permit rights may not be transferred, assigned or sold without the approval of the Director, DOGM. Transfer, assignment or sale of permit rights must be done in accordance with applicable regulations, including but not limited to 30 CFR 740.13(e) and R645-303.

Sec. 6 **RIGHT OF ENTRY** - The permittee shall allow the authorized representative of the DOGM, including but not limited to inspectors, and representatives of OSMRE, without advance notice or a search warrant, upon presentation of appropriate credentials, and without delay to:

A. Have the rights of entry provided for in 30 CFR 840.12, R645-400-110, 30 CFR 842.13 and R645-400-220; and,

B. be accompanied by private persons for the purpose of conducting an inspection in accordance with R645-400-210 and 30 CFR 842, when the inspection is in response to an alleged violation reported by the private person.

Sec. 7 **SCOPE OF OPERATIONS** - The permittee shall conduct coal mining and reclamation operations only on those lands specifically designated as within the permit area on the maps submitted in the mining and reclamation plan and permit application and approved for the term of the permit and which are subject to the performance bond.

Sec. 8 **ENVIRONMENTAL IMPACTS** - The permittee shall minimize any adverse impact to the environment or public health and safety through but not limited to:

A. Accelerated monitoring to determine the nature and extent of noncompliance and the results of the noncompliance;

B. Immediate implementation of measures necessary to comply; and

C. warning, as soon as possible after learning of such noncompliance, any person whose health and safety is in imminent danger due to the noncompliance.

Sec. 9 **DISPOSAL OF POLLUTANTS** - The permittee shall dispose of solids, sludge, filter backwash or pollutants in the course of treatment or control of waters or emissions to the air in the manner required by the approved Utah State Program and the Federal Lands Program which prevents violation of any applicable state or federal law.

Sec. 10 **CONDUCT OF OPERATIONS** - The permittee shall conduct its operations:

A. In accordance with the terms of the permit to prevent significant, imminent environmental harm to the health and safety of the public; and

B. utilizing methods specified as conditions of the permit by DOGM in approving alternative methods of compliance with the performance standards of the Act, the approved Utah State Program and the Federal Lands Program.

Sec. 11 **EXISTING STRUCTURES** - As applicable, the permittee will comply with R645-301 and R645-302 for compliance, modification, or abandonment of existing structures.

Sec. 12 **RECLAMATION FEE PAYMENTS** - The operator shall pay all reclamation fees required by 30 CFR Part 870 for coal produced under the permit, for sale, transfer or use.

Sec. 13 **AUTHORIZED AGENT** - The permittee shall provide the names, addresses and telephone numbers of persons responsible for operations under the permit to whom notices and orders are to be delivered.

Sec. 14 **COMPLIANCE WITH OTHER LAWS** - The permittee shall comply with the provisions of the Water Pollution Control Act (33 USC 1151 et seq,) and the Clean Air Act (42 USC 7401 et seq), UCA 26-11-1 et seq, and UCA 26-13-1 et seq.

Sec. 15 **PERMIT RENEWAL** - Upon expiration, this permit may be renewed for areas within the boundaries of the existing permit in accordance with the Act, the approved Utah State Program and the Federal Lands Program.

Sec. 16 **CULTURAL RESOURCES** - If during the course of mining operations, previously unidentified cultural resources are discovered, the permittee shall ensure that the site(s) is not disturbed and shall notify DOGM. DOGM, after coordination with OSMRE, shall inform the permittee of necessary actions required. The permittee shall implement the mitigation measures required by DOGM within the time frame specified by DOGM.

Sec. 17 **APPEALS** - The permittee shall have the right to appeal as provided for under R645-300.

Sec. 18 SPECIAL CONDITIONS - There are special conditions associated with this permit, see Attachment A.

The above conditions (Secs. 1-18) are also imposed upon the permittee's agents and employees. The failure or refusal of any of these persons to comply with these conditions shall be deemed a failure of the permittee to comply with the terms of this permit and the lease. The permittee shall require his agents, contractors and subcontractors involved in activities concerning this permit to comply with these conditions. These conditions may be revised or amended, in writing, by the mutual consent of DOGM and the permittee at any time to adjust to changed conditions or to correct an oversight. DOGM may amend these conditions at any time without the consent of the permittee in order to make them consistent with any new federal or state statutes and any new regulations.

THE STATE OF UTAH

By: [signature] Associate Director, Mining

Date: October 26, 2001

I certify that I have read, understand and accept the requirements of this permit and any special conditions attached.

_____
Permittee (Authorized Representative)

Date: _____

ATTACHMENT A

As conditions of the permit, the Permittee must provide the following in accordance with:

1) **Water Monitoring.** R645-301-731.200.
Lodestar Energy, Inc. will submit water quality data for the White Oak Complex and Loadout, in an electronic format through the Electronic Data Input web site, http://hlunix.hl.state.ut.us/cgi-bin/appx-ogm.cgi.

2) **Mining Operations and Facilities.** R645-301-553. The Permittee may take more than 60 days to do rough backfilling and grading provided that no more than 306,000 LCY of spoil may be stored in the temporary spoil pile or in any pit or other location at the mine where it is not in the approximate location for final grading.
R645-301-560. The Permittee must establish the approximate location of the upper portion of Whisky Creek during rough backfilling and grading.

3) **Operations Plan Hydrologic Information**.
R645-301-742.310. By November 26, 2001, the Permittee will revise all Map R645-301-742-310B versions (submitted on September 10, 2001) to indicate that the correct weighted curve number for Zone 4 is 74.

4) **Operational Use of Explosives.** R645-301-524.330 and R645-301-524.340. A pre-blast survey of the Questar gas pipeline must be conducted by the Permittee. Copies of the pipeline survey must be provided to Questar prior to blasting to provide an opportunity for comments. Copies of pipeline survey must be provided to the Division within 10 days of completion of the survey.

5) **General Reclamation Requirements.** R645-301-541.400. By January 26, 2002, details of the reclamation sequence of the Belina Haul Road and the White Oak Complex coal pad and Sediment Pond 004A must be submitted to the Division

6) **Post Mining Land Uses.** R645-301-412. By January 26, 2002, the Permittee must remove all references to construct the 1200-foot section of road because the Oman's desire to construct it themselves or the lease agreement must be modified. Also by January 26, 2002, comments from the landowners concerning the postmining land use for Section 30 must be provided.

7) **Hydrologic Reclamation Plan.**
R645-301-731.120. By November 26, 2001, the Permittee must revise Figure SRP-2 to include: 1) the location of the highwall in the Relocated Stream Profile that will be moved further upstream, and 2) the graded spoils in the restored stream channel that will be removed from the Transition X-Section to more accurately reflect the actual design.

8) **Maps Plans and Cross-Sections of Reclamation.** R645-301-542.300 and R645-301-521.152. By November 26, 2001 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

9) **Bonding.** R645-301-840.520 By November 2, 2001, the Permittee must notify the Division of the capacity of Frontier Insurance Company to provide adequate bond coverage for the White Oak Complex.

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CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT (CHIA)

MUD CREEK BASIN
AND
UPPER HUNTINGTON CREEK BASIN

Skyline Mines
C007/005

White Oak Mines
C007/001

Carbon, Emery, and Sanpete Counties, Utah

October 17, 2001

I. INTRODUCTION

The Skyline and White Oak mines are located in the northern Wasatch Plateau Coal Field, approximately 5 miles southwest of Scofield Reservoir and 25 miles west of the city of Price, Utah. Castle Valley, where the cities of Price and Huntington are located, lies east of the Wasatch Plateau, and farther east is the San Rafael Swell. The Sanpete valley is west of the Wasatch Plateau (Figure 1).

The Skyline leases straddle the drainage divide between upper Huntington Creek and Mud Creek basins. The Carbon - Emery County line lies along this divide. Skyline is mining beneath both basins, but the mine portals are in Eccles Canyon in the Mud Creek basin. Skyline's leases abut the Sanpete County line on the west. The Skyline operation consists the No. 1, No. 2, and No. 3 Mines. Construction began in 1980. The No. 3 Mine began production in October 1981, the No. 1 in June 1982. A ventilation portal was opened by breakout from the #3 mine into the South Fork of Eccles Creek in 1989. Development of the #2 Mine began in 1992. The end of coal production from the Skyline mines is projected for the year 2015. Associated with the mines are a conveyor down Eccles Canyon, a loadout at the mouth of Eccles Canyon, and a waste rock disposal site in U.P. Canyon near the town of Scofield.

The mines, loadout, and office area of the White Oak Complex, operated by Lodestar Energy, Inc., are the only other actual mining activity in the area. These were operated by Valley Camp of Utah, Inc. and known as the Belina Complex prior to 1994. The mines are located east of and adjacent to the Skyline mines. Access to the White Oak/Belina mines is through Whisky Canyon, a side canyon to Eccles Canyon, but approximately 22 % or 700 acres of the White Oak/Belina permit area is within Huntington Creek basin. Road construction for the White Oak/Belina Complex began in 1975. The White Oak/Belina #1 Mine operated underground from 1979 through June 1998 and the White Oak/Belina #2 Mine operated underground from 1982 through September 2001. A change in the mining method was introduced at the cessation of underground mining at the White Oak/Belina #2 Mine. Surface mining of the White Oak/Belina #1 and #2 mine portal area has been in operation since November 2001. The surface mining of the barrier coal accounts for approximately 47 acres of surface disturbance. The White Oak/Belina loadout and mine office are in Pleasant Valley, just downstream of the Skyline loadout.

White Oak began acquiring baseline data in 1994 with the objective of obtaining a permit to mine coal east of Pleasant Valley and beneath Long Canyon, and possibly beneath the Jump Creek and Beaver Creek drainages. Access is planned to be through one or more portals in the vicinity of the disturbed area at the White Oak/Belina loadout. The additional drainages that may be involved in this expanded operation have not been included in this CHIA.

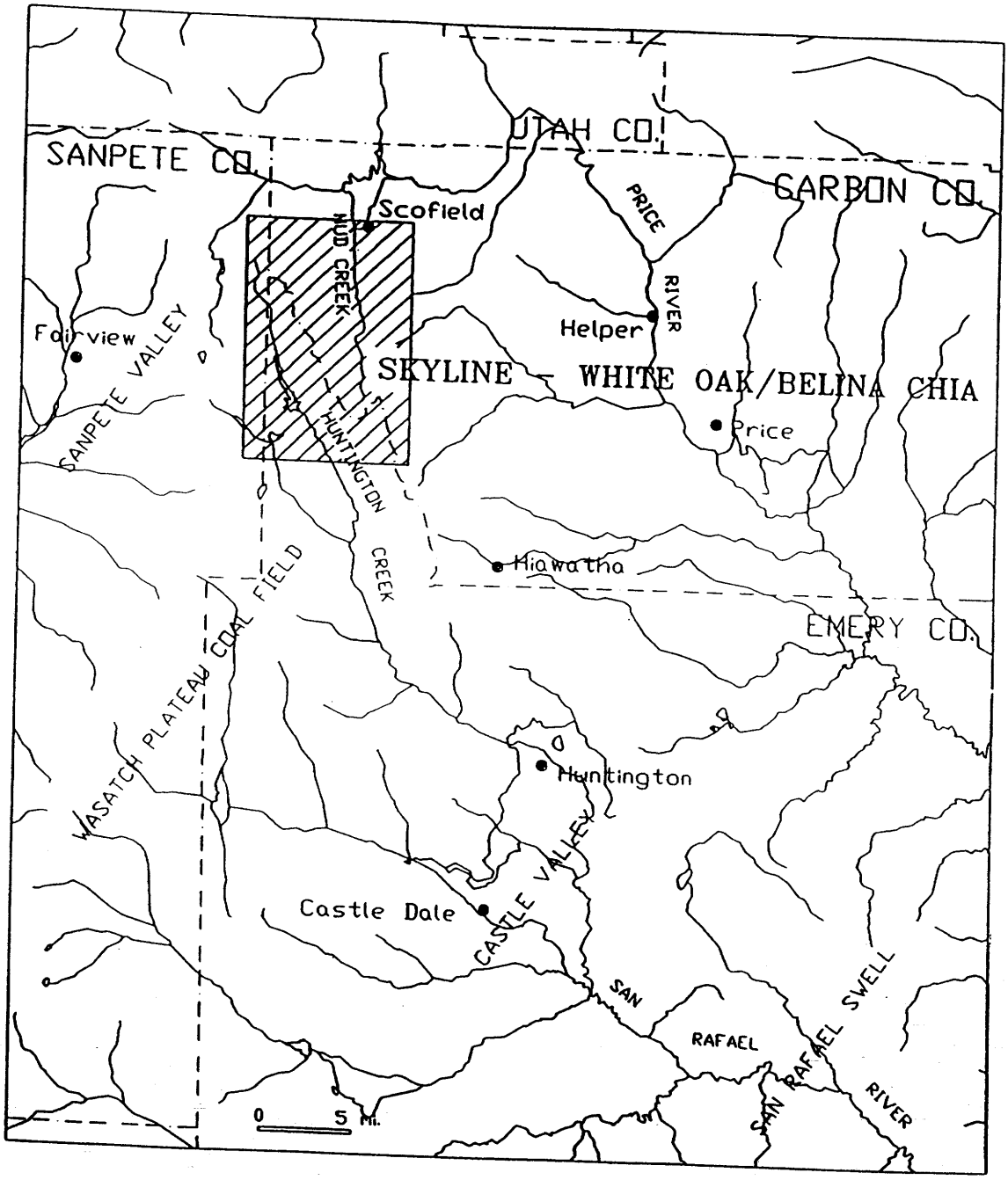


Figure 1 - Location Map

This cumulative hydrologic impact assessment (CHIA) is a findings document involving an assessment of the cumulative impact of all anticipated coal mining operations on the hydrologic balance within the Cumulative Impact Area (CIA). The CHIA is not a determination if coal mining operations are each designed to prevent material damage beyond their respective permit boundaries when considered individually, but rather is a determination if there will be material damage resulting from effects that become cumulative outside the individual permit boundaries.

The objectives of a CHIA document are to:

1.	Identify the Cumulative Impact Area (CIA).	(Part II)
2.	Describe the hydrologic system.	(Part III)
3.	Document the baseline conditions of surface and ground water quality and quantity.	(Part IV)
4.	Identify which hydrologic resources are likely to be impacted and determine which parameters are important for predicting future impacts to those hydrologic systems.	(Part V)
5.	Identify relevant standards against which predicted impacts can be compared.	(Part VI)
6.	Estimate probable future impacts of mining activity with respect to the parameters identified in 4.	(Part VII)
7.	Assess probable material damage.	(Part VIII)
8.	Make a statement of findings.	(Part IX)

This CHIA has been prepared by the Utah Division of Oil, Gas, and Mining. It complies with federal and Utah coal regulations as found in 30 CFR 784.14(f) and R645-301-729 respectively. The Belina Mine CHIA by Engineering-Science (1984) and the Huntington Creek Basin CHIA by Simons, Li, and Associates, Inc. (1984), both prepared for the U. S. Office of Surface Mining (OSM), provided much of the information used in this CHIA. The White Oak/Belina (Valley Camp of Utah, 1993) and Skyline (Coastal States, 1993) Mine Reclamation Plans (MRP) have also been used. The Technical Assessment (TA) for the Skyline Mine permit includes information similar to that required for a CHIA, but a complete CHIA was apparently not prepared at the time the original permit was approved in 1980.

II. CUMULATIVE IMPACT AREA (CIA)

The Cumulative Impact Area (CIA) is shown on Figure 2. This is the area within which the actual and anticipated coal mining activities may interact to affect the surface and ground water. The CIA is determined based on anticipated mining activities, knowledge of surface and ground water resources, and anticipated impacts of mining on those water resources. Both surface and ground water CIA's have been delineated.

Mine operations within the CIA include Coastal States Energy Company's Skyline mines, the Skyline conveyor belt in Eccles Canyon, the Skyline coal loadout at the mouth of Eccles Canyon, the Skyline waste rock disposal site located in U.P. Canyon just southeast of the town of Scofield, the White Oak/Belina mines, and the White Oak/Belina loadout and office building in Pleasant Valley. Operation of the Belina mines was transferred from Valley Camp of Utah to White Oak Mining and Construction in 1994, and then to Lodestar Energy, Inc. in July 1999.

When the Belina Mines CHIA was prepared in 1984 (Engineering-Science, 1984) the Scofield, Kinney #2, Utah #2 (including the Miller Canyon tract), and Blazon mines were included in the CIA as anticipated mining activities. The Utah #2 was mined by Valley Camp of Utah from 1974 to 1978 but was abandoned due to severe faulting. The Utah #2 portal, in the disturbed area now permitted for the White Oak/Belina loadout, has been sealed; however, anticipating a possible resumption of mining in this area, White Oak Mining and Construction began a water sampling program in the summer of 1994. The Blazon mine was closed in 1982. The site was not fully reclaimed and the reclamation bond was forfeited. Further reclamation work was conducted by the AML program and completed in Fall 2000. There has been no mining activity at the Scofield and Kinney mines.

Coal mining in Mud Creek basin dates back over 100 years. Previous mining has left areas of unreclaimed and unvegetated land in most watersheds. Hydrologic impacts from these previous operations, including the small abandoned strip mine where Skyline has located their waste rock disposal site, are incorporated in the baseline information.

The surface water CIA encompasses all of Mud Creek basin and most of Huntington Creek basin upstream of Electric Lake dam. Mud Creek basin includes the ephemeral drainages on the east side of Pleasant Valley, one of which is U.P. Canyon where Skyline's waste rock disposal site is located. The northern boundary of the CIA lies along Granger Ridge, between Woods Canyon and the streams flowing northward into Fish Creek basin, another headwater basin of the Price River that flows into Scofield Reservoir. The Winter Quarters coal tract is being investigated for possible northward expansion of the Skyline mines beneath Winter Quarters and Woods Canyons. Two small pieces of that coal tract, totaling approximately 40 acres, lie just over Granger Ridge in the Fish Creek drainage. However, the Fish Creek drainage has not been included in the CIA because of the small size of the two pieces and their location at the fringe of the coal tract where the potential for impact is lowest.

Surface mining methods incorporated in the upper Whisky Creek drainage, in the area of the White Oak/Belina #1 and #2 Mines, should have minimal cumulative impact to the Mud

Creek basin. A total of 47 acres within the disturbed area boundary will be impacted by the surface mining, including approximately 750 linear feet of Whisky Creek to be reconstructed. No significant seeps or springs have been monitored in the area of the Surface Mining. Any flows greater than 3 gpm encountered at the headwall during surface mining will have a French drain installed to enable flow continue to report to Whisky Creek. Whisky Creek, an intermittent stream with flow ranging from 0 to 1 cfs in the area around the surface mining, is being reconstructed in a manner that will enable flow to continue downstream and not infiltrate into the fill. The drainage basin reporting to the portion of Whisky Creek being reconstructed contains approximately 185 acres that accounts for approximately 0.8 percent of the Mud Creek drainage.

The watersheds of upper Huntington, Little Swens, Swens, and Boulger Canyons have been included in the surface water CIA because their lower reaches are within the area of projected subsidence in the current mine plan. Boulger and Huntington Creeks and Electric Lake will be protected from subsidence by buffer zones. Little Eccles and Bear Canyons and several small unnamed drainages south of Boulger Canyon have not been included in the CIA, even though they flow to Electric Lake, because they are entirely outside areas of anticipated mining.

Electric Lake and Scofield Reservoir are large enough that they are expected to dilute or buffer hydrologic impacts to the point that they will not be detectable within them or downstream of them. Castle Gate Mine, located over 30 miles downstream from Scofield Reservoir, is the nearest coal mining operation with potential impact in the Price River basin. There are several mines operating in lower Huntington Canyon, the nearest being Genwal Coal Company's Crandall Canyon mine approximately 10 miles downstream from the Electric Lake dam.

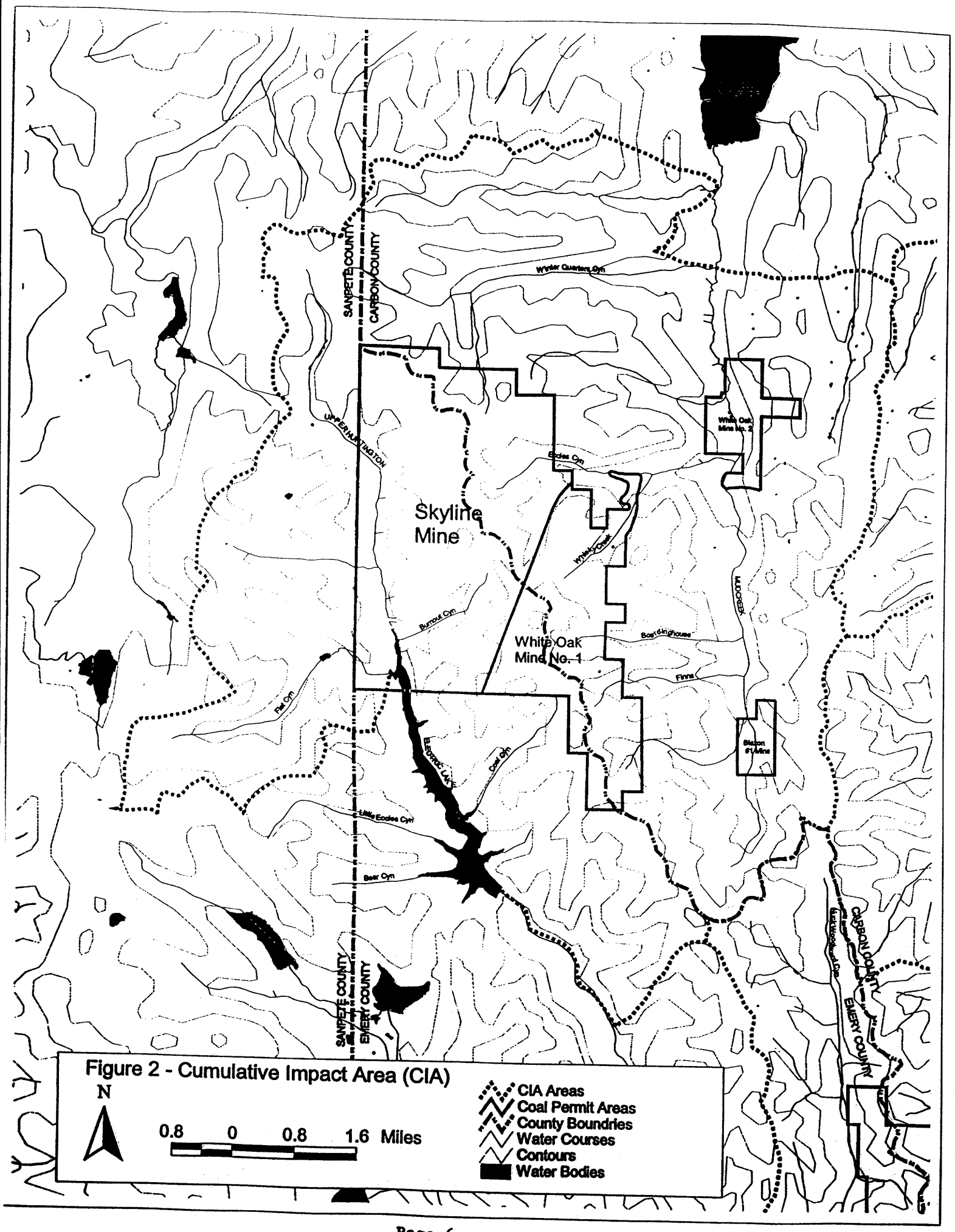


Figure 2 - Cumulative Impact Area (CIA)

000157

Simons, Li, and Associates (1984) prepared a CHIA for the entire Huntington Creek basin. In 1994 UDOGM prepared an updated CHIA of Huntington Creek basin downstream of Nuck Woodward Canyon.

A ground water CIA should include the area between the anticipated mining operations and the aquifer discharge points. Shallow, perched aquifers are recharged within relatively small areas around the seeps and springs where they discharge. These are treated as an aggregate in a single shallow ground water CIA that coincides with the surface water CIA.

The regional aquifer discharges as springs and baseflow along Mud Creek and the lower reaches of its tributaries. It also discharges along Huntington Creek downstream of Electric Lake. The CIA for this regional aquifer extends to the farthest upstream outcrop of Mancos Shale in Huntington Canyon, where the O'Conner fault crosses Huntington Canyon near Sulphur Spring. The extent of the regional aquifer to the west and north is not known. Monitoring well data show the potentiometric surface generally corresponds to surface topography, so the west and north boundaries for the regional aquifer CIA have been made coincident with the surface drainage divides that delineate the surface CIA. The east boundary of the ground water CIA coincides with the surface CIA boundary to include the waste rock disposal site in U. P. Canyon.

III. HYDROLOGIC SYSTEM

The CIA is located in both the Mud Creek and upper Huntington Creek basins, headwater basins of the Price and San Rafael Rivers, respectively. The Price River flows generally southeast and passes through the city of Price. Huntington Creek flows generally east. It emerges from the Wasatch Plateau near the town of Huntington and joins with Cottonwood and Ferron Creeks on the east side of Castle Valley to form the San Rafael River. The Price and San Rafael Rivers are tributaries to the Green River, which in turn is tributary to the Colorado River.

Precipitation on the Wasatch Plateau varies from 40 inches at higher elevations to less than 10 inches at lower elevations, 70% to 80% falling as snow from October to April. Precipitation averages 22 to 26 inches per year at the Skyline minesite. It averages more than 30 inches per year on the higher ridges and in the upper Huntington Creek basin (Coastal, 1993; Simons, Li, and Associates, 1984). Actual and potential evapotranspiration rates are roughly equal (less than 18 inches per year) in the upper elevations of the Wasatch Plateau (Waddell and others, 1983b). Probably less than 5% of the precipitation recharges the ground water system (Price and Arnow, 1979). The Wasatch Plateau is classified as semiarid to subhumid.

Vegetation varies from Sagebrush/Grass and Desert Shrub communities at lower elevations to Spruce/Fir/Aspen and Mountain Meadow communities at higher elevations. Other vegetative communities include Mountain Brush, Pinon-Juniper/Sagebrush, Ponderosa, and Riparian (Simons, Li, and Associates, 1984). These communities are generally used for wildlife habitat and livestock grazing. Even though slopes are steep, vegetation is generally thick and soils with high organic content are well developed, providing an adequate medium for ground water recharge (Coastal, 1993, p. PHC2-5).

Surface Water

Mud Creek basin drains an area of approximately 22,000 acres. The basin is asymmetric. Watersheds on the dominant west flank contain perennial and ephemeral streams that flow eastward to Mud Creek through straight, deeply incised canyons. Small, ephemeral watersheds drain to Mud Creek from the east flank of the basin.

Mud Creek flows north through Pleasant Valley to Scofield Reservoir and constitutes around 16% of the annual flow to that reservoir (Valley Camp, 1993, p. 40). Fish Creek supplies approximately 75% of the annual flow into Scofield Reservoir (Waddell and others, 1983b, p. 43) and Pondtown, Lost/Dry Valley, and Miller Canyon Creeks add the rest. The Price River, which is used for irrigation in Castle Valley and provides the municipal water supply for the city of Price, flows from the reservoir.

The upper Huntington Creek basin, approximately 20,000 acres (18,000 acres in the CIA), is drained by both perennial and ephemeral streams. These streams flow into Electric Lake, which is a reservoir owned and operated by Utah Power and Light Company to supply water to two coal fired electric generating plants located downstream along Huntington Creek. The discharge of upper Huntington Creek has been regulated by this reservoir since its construction in 1972. Several smaller reservoirs are located on Huntington Creek tributaries just outside the CIA. These reservoirs store water used for crop irrigation downstream in Castle Valley.

Surface Water Usage

Hansen, Allen, and Luce, Inc. conducted a survey of water rights for Valley Camp of Utah in 1990. The survey covered most of the CIA. One-hundred ninety-four surface water rights were found, 106 for stockwatering, 25 for irrigation, 55 undeclared, and the remaining 8 for other uses. Most perennial and ephemeral streams in the CIA have water rights filed on them.

Ground Water

Ground water is found principally in two configurations within the CIA: numerous small, localized perched systems related to discontinuous sandstone lenses in the Blackhawk Formation, and a continuous regional system in the coal seams and adjacent rocks of the lower Blackhawk Formation and the underlying Star Point Sandstone. A principal factor influencing the distribution and availability of ground water in these systems is the geology.

Geology

Stratigraphy

An offlap (regressive) sequence is exposed in outcropping Cretaceous rocks of the Mesa Verde Group within the CIA. At the bottom of the Mesa Verde Group is the Starpoint Sandstone, which intertongues with the underlying Mancos Shale. The Starpoint in turn is

along the ridge in the northern part of the CIA. Tertiary rocks of the Wasatch Group form the uppermost exposures in areas south of the CIA. A generalized stratigraphic section and illustration of the intertongueing are shown in Figures 3 and 4.

The Mancos Shale consists of marine shales interbedded with sandstones and minor amounts of limestone. The Masuk Shale Member at the top of the Mancos grades upward into the Starpoint Sandstone, and westward thinning wedges of Masuk Shale intertongue with the Starpoint. These shale beds are good aquicludes, with low horizontal and vertical permeabilities even near faults.

The Starpoint Sandstone was deposited in a barrier-beach environment and intertongues with the Mancos Shale below and the Blackhawk Formation above. The sandstone tongues thicken westward and grade into the backbarrier, coastal plain, and deltaic deposits of the Blackhawk Formation. Doelling (1972) described the Starpoint as almost devoid of shale in the Scofield area. Bedding is often massive. The Starpoint is described as 600 feet (Engineering Science, 1984) to 1000 feet thick (Doelling, 1972) in the vicinity of the CIA.

The Starpoint is generally a poor aquifer, due in part to low permeability shale lenses, but water bearing characteristics are greatly enhanced by localized faulting, fracturing, and jointing. The large discharge and low seasonal variability of baseflow to Mud Creek and of springs along the Pleasant Valley fault zone indicate the Starpoint has a large storage coefficient and relatively high transmissivity (Wadell and others, 1983b, p. 78).

The Blackhawk Formation consists of approximately 1500 to 1900 feet of lenticular claystones, siltstones, sandstones, and coal seams deposited in backbarrier, coastal plain, and deltaic environments. Claystones contain high percentages of montmorillonite and other swelling clays (Coastal, 1993, p. PHC2-3). The Blackhawk is the main coal bearing formation in the Wasatch Plateau. The important coal seams occur in the lower 350 feet, which is the section that intertongues with the Starpoint Sandstone. The lower Blackhawk and Starpoint Sandstone are usually considered to be one continuous aquifer.

Fluvial channel sandstones are found in the lower Blackhawk but are more frequent toward the top of the formation. These sandstones are local in extent, generally fine grained, and well cemented. They have localized high clay content. The discontinuous character of these channel sandstones and the abundance of clay throughout the Blackhawk Formation produce perched aquifers and favor formation of local flow systems that discharge through numerous seeps and springs.

System	Series	Stratigraphic Unit		Thickness (feet)	Description
TERTIARY	Paleocene	Wasatch Group	Flagstaff Limestone	200 - 1,500	Dark yellow-gray to cream colored, dense, cherty, lacustrine limestone with thin interbeds of gray and gray-green shale. Minor amounts of sandstone and volcanic ash, with pink calcareous siltstone at the base in places. Ledge former. Many springs originating from this unit have large discharge rates shortly after snowmelt with rapid decrease, indicating large transmissivity and small storage capacity characteristic of solution-cavity ground water systems.
			North Horn Formation (Lower Wasatch)	500 - 2,500	Variegated shale and mudstone interbedded with sandstone, conglomerate, and limestone, all of fluvial and lacustrine origin. Ledge former. Many springs originate where low permeability layers intersect the land surface, indicating perched ground water systems.
CRETACEOUS	?				
	Maestrichtian				
	Campanian	Mesaverde Group	Price River Formation	500 - 1,000	White to gray, gritty, calcareous to argillaceous sandstone interbedded with subordinate carbonaceous shale and conglomerate. Ledge and slope former.
			Castlegate Sandstone Member	150 - 500	Coarse grained fluvial sandstone, pebble conglomerates, and subordinate zones of mudstone. Cliff former. High permeability but largely unsaturated. Seeps and springs with seasonal variability are common.
			Blackhawk Formation	700 - 1,900	Fine to medium grained, thin to thick bedded, massive fluvial channel sandstone, alternating with subordinate siltstones, carbonaceous shales and mudstones, and coal. Fluvial channel sandstones are more common in the upper portion. Thick, discontinuous coal seams in the lower 350 feet. Slope former with sandstone ledges. Poor aquifer material even where faulted due to the discontinuous nature of the channel sands and the swelling properties of the shales. Relatively low transmissivities. Springs have seasonal variability. In-mine flows of up to 200 gpm with rapidly decreasing discharges. The lower Blackhawk and Starpoint are considered to be one aquifer.
			Star Point Sandstone	90 - 1,000	Fine to medium grained, massive, moderately well sorted coarsening upward sandstones. Cliff forming. Subordinate siltstones and carbonaceous shale. Intertongues with the Masuk Shale below and the Blackhawk Formation above. Uppermost portion contains fluvial channel sandstones. Generally poor aquifer material yielding < 10 gpm except where faults and fractures yield up to 300 gpm. Springs have low seasonal variation, indicating large aquifer storage coefficient. Transmissivities are relatively large where rock is fractured and faulted.
	Santonian	Mancos Shale	Masuk Shale	300 - 1,300	Slope forming sandy marine shales interbedded with sandstones and minor amounts of limestone. Grades upward into and intertongues with the overlying Star Point Sandstone. A good aquiclude.

After Doelling, 1972 and Simons, Li, and Associates, Inc., 1984

Figure 3 - Generalized Stratigraphic Section

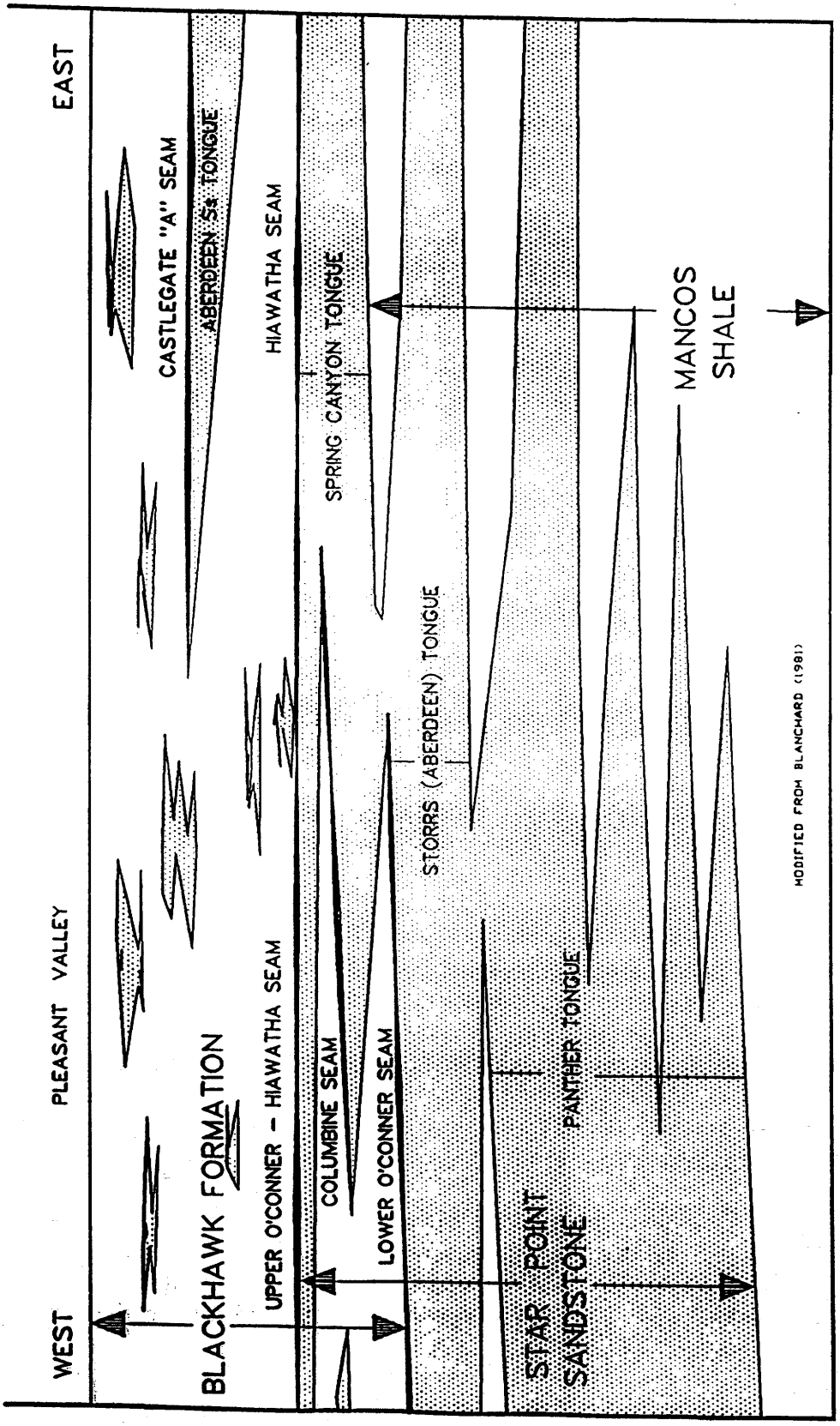


Figure 4 - Skyline - White Oak/Belina Area Generalized Cross Section

The youngest consolidated rocks within the CIA are the fluvial pebble conglomerates and coarse grained sandstones of the Castlegate Sandstone, which is the basal part of the Price River Formation. The Castlegate Sandstone is good aquifer material, with seeps and springs common at the Castlegate-Blackhawk contact. The Castlegate is exposed in the northwest corner of the CIA.

Structure

Surface elevations vary from 7600 feet to 10400 feet within the CIA, with the Starpoint Sandstone and Blackhawk Formation outcrops forming most of this relief.

The CIA lies on the Clear Creek anticline, primarily on the west flank. Dips on the west flank range from three to six degrees, to the southwest at the south end of the CIA and to the northwest at the north end.

The Pleasant Valley fault zone, one segment of a regional fault zone that extends north-south across the Wasatch Plateau, lies on the axis of the Clear Creek anticline. Total vertical displacement is 800 to 900 feet, down to the east. Intertongued Starpoint Sandstone and Mancos Shale crop out west of the fault zone but Blackhawk Formation crops out on the east. Mud Creek flows north along the Pleasant Valley fault zone to Scofield Reservoir, where the fault zone broadens to become the Pleasant Valley Graben. U.P. Canyon, where Skyline's waste rock disposal site is situated, also follows one of the faults of this zone. Strata east of the fault zone but within the CIA are generally flat lying.

Other major faults in the CIA are high-angle, normal, and run north-south to northeast-southwest. Movement is dominantly down to the west. The largest of these faults, with up to 350 feet of displacement, is the O'Conner fault that obliquely transects the White Oak/Belina permit area. The Connelville fault, a zone up to 1000 feet wide and with up to 250 feet cumulative vertical displacement, separates the Skyline and White Oak/Belina mines. Upper Huntington Creek and Electric Lake lie along the Upper Joes Valley fault zone, which is paralleled on the east by the Valentine fault. The Joes Valley, Valentine, and smaller unnamed faults do not have significant vertical displacement within the CIA. All of these faults gradually die out to the north and do not extend beyond the northern CIA boundary. The O'Conner and Upper Joes Valley faults continue south outside the CIA. Very small displacement faults, oriented roughly east-west, have been encountered in the White Oak/Belina mine and mapped on the surface at the Skyline mine. Four major joint and fracture orientations have been mapped underground and at the surface.

Some of the smaller east-west trending faults have been intruded by magma that solidified to form dikes. A major dike passes through the White Oak/Belina mine operations, extending from Mud Creek to the Connelville fault. Coal has been coked adjacent to this dike and has a slightly increased metal content. There is evidence these dikes affect the movement of ground water in the shallow perched systems.

Aquifer Characteristics

Shallow perched ground water systems provide water to the seeps and springs issuing at the Castlegate Sandstone-Blackhawk Formation contact and from sandstone lenses of the Blackhawk Formation. The Blackhawk sandstone lenses are discontinuous and of local extent. Springs and seeps discharge on the slopes at an elevation considerably above nearby streambeds. The majority of seeps and springs issue from the west dipping strata on west facing slopes, often at a shale-sandstone interface. Flow varies seasonally in response to precipitation and snowmelt. The perched systems may provide some flow directly to alluvial and colluvial fill in canyon bottoms, but they do not provide baseflow to sustain perennial streams.

Recharge percolates from the surface downward until shale is encountered. The water then moves downdip and is channeled into discontinuous but more permeable sandstones. Water either continues to move downdip until it is discharged at the surface or resumes vertical flow where more permeable zones are encountered. Discharge from most seeps and springs closely tracks precipitation rates, and recharge probably originates in the small surface depressions or basins in the immediate vicinity. Flow along faults and fractures through the Blackhawk Formation appears minimal due to the sealing ability of the clays, but some recharge gets past the perched systems to reach the deeper regional aquifer. The perched and regional systems are separated by unsaturated rock.

A regional ground water system is located in saturated coal and rock of the lower Blackhawk Formation and Starpoint Sandstone. Observation wells show the water in this deeper regional system flows beneath the headwater drainages in the CIA and probably has minimal influence on the seeps and springs of the shallower perched systems. The potentiometric surface follows the topography, with a ground water divide roughly beneath the surface divide, and flow is to the southwest and northeast. Water levels in Skyline's monitoring wells fluctuate seasonally, the changes lagging snowmelt and rainfall events by up to two months. A long-term decline of water levels in the wells, typically less than 3 feet per year, is attributed to long-term decreases in precipitation and to dewatering of the aquifer by mining (Coastal, 1993, PHC2-4).

Natural discharge from the regional system occurs as baseflow into Mud Creek and the lower reaches of its perennial tributaries and into Huntington Creek downstream of Electric Lake. Natural discharge also occurs as seeps and springs at faults and along the outcrop of the impermeable Mancos Shale. The Mancos Shale outcrop delimits the lateral extent of this aquifer. Water is unable to flow downward through the Mancos in any significant amount but will flow laterally through more permeable overlying strata until it discharges at the surface. Little is known of the Blackhawk-Starpoint aquifer to the west, but it does not crop out and is considered to extend beneath the San Pete valley.

Skyline's monitoring well at the waste rock disposal site shows that the regional aquifer continues in Blackhawk-Starpoint strata east of Mud Creek. Water supply wells in alluvium along Pleasant Valley produce from a shallow unconfined aquifer interconnected with Mud Creek. The connection between this alluvial aquifer and the regional Blackhawk-Starpoint aquifer is not uniform, but areas have been identified where ground water flows through the Pleasant Valley fault from the regional aquifer to the alluvial aquifer and directly to Mud Creek.

During periods of low flow, water in Mud Creek comes mainly from seepage from the regional aquifer (Waddell and others, 1983b, p. 34).

Faulting has only local importance in the Blackhawk Formation because clays tend to seal fractures and stop or restrict water movement. On the other hand the clay content of the Starpoint Sandstone is low, fractures are not as readily sealed by clay as in the Blackhawk, and secondary permeability created by fracturing increases the mobility of water through the regional system.

Horizontal and vertical hydraulic conductivities in the Starpoint Sandstone, as measured by Core Laboratories, Inc. in Dallas, Texas, are on the order of 10^{-2} ft/day. Horizontal hydraulic conductivities in the Blackhawk range from no measurable permeability to 10^{-8} ft/day in the shales and 10^{-9} to 10^{-7} ft/day in the siltstones. Vertical hydraulic conductivities may be greater or smaller but are within one order of magnitude of the corresponding horizontal hydraulic conductivity. Sandstones in the Blackhawk Formation have hydraulic conductivities similar to those of the Starpoint Sandstone (Lines, 1985).

Transmissivity of the Blackhawk was determined to be approximately 18 gal/day/ft (2.4 ft^2/day) by a pair of drawdown and recovery tests in a test well near the Skyline portal. No significant difference was noted between the coal zone and sandstone tongue (Vaughn Hansen Associates, 1979, p. 85). Transmissivity of the entire Blackhawk-Starpoint aquifer, based on pump tests and core analyses from the Trail Mountain area, probably ranges from 20 to 200 ft^2/day. Storage coefficient probably averages about 10^{-6} for confined conditions and about 0.05 for unconfined (Lines, 1985, p. 15).

Seeps and Springs

In 1978, 174 seeps and springs were identified on and adjacent to the Skyline permit area, 30% of the sources being seeps. This is roughly one every 40 acres. Higher flows occurred in the springtime. Many seeps and springs dried during the summer and by fall most of the remaining sources flowed less than 2 gpm; only four springs flowed more than 10 gpm. (Coastal, 1993, p. 2-24a and -25a). A survey of the White Oak/Belina mine area in 1978 and 1979 found 94 flowing and 15 dry seeps and springs (Valley Camp, 1993, p. 700-7). In early summer, 8 of the sources had flows greater than 10 gpm, but by autumn most springs were flowing less than 1 gpm and many could not be located (Engineering-Science, 1984, p. 33). Another survey of the White Oak/Belina area in summer of 1990 identified 81 flowing and 43 dry seeps and springs (Valley Camp, 1993, p. 700-7). Monitored springs have exhibited an overall decrease on flow (Coastal, 1993, p, PHC2-6; Valley Camp, 1993,p 700-6). The Skyline and White Oak/Belina surveys probably include duplicate information on many springs because the two permit areas abut.

According to the Seep and Spring survey conducted in the White Oak/Belina area in the summer of 1990, a total of three seeps/springs are affected by the 2001 Surface mining in the area. Seeps/springs S25-13, S25-14, and 30-1 are all located up-gradient of the surface mining. Seep/Spring S25-13 is the only site that provided consistent enough flow to be continually monitored. Recorded quarterly flow measurements from site S25-13 range from 0 to 60 gpm,

and average <5 gpm. It is anticipated that any flow from the three seeps or springs will still report to Whisky Creek and not be significantly impacted by the surface mining.

Seeps and springs often issue at a shale-sandstone interface. Flow along faults and fractures through the Blackhawk Formation appears minimal due to the sealing ability of the clays.

No seeps or springs have been found at Skyline's waste rock disposal site (Coastal, 1993, p. 2-30a). There has not been a detailed survey for seeps and springs for the portion of the CIA that is not in or adjacent to the two mine permit areas.

Stream Seepage

Based on flow duration curves, approximately 19% of Huntington Creek streamflow above Electric Lake is attributed to ground water baseflow, but baseflow accounts for nearly 64% of the annual flow in Eccles Creek. This difference is, in part, because the continuous, saturated lower Blackhawk-Starpoint aquifer forms approximately 25% of the surface of Eccles Canyon but is not exposed in upper Huntington Canyon. In upper Huntington Canyon ground water comes only from thin, localized, perched aquifers associated with sandstone lenses of the upper Blackhawk Formation (Vaughn Hansen Associates, 1979, p. 63 and 68).

Seepage studies were done in Eccles Creek, South Fork of Eccles Creek, and Huntington Creeks. There is a significant increase of flow in Eccles Creek where the stream crosses onto the Starpoint Sandstone outcrop. There is another significant increase at the O'Conner fault where the fault conveys water through fractured Starpoint sandstone to the stream. In comparison, the Connelville fault does not add significantly to flow in either the Main or South Fork of Eccles Creek because potential flow paths through the fractured Blackhawk Formation have apparently been sealed by clays.

Changes of streamflow in Huntington Creek can be largely accounted for by inflow from tributaries and hillside springs. Loss of flow just above Electric Lake is attributed to recharge into the alluvium (Vaughn Hansen Associates, 1979, pp. 68 - 80).

Water in Mines

The coal seams that are mined are in the lower Blackhawk Formation, within strata included in the Blackhawk-Starpoint aquifer. Saturated conditions have been encountered in the White Oak/Belina and Skyline mines and have persisted as mining has progressed downdip. Similar conditions were found in the Utah #2 mine while it operated. Long-term decline of water levels in the Blackhawk-Starpoint aquifer in the vicinity of the Skyline Mines, typically less than 3 feet per year, is attributed to both long-term decreases in precipitation and to dewatering of the aquifer by mining (Coastal, 1993, PHC2-4). Ground water flow into the mines can be characterized as: 1) seepage from the coal seams and associated channel sandstones, 2) flow from Blackhawk channel sandstones that have been fractured by faulting and folding, or 3) flow up from the Starpoint Sandstone through the Blackhawk by way of faults and fractures.

Discharge from coal seams and channel sandstones average approximately 10 gallons per minute per active mine face, but flow of 200 gallons per minute was encountered at the Connelville fault in the White Oak/Belina mines. Water production declines rapidly over a short time. Most flows dry up by the time mining has advanced 500 feet beyond them, but an occasional roof bolt will continue to drip up to 2 gpm for an extended time (Coastal, 1993, p. 2-49). The 200 gallon per minute flow from the Connelville fault in the White Oak/Belina mines decreased to 10 to 15 gallons per minute over a four day period. These observations indicate permeability is localized and recharge to the saturated areas is not extensive. Permeable zones in the Blackhawk sandstones are capable of yielding large quantities of water from storage for a short period of time but are not extensive enough to have sufficient storage or recharge to sustain flows. Seasonal fluctuations of inflow have been observed and are attributed to both seasonal recharge and to subsided areas that intercept surface runoff (Engineering-Science, 1984).

Faulting has only local importance in the Blackhawk Formation because the high clay content tends to seal fractures, and movement of water along most faults appears to be effectively blocked or restricted. Of 44 individual fault planes encountered up to 1988 in the Skyline mines, only 5 dripped water from the roof, 4 from where faults intersected sandstone paleochannels. Water discharged up through the floor from the Starpoint Sandstone along two other faults (Coastal, 1993,p. 2-24).

Fracturing in the Starpoint Sandstone is not as likely to be sealed by clays as in the Blackhawk and as a result secondary permeability created by fracturing tends to increase the mobility of water through the Starpoint. Flows of up to 450 gallons per minute were measured from the Pleasant Valley fault zone in the Utah #2 mine. At different times, flow from the Clear Creek mine portal has been reported to be between 100 and 300 gallons per minute (Waddell and others, 1983b; Engineering-Science, 1984). When UDOGM personnel checked this portal in September, 1993 water was still flowing at approximately the same rate. Most of this water comes into the mine from the Pleasant Valley fault. Water from Mud Creek is intercepted upstream of the mine and reaches the fault by way of abandoned mine workings and through the Starpoint Sandstone (Wadell and others, 1983b). Because of the Pleasant Valley fault zone it is expected that mines east of Mud Creek will typically have larger, more persistent flows than mines on the west side.

North Joes Valley fault has little offset and is not a major structural feature within the CIA. Flow of water from the surface into the mine, through the Blackhawk Formation by way of the North Joes Valley fault zone, would not be anticipated because of the sealing clays in the Blackhawk Formation. In addition, the no mining buffer zone should separate mine workings from main sections of the fault along Huntington Creek and Electric Lake. This will reduce the possibility of reactivation of faults by subsidence and subsequent downward flow along the reactivated faults.

Ground Water Usage

Hansen, Allen, and Luce, Inc. conducted a survey of water rights for the White Oak/Belina mines in 1990. The survey covered most of the area in the CIA. A total of 135 ground water rights was found, 112 on springs and 23 on wells or tunnels. Stockwatering was

the declared use on 62 of the water rights, 41 were for other uses, and the remaining 32 were undeclared. The information is summarized in Table 724.100a in the White Oak/Belina MRP and the locations are shown on Map 724.100a. Springs and seeps are important to wildlife, though there are no filed rights that declare this as a use.

Both the Skyline and White Oak/Belina mines utilize water from wells in Eccles Canyon that were drilled into fault zones in the Starpoint Sandstone. Wells near the Skyline and White Oak/Belina loadouts in Pleasant Valley produce water from both alluvium and Starpoint Sandstone. Water from these wells is for domestic, stockwatering, and other uses.

IV. BASELINE CONDITIONS OF SURFACE AND GROUND WATER QUALITY AND QUANTITY.

Surface Water

Surface water is monitored for quantity and quality at various stations operated by the USGS and the coal mine operators. Locations are shown on Figure 5 and analysis results are found in the Skyline and White Oak/Belina MRP's, the Huntington Creek CHIA, and USGS publications. Monitoring has been infrequent or irregular at some stations. The effects of Electric Lake on the water in Huntington Creek have not been determined.

Surface Water Quantity

Average annual yield from the 22,000 acre Mud Creek drainage, as determined from continuous USGS measurements from 1979 to 1984 at station 09310700, is 7.1 inches. Discharge rates are summarized in Table 1. Highest discharges result from spring snowmelt (Price and Plantz, 1987).

TABLE 1
Discharge of Mud Creek measured near the town of Scofield.

Gaging Station	Date	Average	Maximum	Minimum
USGS 09310700	1979 - 1984 (continuous)	18.2 cfs	389 cfs	1.4 cfs

Eccles, Winterquarters, Boardinghouse, and Finn Creeks are the principal tributaries to Mud Creek. Based on continuous measurements by the USGS from 1980 to 1984 at station 09310600 (Price and Plantz, 1987), average annual yield from the 3,500 acre watershed in Eccles Canyon is 11.7 inches. The maximum recorded peak flow was 71 cfs in May 1984. Skyline recorded high peak flows in 1983 through 1986. Discharge rates are summarized in Table 2.

TABLE 2
Discharge measured near the mouth of Eccles Creek.

Gaging Station	Date	Average	Maximum	Minimum
USGS 09310600	1980 - 1984 (continuous)	4.70 cfs	71.0 cfs	0.62 cfs
Skyline CS-6	1981 - 2000	6.11 cfs	71.2 cfs	0.54 cfs

Skyline's data indicate water began to be discharged from the #3 mine in 1983, and from 1984 to 1992 discharge averaged 0.50 cfs. Discharge from Skyline Mine #1 began in 1989 and averaged 0.28 cfs from 1989 to 1992. Minimum measured discharges from #1 and #3 were 0.08 cfs and 0.13 cfs and maximums were 0.69 cfs and 1 cfs. In late summer to early autumn when stream flow is naturally low, discharge from the Skyline mines has been estimated to account for as much as 60% to 70% of flow in Eccles Creek.

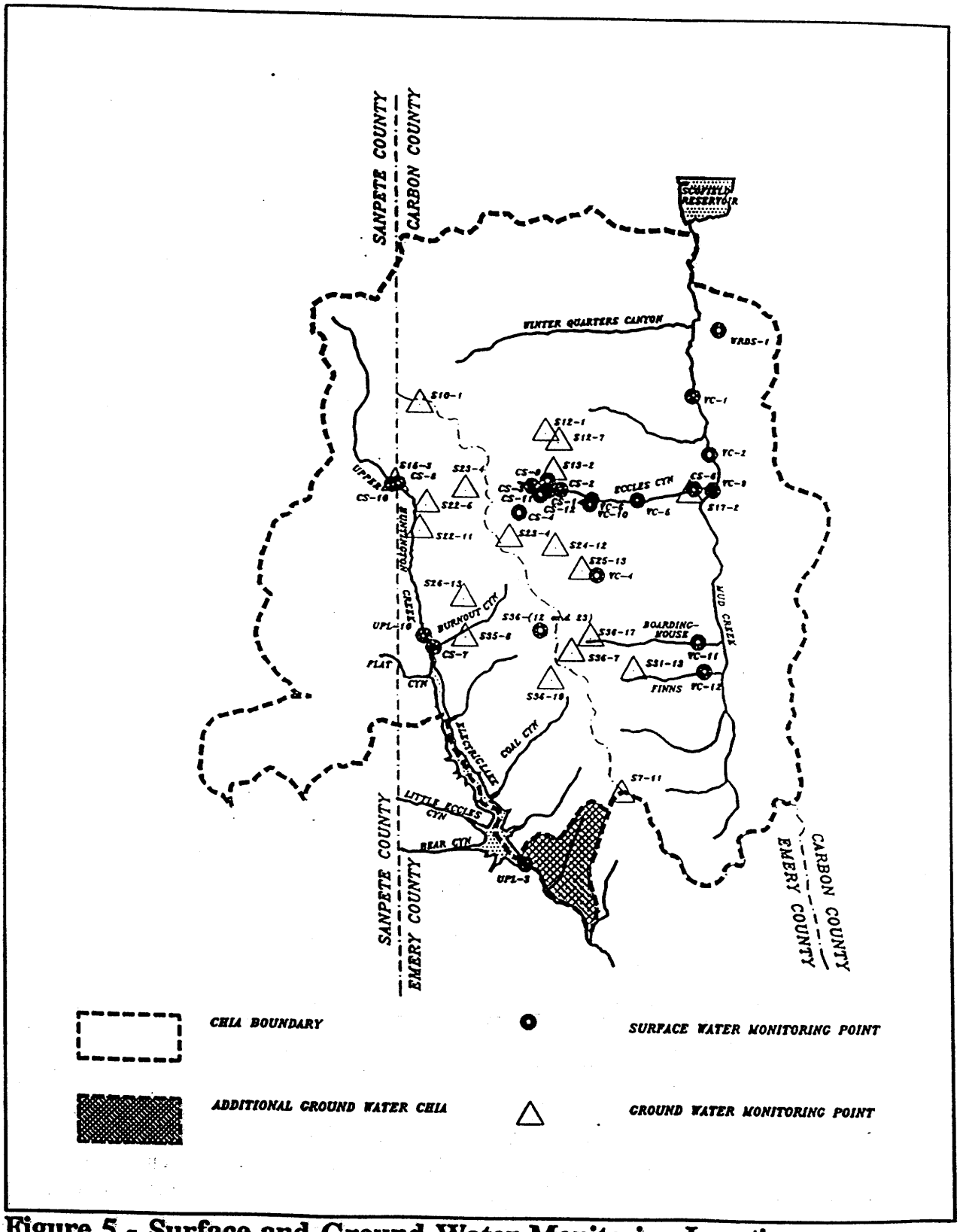


Figure 5 - Surface and Ground Water Monitoring Locations

on portal in South Fork of Eccles Creek in 1989, maximum measured flow at station VC-10 was 10.2 cfs. Periods of no-flow were observed in 1981, 1982, and 1984, but never during the third quarter of the calendar year (July, August, September). Average measured flow from 1978 to 1990 was 1.49 cfs (Table 3).

Construction of the road to the White Oak/Belina Mines in Whisky Canyon began in 1975. Monitoring of Whisky Creek began the same year, so there are no data on conditions prior to disturbance of the drainage. Periods of no-flow were recorded every year from 1976 to 1982 and occurred at least once in each of the four calendar quarters (Table 3). Although not as consistently dry, Whisky Creek was periodically dry from 1982 through 2000.

During average flow conditions Whisky Creek (at VC-5) accounts for approximately 6.3 percent and 2.1 percent of the flow of Eccles Creek and Mud Creek, respectively. Upper Whisky Creek at VC-4 accounts for approximately 27 percent of the flow of VC-5, 1.1 percent of Eccles Creek, and 0.4 percent of Mud Creek, respectively. The Surface mining and reconstruction of Upper Whisky Creek impacts the area immediately surrounding site VC-4. Any flow lost due to infiltration into the fill from Surface Mining is anticipated to surface further downstream in Whisky Creek. Although a significant loss in flow at VC-4 would impact flows at VC-5, minimal cumulative impacts would be felt at Eccles Creek and Mud Creek.

The location of sample site VC-4 was moved upstream approximately 280 ft. upstream due to disturbance created by the Surface mining. VC-4 represents undisturbed drainage of Whisky Creek. Although moved upstream, only one small ephemeral draw was eliminated from the drainage basin resulting in an insignificant change in flow.

TABLE 3
Discharges measured at South Fork of Eccles Creek and Whisky Creek

Gaging Station	Date	Average	Maximum	Minimum
South Fork Belina VC-10	1978 - 1990	1.49 cfs	10.2 cfs	0 cfs (3 of 4 quarters)
Whisky Creek Belina VC-5	1976 – 2000	0.39 cfs	3.70 cfs	0 cfs (4 of 4 quarters)
Whisky Creek Belina VC-4	1977 – 2000	0.07 cfs	1.0 cfs	0 cfs

Boardinghouse and Finn Creeks are not directly affected by current mining, but they have been monitored by Valley Camp of Utah and results are summarized in Table 4 (Valley Camp, 1993, p. 700-23). The single reported observation of this stream during a first calendar quarter, in March 1982, found no flow. If coal production were to be increased at the White Oak/Belina mines, one of these two canyons would probably be the site of an additional mine portal and additional mine water discharge.

TABLE 4
Discharges measured at Boardinghouse and Finn Creeks

Gaging Station	Date	Average	Maximum	Minimum
Boardinghouse Belina VC-11	1980 - 1990	2.05 cfs	12.8 cfs	0 cfs (1 observation)
Finn Creek Belina VC-12	1980 - 1990	0.56 cfs	4.20 cfs	0 cfs (4 of 4 quarters)

No records of monitoring of Winterquarters Creek were found.

Skyline currently monitors upper Huntington Creek where it discharges into Electric Lake, at station UPL-10. Flow is measured periodically when the site is accessible, mainly from May to October. From 1981 to 1993 the average flow during these accessible months was 7.8 cfs (Skyline Mines 1993 Annual Report). Utah Power and Light monitored Huntington Creek above Burnout Creek prior to construction of Electric Lake, and the information is found in the report by Vaughn Hansen Associates (1979). Discharge of upper Huntington Creek is summarized in Table 5.

Average flow of Burnout Creek at station CS-7 from 1981 to 1993 was 1.2 cfs, with minimum and maximum measured flows of 0.09 and 10.24 cfs (Skyline Mines 1993 Annual Report). None of the other tributaries to Electric Lake are known to be monitored. Flow from Electric Lake, which is not monitored at UPL-3, is regulated for the benefit of downstream users and does not accurately characterize the hydrologic system.

TABLE 5
Discharge of Huntington Creek above Burnout Creek.

Gaging Station	Date	Average	Maximum	Minimum
Utah Power & Light	1971 - 1973	-	>170 cfs	±0.5 cfs
Skyline UPL-10	1981 - 1993	7.8 cfs	79 cfs	0.60 cfs

Predicted average discharge for Eccles Creek, based on flow duration curves for water years 1976 through 1978, is 5.43 cfs, corresponding to a yield of 13.4 inches. Flow duration curves from Huntington Creek above Burnout Creek for water years 1972 and 1973, before Electric Lake was filled, indicate an average annual discharge of 13 cfs and a yield of 16 inches per year (Vaughn Hansen Associates, 1979). The predictions are based on data from different periods, but the higher predicted yield from the upper Huntington Creek basin in comparison to that from the Eccles watershed may be a consequence of the relative impermeability of the Blackhawk Formation that forms or immediately underlies the surface over most of the upper Huntington Creek basin (Coastal States, 1993, p. 2-42), and the westward dip of the strata.

Burnout and Huntington Creeks drain 7900 acres, 40% of the upper Huntington Creek basin, and their combined average discharge has been 6500 acre feet per year (9 cfs). Estimating from the Burnout and Huntington Creek data, discharge from the entire 20,000 acres of the upper Huntington Creek basin would be 16,000 acre feet per year (22 cfs). Based on the predicted average yield of 16 inches, average discharge from the 20,000 acres draining to Electric Lake would be approximately 27,000 acre feet per year (37 cfs). Both estimates seem to be too large because average (1983 to 1993) discharge from the entire 113,900 acres of the Huntington Creek basin, measured at Huntington with a water stage recorder, was 54,480 acre feet per year (75 cfs).

Surface Water Quality

Water within the CIA is used for watering livestock and wildlife, mining coal, domestic use, fisheries, and recreation. Downstream, the water is additionally used for irrigation and industrial needs. Land within the CIA is used for wildlife habitat, grazing, recreation, and mining coal. Anticipated post-mining uses are for wildlife habitat, grazing, and recreation.

Scofield Reservoir is classified by the Utah Division of Water Quality as:

M 1C - protected for domestic use with prior treatment,
M 2B - protected for recreational uses except swimming,
M 3A - protected for cold water aquatic life, and
M 4 - protected for agricultural uses.

Electric Lake is classified as:
M 3A and 4.

Streams in both basins are classified as:
M 1C, 3A, and 4.

Furthermore, surface waters located within the outer boundaries of a USDA National Forest, with specific exceptions, are designated by the Utah Division of Water Quality as High Quality Waters - Category 1 and are subject to the state's anti-degradation policy. This anti-degradation policy is that waters shall be maintained at existing high quality and new point source discharges of wastewater, treated or otherwise, are prohibited (Utah Administrative Code, R317-2-3.2 and R317-2-12.1). All of the upper Huntington Creek drainage and most of the headwater drainages of east-flowing tributaries to Mud Creek, including the Skyline mines disturbed area, are within USDA Forest Service boundaries. The White Oak/Belina mines, both loadouts, and the waste rock disposal site are outside Forest Service boundaries.

Total Dissolved Solids (TDS)

Water quality in the CIA is considered good, most being of calcium bicarbonate type. TDS levels normally vary between 100 and 400 mg/l in the headwaters regions. Higher TDS levels correspond to low flows. Calcite and aragonite are at or near saturation in the streams

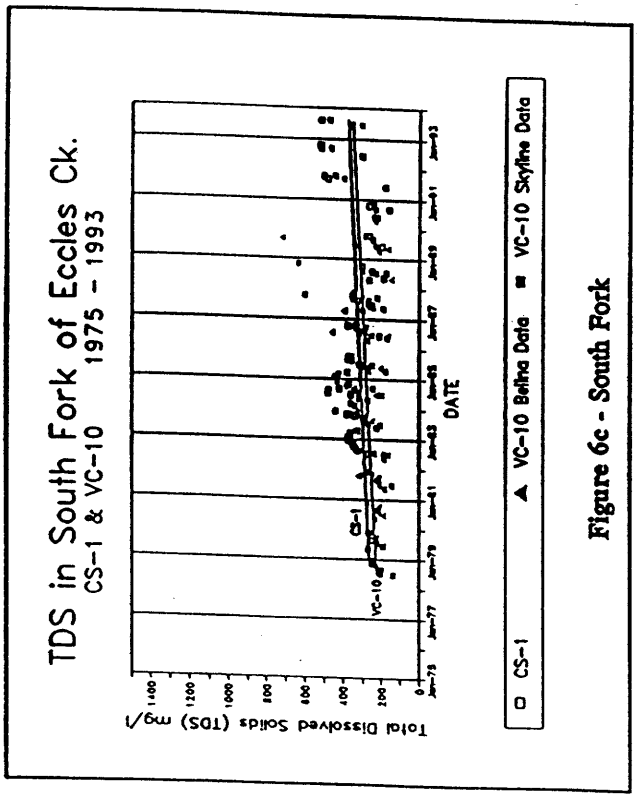
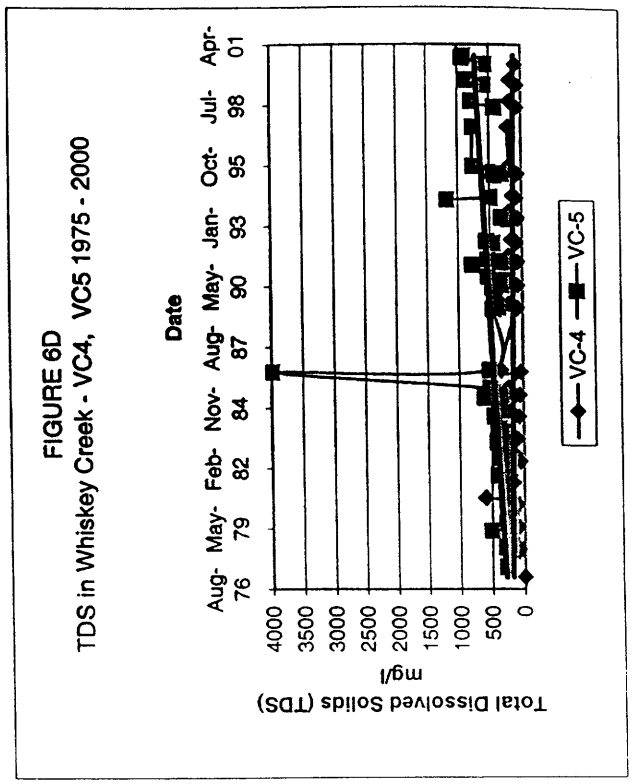


Figure 6c - South Fork



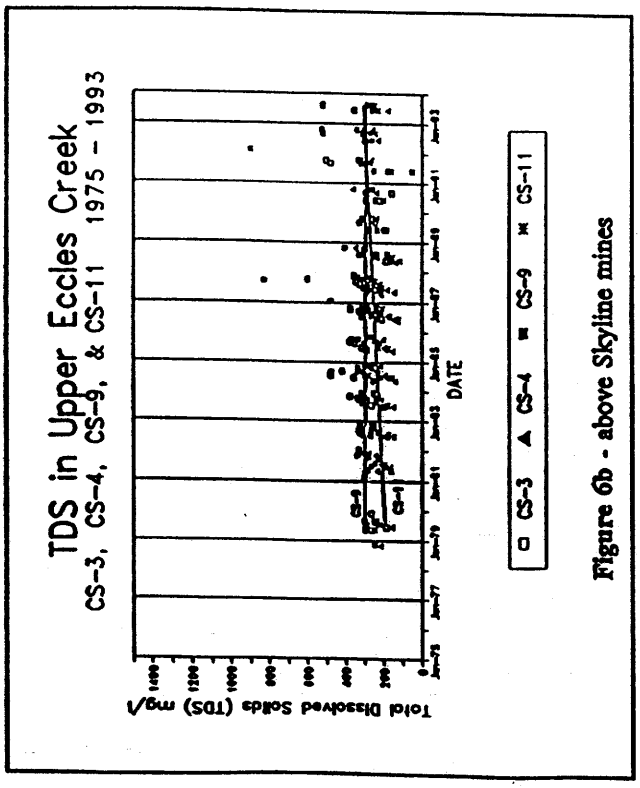


Figure 6b - above Skyline mines

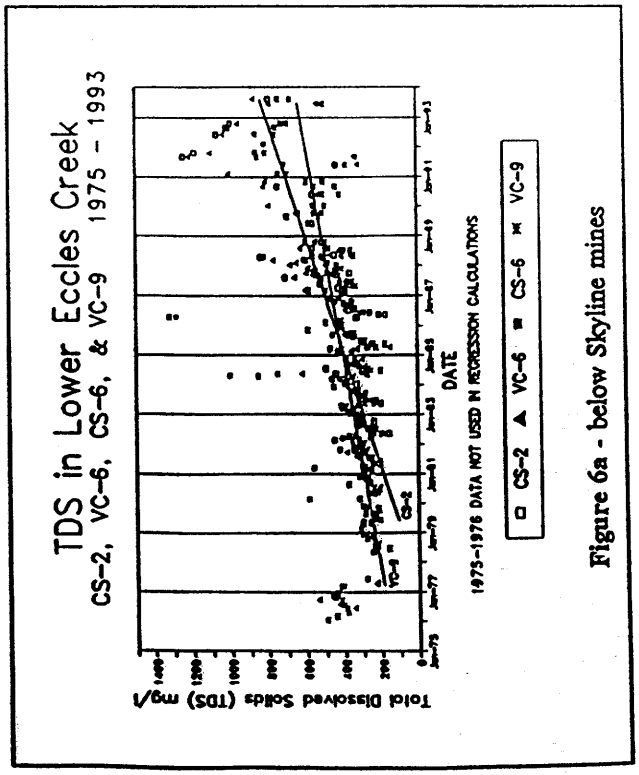


Figure 6a - below Skyline mines

flowing into Scofield Reservoir, and precipitation of calcium carbonate in the reservoir is indicated by the water chemistry (Waddell and others, 1983a).

Skyline's monitoring station CS-6 is at the same location as USGS gaging station 09310600, near the mouth of Eccles Canyon. Skyline and USGS measurements of TDS are summarized in Table 6. Skyline measured higher concentrations of TDS between 1981 and 1992 than were measured by the USGS between 1980 and 1984 (Price and Plantz, 1987, Coastal, 1992 Annual Report). The USGS analyzed samples more frequently than Skyline. TDS concentrations have been increasing from year to year at this location and others along Eccles Creek below the Skyline mines (Figure 6a).

USGS gaging station 09310700, on Mud Creek near the mouth of Winterquarters Canyon and just upstream of the town of Scofield, was operated continuously during water years 1979 through 1984. TDS measurements averaged 315 mg/l with minimum and maximum of 170 and 390 mg/l (Price and Plantz, 1987). Monitoring station VC-1 is approximately 1 mile upstream of 09310700 and just below the White Oak/Belina loadout. At VC-1, average TDS from 1975 to 1993 was 347 mg/l, with a maximum of 730 and a minimum of 156 mg/l.

TABLE 6
Total Dissolved Solids (TDS) in Eccles and Mud Creeks

Gaging Station	Date	Average	Maximum	Minimum
Eccles Creek just above confluence with Mud Creek				
USGS 09310600	1980 - 1984	293 mg/l	490 mg/l	160 mg/l
Skyline CS-6	1981 - 1993	420 mg/l	1282 mg/l	198 mg/l
Mud Creek below White Oak/Belina loadout				
USGS 09310700	1979 - 1984	315 mg/l	390 mg/l	170 mg/l
Belina VC-1	1975 - 1993	347 mg/l	730 mg/l	156 mg/l

There is a shift from calcium toward sulfate and magnesium cations as the water flows toward Scofield Reservoir, probably due to dissolution of evaporites in Mancos Shale tongues exposed in Pleasant Valley (Coastal, 1993, p. 33).

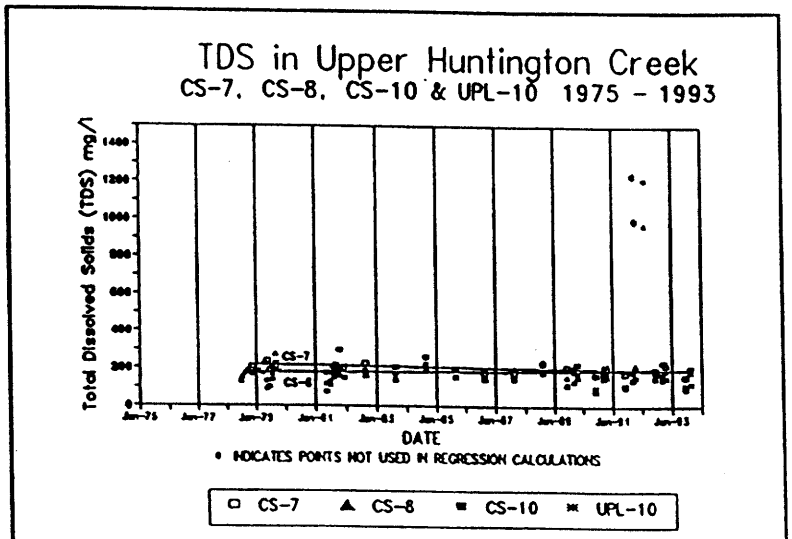


Figure 8 - TDS at Stations Monitoring Inflow to Electric Lake

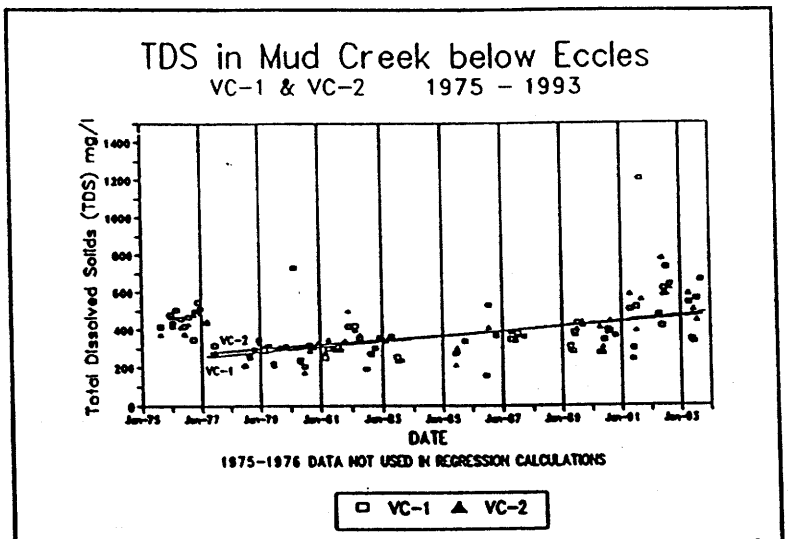


Figure 7 - TDS in Mud Creek below Confluence with Eccles Creek

Figures 6 through 8 show TDS concentrations from 1975 to 1993 from data submitted by Skyline and Valley Camp to UDOGM. Data were collected most consistently from 1981 through 1989. Linear regressions of TDS concentration as a function of time were calculated, time providing a rough representation of ongoing coal mining activities such as production, storage, and hauling of coal and discharge of water from the mines. Representative linear regressions are plotted on the figures. Data from the initial period of road construction during 1975 and 1976 were not used in the regression calculations because they are not representative of ongoing mine operations. Road improvement and additional construction were ongoing from 1980 to 1984 but there was not a noticeable change in TDS concentrations during this period. Other specific data omitted from regression calculations are indicated on the figures.

In water samples from Eccles and Mud Creeks downstream of the Skyline mines (Figures 6a and 7) there has been a notable increase in TDS since monitoring began. Discharge of these streams also increased moderately over this period of time, so the total weight of dissolved solids carried by these streams grew more than the increase in TDS concentration alone would indicate. The source of the increased TDS and discharge is the Skyline mines.

TDS levels in water discharged from Skyline's sediment pond began exceeding the UPDES maximum of 1000 mg/l (753 mg/l annual average) on a regular basis in November 1990. Sulfate concentrations also exceeded the 500 mg/l UPDES limit in most of these high TDS samples. Leaching of sulfate from rock dust in flooded, abandoned areas of the Skyline mines was the source (ERI, 1992). In May 1994 the Utah Division of Water Quality raised the daily limits to 1600 mg/l TDS and 1000 mg/l sulfate on an interim basis through September 1994, with TDS and sulfate levels to meet requirements of the regular UPDES permit at the end of the interim period. TDS concentrations in lower Eccles Creek appear to have peaked in 1991 and to have declined from 1991 to 1993, but 1993 concentrations are still as high as projected by the regressions (Figure 6a).

TDS concentrations in lower Eccles Creek are diluted between CS-2 and VC-9 by inflow from South Fork and Whisky Creek and baseflow from the Starpoint-Blackhawk aquifer. Further dilution occurs when Eccles Creek flows into Mud Creek, but still TDS concentrations have increased at VC-1 and VC-2 (Figure 7).

Linear regressions of data for CS-2 and VC-9 are shown on Figure 6a. Regressions for VC-6 and CS-6 are not shown but fall between those for CS-2 and VC-9. Coefficients of determination (r^2) for the regressions are 64% at CS-2 and 67% at VC-6 just below the Skyline mines and decrease downstream along Eccles and lower Mud Creeks to 20% at VC-1. This decrease in the coefficients of determination indicates that the correlation between TDS concentrations and mining activity (time) decreases as downstream distance from the mines increases.

TDS concentrations have remained nearly constant at CS-3 and CS-9 above the Skyline mines (Figure 6b). Linear regressions of data from stations CS-11 (Figure 6b) and CS-4 above the Skyline mines and from CS-1 and VC-10 (Figure 6c) in the South Fork of Eccles Creek indicate TDS concentrations have increased with time but at a lower rate than in the samples taken downstream of the Skyline mines. These increases may result from airborne dust from the

mines and roads. However, coefficients of determination are 10% or less for the regressions of these six data sets, so at these stations there may be little actual correlation between TDS variations and mining activity.

In Whisky Creek, TDS concentrations have steadily increased at VC-5 below the White Oak/Belina mines from approximately 300 mg/l to close to 700 mg/l (Figure 6d). The rate of increase is similar to that in lowermost Eccles Creek. Since Whisky Creek accounts for approximately 6% of the flow of the Eccles Creek, this is a minor contribution to the overall balance of the stream. The coefficient of determination of the linear regression is 24%. White Oak/Belina reported 4000 mg/l TDS at VC-5 on June 27, 1986, a singular anomaly possibly caused by road salt getting into the stream (Valley Camp of Utah, 1993). At VC-4 (Figure 6d) above the White Oak/Belina mines, TDS concentrations appear to have remained consistent. TDS values at VC-4 have consistently remained below 200mg/l.

Surface-mining methods should have little impact on the TDS reporting into Eccles Creek. Acid and Toxic-forming testing of the geology in the area was conducted and demonstrated a high neutralizing potential of the sediments and low toxicity. Geologic units containing elevated levels of selenium and metals are to be buried with at least 4 feet of cover and not within the floodplain of Whisky Creek.

TDS in Huntington Creek at UPL-10 above Electric Lake varied from 104 to 225 mg/l and averaged 170.3 mg/l from 1981 to 1991 (Coastal, 1993, Volume 4), but sampling was infrequent. Figure 8 shows TDS concentrations for stations upstream of Electric Lake. TDS concentrations appear to have changed little with time.

At UPL-3 just below the outlet from Electric Lake, TDS averaged 156.7 mg/l from 1981 to 1991 and ranged from 130 to 210 mg/l (Coastal, 1993, Volume 4). TDS in Huntington Creek at USGS gaging station 09318000 near the town of Huntington was 155 to 305 mg/l between June 1977 and September 1978 (Simons, Li, and Associates, 1984). TDS in the Price and San Rafael Rivers where they flow into the Green River is 1500 to 4000 mg/l.

Iron and Manganese - Dissolved

During the water year October 1, 1979 to August 31, 1980, the range of eight measurements of dissolved iron at USGS gaging station 09310700 in Mud Creek above Scofield was 0.010 to 0.020 mg/l (Waddell, 1982).

Water analyses done for the White Oak/Belina mines have only sporadically included dissolved iron and and only since 1995, included dissolved manganese. The highest value for dissolved iron reported by the White Oak/Belina mines is 6.65 mg/l at VC-13, an abandoned sampling station in Long Canyon. The highest value measured in Whisky Creek below the White Oak/Belina mines at VC-5 was 1.45 mg/l. The highest dissolved iron found in Eccles Creek by White Oak/Belina was 0.76 mg/l at VC-6 in August 1980. (Valley Camp, 1993, Appendix 722.100a). With the exception of a one-time value of 7.65 mg Iron /l at VC-4 in 1984, VC-4 and VC-5 have had very low dissolved Iron and Manganese values.

Maximum dissolved iron reported by Skyline from surface water between 1981 and 1991 was 0.2 mg/l at CS-10 in the headwaters of Huntington Creek above Electric Lake. Maximum dissolved manganese was 0.17 mg/l at CS-13, the french drain at the loadout. In Eccles Creek the maxima were 0.03 mg/l dissolved iron and 0.16 mg/l dissolved manganese 1993, Volume 4).

Dissolved iron in Huntington Creek at station UPL-10 above Electric Lake varied from 0.03 to 0.06 mg/l and averaged 0.05 mg/l from 1981 to 1991. Dissolved manganese varied from 0.01 to 0.02 mg/l and averaged 0.01 mg/l (Coastal, 1993, Volume 4).

Iron and Manganese - Total

Total iron averaged 3.3 mg/l and total manganese averaged 0.23 mg/l at sites monitored for the White Oak/Belina mines from 1975 through 1990. The highest reported concentration for total iron is 88.5 mg/l, and for total manganese it is 7.15 mg/l. Both samples were from VC-5 on Whisky Creek but were collected at different times (Valley Camp of Utah, 1993). High total iron concentrations have been reported by Skyline at several locations, the highest being 45.10 mg/l at CS-9, above the Skyline mines in the north fork of Eccles Creek. Total manganese concentrations reported by Skyline have ranged from 0.01 to 0.43 mg/l (Coastal, 1993, PHC3-4). Price and Plantz (1987) do not report total iron and total manganese concentrations.

Data from CS-6 near the mouth of Eccles Creek show total iron ranged between 0.03 and 19.2 mg/l from 1981 to 1991 and averaged 1.1 mg/l (Coastal, 1993, Volume 4). At monitoring station VC-1 on Mud Creek just below the White Oak/Belina loadout, average total iron from 1975 to 1990 was 1.23 mg/l. The maximum was 7.66 mg/l and the minimum was 0.06 mg/l (Valley Camp of Utah, 1993).

Total iron in Huntington Creek at station UPL-10 above Electric Lake has varied from 0.08 to 0.72 mg/l and averaged 0.36 mg/l from 1981 to 1991. Total manganese varied from 0.01 to 0.07 mg/l and averaged 0.03 mg/l. At UPL-3, just below Electric Lake, total iron averaged 0.2 mg/l from 1981 to 1991 and ranged from 0 to 1 mg/l. Total manganese was below detection limits (Coastal, 1993, Volume 4).

Other Metals

Trace metals were below U. S. EPA maximum contaminant levels (MCL) in water samples collected from Mud and Eccles Creeks in 1979 through 1980 (Waddell and others, 1983b). Simons, Li, and Associates (1984) found the water at USGS gaging station 09318000, on Huntington Creek near the town of Huntington, met EPA drinking water standards.

Surface water quality data in the Skyline MRP show metal concentrations have generally met Utah Division of Water Quality criteria for class 1C, 2B, 3A, and 4 waters. (Utah Division of Water Quality water quality standards were revised February 16, 1994 and standards are now based on dissolved metal concentrations instead of acid-soluble metal concentrations.) Dissolved selenium in water discharged from the Utah #2 Mine and monitored at VC-3 and VC-3a from 1973 to 1978 frequently exceeded the current Class 1C water quality standard of 0.01

mg/l and exceeded the Class 4 standard of 0.05 mg/l several times (Valley Camp, 1993, Appendix 722.100a).

There are no applicable standards for total metals in water, but what appear to be elevated concentrations of total copper (0.03 mg/l up to 24.5 mg/l) were found between 1981 and 1991 in samples from most of Skyline's sampling stations, including CS-7 and CS-10 in upper Huntington Canyon. High total lead (up to 0.74 mg/l) and total zinc (up to 0.062 mg/l) also were found in several samples (Coastal, 1993, Volume 4). Data from the White Oak/Belina mines contain several analyses with similarly high total lead, copper, and zinc concentrations. The igneous dikes may be the source of these metals.

pH

The range of the average pH of surface water in the Mud Creek and Huntington Creek basins is 7.2 to 8.0 based on measurements at numerous locations. Extremes of 6.0 to 9.2 have been reported. Where both acidity and alkalinity have been determined, alkalinity is typically at least 25 times acidity.

Solids

The estimated annual sediment yield of the Skyline permit area is approximately 0.44 acre-feet per square mile, which would indicate total annual yield to the Price River is 1.25 acre-feet and to the San Rafael River it is 3.07 acre-feet. The majority of this is suspended sediment, with only a small percentage carried as bed load (Coastal, 1993, p. PHC3-2). Using the same estimated yield of 0.44 acre-feet per square mile for the White Oak/Belina permit area, approximate total annual yield to the San Rafael drainage is 0.5 acre-feet and to the Price River drainage is 1.7 acre-feet.

Total suspended solids (TSS) measured at CS-3 and CS-11 in the headwaters of Eccles Creek averages 14 and 59 mg/l. Average TSS is 92mg/l at station CS-6 on Eccles Creek just above the confluence with Mud Creek. The maximum TSS at this location has been 3190 mg/l and the minimum 1.4 mg/l. TSS averages 117 mg/l at VC-9 at the confluence with Mud Creek (Coastal, 1993, Volume 4). The average TSS at VC-5 on Whisky Creek has been 468 mg/l and the minimum 1.0 mg/l.

Annual average TSS at VC-1 on Mud Creek below the White Oak/Belina loadout is 215.5 mg/l. On a quarterly basis, low average TSS (21.8 mg/l) occurs in the fourth calendar quarter and high average TSS (463.6 mg/l) occurs in the third (Valley Camp, 1993, Table 724.200a).

Total suspended solids in Huntington Creek at station UPL-10 above Electric Lake have varied from 1 to 88 mg/l, and averaged 6.4 mg/l from 1981 to 1991 (Coastal, 1993, Volume 4; Vaughn Hansen Associates, 1979). Suspended sediment loads reported by the USGS for undisturbed areas of the Huntington Creek drainage are typically less than 100 mg/l at low flow but during high flows can be between 500 mg/l and 1000 mg/l. In lower Huntington Creek, suspended sediment loads in excess of 10,000 mg/l can be expected from thunderstorms, and

major floods could produce even higher levels. Construction, mining, and traffic on unpaved roads have produced increases in suspended sediment load in streams but these are minor, temporary conditions that have not been quantified (Simons, Li, and Associates, 1984, p. 2.33).

The naturally reproducing population of cutthroat trout in Eccles Creek was virtually eliminated from Eccles Creek between 1975 and 1983 as road and mine construction increased the sediment load in the stream. Up to 18 inches of fine sediment had accumulated over the natural substrate. Habitat improvement initiated in 1981 resulted in significant recovery of the trout population, 93% of pre-disturbance levels by 1986 (Donaldson and Dalton, Utah Division of Wildlife Resources *in* Appendix Volume A-3, Coastal States, 1993).

Landslides occurred at approximately 1500 locations in the Wasatch Plateau during the 1983-1984 water year due to higher than average precipitation. One of these slides occurred in the North Fork of Eccles Canyon where the creek is normally diverted beneath Skyline's topsoil stockpile. Debris blocked the entry to the diversion, water overtopped the stockpile, and mud and other debris were flushed into Eccles Creek. TSS was measured at up to 9800 mg/l in Eccles Creek by UDOGM personnel. During this same period mud was flowing into Whisky Creek from the unpaved road to the White Oak/Belina mines. TSS levels were not documented in Whisky Creek but the deterioration of water quality from suspended solids was visibly evident to UDOGM personnel who investigated.

In 1987 a tunnel was advanced through an igneous dike in the Skyline #3 Mine. A dark mica mineral, phlogopite, was carried from this tunnel to the sedimentation pond by the mine discharge water. The phlogopite did not settle-out in the pond and was discharged into Eccles Creek, where it was entrapped by algae. The phlogopite and algae, along with bacteria and mold, produced a marked discoloration of stream substrate, described as "slime", as far as the White Oak/Belina loadout on Mud Creek. The fine sediment did not seem to be having any direct effect on the fish in July 1987, but macroinvertebrates were substantially fewer in number and less diverse in Eccles Creek below the mine in comparison to Eccles Creek above the mine, to South Fork, and to Mud Creek. Elevated concentrations of nitrite, nitrate, and phosphate were found in water below the mine and coliform bacteria in the sediment pond were elevated (UDWR, 1987).

The suspended phlogopite problem was solved by rerouting underground drainage around the dike and adding a flocculent to the sedimentation pond, but the slime was still in the streambed in late 1988 when sudsing was observed in Eccles Creek. Further water analyses found a surfactant in addition to continuing high levels of nitrogen and phosphorus. The source of the phlogopite was unrelated to that of these nutrients (see discussion below).

A survey of Eccles Creek in August and October 1989 by the Utah Division of Wildlife Resources (UDWR) found coal fines were accumulating behind beaver dams, particularly in the stretch downstream of the Skyline mines to the confluence with South Fork. Entrapment of the coal in the ponds was causing a loss of trout habitat in upper Eccles Creek, but it was also having a positive effect by preventing migration of the fines downstream to lower Eccles Creek, Mud Creek, and Scofield Reservoir. Fish were almost absent from Eccles Creek at the South Fork confluence, but downstream numbers of fish increased and young fish were evidence of

successful spawning. In addition to coal fines, gravel chips from the highway had completely covered the substrate in places (Report dated June 26, 1990 by UDWR *in* Appendix Volume A-3, Coastal States, 1993).

Studies of macroinvertebrates and sediment in Eccles Creek done for Skyline by Ecosystems Research Institute (ERI, 1992) found mean number of individuals, total number of taxa, and aquatic plant biomass decreased immediately below the mine and then increased downstream. Water below the mine was not acutely toxic, but the effects of chronic toxicity and sediment transport were not determined. The streambed immediately below the Skyline mines was extremely embedded and 0.5 mm to 2 mm diameter particles made up approximately 15% to 25% of the sediment, compared to 5% to 10% in other reaches of the stream.

Winget (1980) noted that sheep and cattle grazing, recreation, unpaved roads, mines, and fires had all contributed to previous degradation and erosion of these watersheds. The results were increased sedimentation and reduction or loss of fish and invertebrate populations. Improved range management along Huntington Creek in the late 1970's allowed some recovery of riparian habitat and bank stability.

Nitrogen and Phosphorus

Wadell (1983a) concluded that Scofield Reservoir may become highly eutrophic unless measures are taken to limit the inflow of nutrients. Winget (1980) attributed nutrient input to Scofield Reservoir to recreation, cattle and sheep grazing, and domestic sources. Wadell's study during the 1979 and 1980 water years found that Mud Creek was providing 16% of the inflow to the reservoir but 22% of the total nitrogen and 24% of the total phosphorus. Wadell attributed elevated nutrient levels in 1979 and 1980 to the clearing of 27 acres of forested land for fire prevention around the Skyline mine portals and roads in 1979.

There is no water quality standard for nitrite, but concentrations in excess of 0.06 mg/l produce mortality in cutthroat trout (UDWR, 1988). Nitrate should not exceed 10 mg/l in Class 1C water, and levels above 4 mg/l are considered an indicator of pollution, usually from sewage. Levels of phosphate in excess of 0.04 mg/l are not toxic to trout but are excessive and promote eutrophication (UDWR, 1988). By state standards for Class 1C, 2A, 3A, and 3B waters, phosphate in excess of 0.05 mg/l is a pollution indicator. The following discussion also refers to MBAS, a detergent or surfactant. The recommended limit for MBAS concentration is 0.2 mg/l (Steve McNeil, Utah Dept. of Health, personal communication *in* UDOGM, 1988).

At station UPL-10 on Huntington Creek above Electric Lake, total nitrogen averaged 0.29 mg/l from 1981 to 1991, with highs of 0.90 mg/l ammonia and 0.33 mg/l nitrate and lows of 0.01 mg/l for both. Total phosphate averaged 0.42 mg/l with a high of 6 and a low of 0.02 mg/l. At UPL-3 just below Electric Lake, total nitrogen averaged 0.6 mg/l from 1981 to 1991, with highs of 1 mg/l as ammonia and 2 mg/l as nitrate and lows of 0 mg/l for both. Total phosphate averaged 0.2 mg/l with a high of 2 and a low of 0 mg/l (Coastal, 1993).

Data collected by Winget (1980) from 1976 to 1978 indicated that phosphate in Electric Lake was below the minimum concentration needed by aquatic life, and nitrate was just above

the limit. These nutrient concentrations reflected the clean nature of the streams feeding the reservoir. Eccles Creek had nitrate concentration adequate for algal growth at most times, but low phosphate.

Discharge weighted average concentrations for nitrogen and phosphorus at Station S-29 in Eccles Canyon (same as USGS gaging station 09310600 and Skyline's station CS-6) during water years 1979-1980 were 11 and 2.2 mg/l. Concentrations of suspended and dissolved nitrogen combined reached 21 mg/l in May, 1980, and phosphorus reached 4.3 mg/l. These nutrient levels apparently resulted from the clearing of 27 acres of forested land for fire prevention around the Skyline mine portals and roads in 1979. In Mud Creek downstream of the confluence with Eccles Creek, at S-36 (near Winterquarters Canyon and USGS gaging station 09310700), discharge weighted average concentrations were 1.3 mg/l nitrogen and 0.1 mg/l phosphorus. The downstream decrease is attributed to the nutrients from Eccles Creek being mostly in suspended form that settles out in the slower flow of Mud Creek. About 50% of the nitrogen and 25% of the phosphorus in Mud Creek in 1980 came from Eccles Creek, but only 20% of the flow. Concentrations of nutrients in Mud Creek peaked at about the same time as those in Eccles Creek. (Waddell and others, 1983a; Waddell and others, 1983b, p. 36).

At Skyline's monitoring station CS-6 on Eccles Creek, between 1981 and 1993, total nitrogen averaged 0.6 mg/l and phosphate averaged 0.2 mg/l. Highs and lows for nitrogen were 2.17 and 0.01 mg/l nitrate and 3.5 and 0.01 mg/l ammonia; for phosphate they were 0.76 and 0.01 mg/l (Coastal, 1993). Data from 1976 to 1979 from several stations along Eccles Creek indicate a high for nitrate of 2.70 mg/l and for phosphate of 0.22 mg/l (Vaughn Hansen Associates, 1979). High, low, and mean nitrate concentrations at VC-1 were 0.38 mg/l, 0.01 mg/l, and 0.12 mg/l between 1975 and 1994, but analyses for nitrates have been infrequent since 1988. Maximum phosphate was 4.55 mg/l in June 1984 and minimum was 0.01 mg/l in September 1987. No phosphate analyses have been done at VC-1 since 1991.

In 1987 a dark mica mineral, phlogopite, was being discharged from Skyline Mine #3 into Eccles Creek by way of the sediment pond (discussed above). The phlogopite was entrapped in algae, which combined with bacteria and fungi to produce a slime on the stream substrate as far as the White Oak/Belina loadout on Mud Creek. The fine sediment did not seem to be having any direct effect on the fish in July 1987, but macroinvertebrates were substantially fewer in number and less diverse in Eccles Creek below the mine in comparison to Eccles Creek above the mine, South Fork, and Mud Creek. Analyses of water samples taken by UDWR (Table 7) found 0.46 mg/l total nitrogen in the stream below the Skyline mines, 0.11 mg/l nitrite (24% of total nitrogen) and 0.34 mg/l nitrate (76% of total nitrogen). Total nitrogen above the mines was 0.29 mg/l, with no nitrite. Phosphate levels in the Skyline sediment pond and Eccles Creek were 0.045 mg/l but no phosphate was detected above the mine. UDWR subsequently found elevated total and fecal coliform bacteria in the sediment pond. Because of the bacteria and nitrites, UDWR suspected the sewage tank was backing up into manhole connections and leaking into the sediment pond. UDWR recommended chlorination of the sediment pond and procedures to avoid recurrence of the suspected sewage backup (UDWR, 1987).

TABLE 7

	Nitrite	Nitrate	Ammonia	Organic Nitrogen	Phosphorus Total	MBAS Detergent
Sampled by UDWR July 1987 (UDWR, 1987)						
Above Skyline Mines	not detected	0.29	**	**	not detected	**
Below Skyline Mines	0.11	0.34	**	**	0.045	**

** Analysis not reported, probably not done

Phlogopite was eliminated from the pond discharge by rerouting flow in the mine and using a flocculent, and UDWR recommendations for reducing pollution from sewage were implemented, but slime persisted in the streambed through the summer of 1988. Random checks by UDWR indicated water quality was acceptable. Fish were abundant and macroinvertebrate populations appeared normal in lower Eccles Creek. In late September foaming was observed in Eccles and Mud Creeks along the same reaches where the slime was found. The slime appeared to be growing and extending deeper into the substrate. UDOGM personnel took samples of Eccles Creek above and below the mines in September 1988, and in October at several locations within the 72 inch bypass, including the discharge of the sedimentation pond (Table 8). Analysis of these samples revealed high nitrite levels persisted. In September, nitrite concentration was 0.64 mg/l in the outfall of the 72 inch culvert, which carries drainage from undisturbed drainages beneath the disturbed area and also receives the discharge from the sedimentation pond. Ammonia and organic nitrogen concentrations were also elevated in comparison to undisturbed drainages (UDOGM, 1988). Samples taken from the pond outfall by UDWR in October 1988 had 14 mg/l nitrate and 0.09 mg/l nitrite (UDWR, 1988). Results of analyses from several different sources during September and October are summarized in Table 8.

Total phosphate was 0.50 mg/l in one sample taken by Skyline from the discharge from the shop (Utah Fuel Company, 1988). Another sample from the shop sump reportedly approached 13 mg/l (Keith Zobell, personal communication, *in* UDOGM, 1988). Samples taken from the sedimentation pond by UDWR personnel in July and October, 1988 had phosphate levels of 0.045 mg/l and 0.06 mg/l (UDWR, 1988). Water analyses also detected a detergent, MBAS, in the sediment pond and the outfall (Table 8).

In addition to the laboratory analyses, Skyline used a field kit to check nitrate levels at various times and locations. On October 5, 1988 nitrate levels were 8 to 9 ppm in Eccles Creek below the mine and 13 ppm in the discharge from the #3 Mine. Other flows into the sediment pond showed no nitrate, indicating the sewage holding tanks were not the source of the nitrate. On October 6, water coming off the longwall section of #3 Mine had 5 ppm nitrate, return water had 3 ppm, and overflow from the emulsion pump had 2 ppm. Water from mined out areas had no nitrate (Utah Fuel Company, 1988).

Trout and invertebrates had not been checked in upper Eccles Creek in mid-September 1988 when lower Eccles Creek was monitored because lower Eccles Creek was supporting healthy populations even with the slime present. However, an intensive sampling of fish and

macroinvertebrate populations in early October 1988 revealed that the trout population and biomass in upper Eccles Creek had declined over 90%. Macroinvertebrates were essentially gone in upper Eccles Creek downstream from the sediment pond outfall, but taxa and numbers increased downstream, as did numbers and biomass of fish. High concentrations of nutrients were producing both toxic and eutrophic conditions. Nitrite in the water was a contributing and probably primary cause of mortality of macroinvertebrates in upper Eccles Creek and had forced trout to migrate downstream to where dilution produced a tolerable habitat. Trout spawning had not been successful in 1987 and 1988 in any section of the stream: either the slime precluded successful spawning, the nitrites were fatal to the eggs and fry, or both (UDWR, 1988). Refer to the section *Fish and Invertebrates* for more information.

TABLE 8

	Nitrite	Nitrate	Ammonia	Organic Nitrogen	Phosphorus Total	MBAS Detergent
Sampled by UDWR July 1988 (UDWR, 1988)						
Sed Pond Effluent	**	**	**	**	0.045	**
Sampled by UDOGM 28 September, 1988						
North Fork	<0.05	1.20	<0.05	<1.00	<0.05	<0.03
Middle Fork	<0.05	0.59	<0.05	<1.00	<0.05	<0.03
South Fork	<0.05	0.21	<0.05	<1.00	<0.05	<0.03
72" Bypass Outfall	0.64	0.38	0.19	1.30	<0.05	0.28
Sampled by UDOGM 03 October, 1988						
Sed Pond at 3'	*	0.26	0.14	*	<0.05	0.75
Sed Pond at 6'	*	0.37	0.14	*	<0.05	0.50
Sed Pond at 9'	*	0.32	0.14	*	<0.05	0.83
Sed Pond at 10.5'	*	0.3	0.16	*	<0.05	*
72" Bypass Outfall	*	0.33	0.25	*	<0.05	*
Pond Spillway in Bypass	*	0.41	0.18	*	<0.05	0.80
Middle and South Fork Confluence in Bypass	*	0.25	*	*	<0.05	0.1
28" Pipe in Bypass	*	*	*	*	<0.05	0.09
Sampled by UDWR October 1988 (UDWR, 1988)						
Sed Pond Effluent	0.09	14.0	**	**	0.06	**
Sampled by Skyline October 1988 (Utah Fuel Company, 1988)						
Eccles Creek	**	**	**	**	0.04	***0.90
Mine #3 Discharge	0.08	2.28	**	**	0.04	***0.87
Sed Pond Discharge	0.04	3.39	**	**	0.06 and 0.04	***1.33
Shop Discharge	0.03	3.18	**	**	0.50 and 0.36	***1.33

* Analysis not done
** Analysis not reported, probably not done
*** Unspecified surfactant, not identified as MBAS

Elevated nitrites were traced to an emulsion oil used in the longwall system in the #3 mine. In a 1:20 dilution that was used, nitrite concentration was 182 mg/l and nitrate was 872 mg/l. As much as 4000 gallons of this emulsion was released each time the longwall unit was moved, which had occurred six times from 1986 to 1988. There were also occasional spills and leaks. The oil was captured and removed from the water by skimming and flocculation before it left the mine, but the nitrogen compounds went into solution in the water and passed through the sediment pond into Eccles Creek. Skyline replaced the emulsion oil with one that contained no nitrites or nitrates. Field kit test results submitted to UDOGM by Skyline in late 1988 indicated nitrate and nitrite levels were dropping in discharges from Mine #3 and the sediment pond (Utah Fuel Company, 1988). Samples taken by UDOGM in December 1988 (Table 9) detected no nitrite or nitrate in discharges from the #3 Mine and the pond, but elevated levels were found in the discharge from the #1 Mine. Field kit results from January to May 1989 showed consistent nitrite and nitrate levels, 0.03 mg/l and 1.07 mg/l respectively, in both the sediment pond and the Mine #3 discharge. In 1989 the longwall unit was moved from Mine #3 to Mine #1. Nitrate and nitrite were within acceptable limits by August 1989 (Table 9).

Sudsing and elevated phosphate turned out to be unrelated to the nitrogen compounds but rather were caused by detergents used for cleaning equipment in the shop and in mop water used to clean the floors. The mop water was being disposed of into floor drains, which empty into the 72 inch bypass culvert by way of the sedimentation pond. The problem has been solved by replacing detergents used in both applications with low sudsing, non-phosphate types and revising procedures so that mop water is now discarded into the sanitary sewer (Utah Fuel Company, 1988).

TABLE 9

	Nitrite				Nitrate			
Sampled by UDOGM	12/14/88	3/29/89	4/18/89	8/31/89	12/14/88	3/29/89	4/18/89	8/31/89
Mine #1 Discharge	0.83	?	*	0.05	5.2	0.034	*	0.075
Mine #3 Discharge	<0.05	0.013	0.14	*	<0.05	0.039	2.0	*
Pond Discharge	<0.05	0.032	0.24	<0.05	<0.05	0.033	1.76	1.48
72" Bypass Outfall	*	*	<0.05	<0.05	*	*	<0.05	1.11

* Analysis not done

Oil and Grease

There is no water quality standard for oil and grease, but the UPDES permit limit for both the White Oak/Belina and Skyline mines is 10 mg/l. A 10 mg/l oil and grease limit does not protect fish and benthic organisms from soluble oils such as those used in longwall hydraulic systems, and UDWR has recommended soluble oils be limited to 1 mg/l (Darrell H. Nish, Acting Director UDWR, letter dated April 17, 1989 to Dianne R. Nielsen, Director UDOGM).

Oil and grease in water discharged from Skyline Mine #1 (CS-14) averaged 1.4 mg/l from 1989 to 1991, and 4.1 mg/l was the maximum. At Mine #3 (CS-12), data from 1983 to

1991 show 1.3 mg/l was the average. The maximum of 12.5 mg/l was recorded in 1987 (Coastal, 1993. Volume 4). Discharge from the sediment pond has occasionally exceeded the 10 mg/l limit in the UPDES permit.

The principal source of oil in water discharged from Mine #3 appears to be the longwall unit that was installed in 1986. A water-oil emulsion (5% oil) is used in the longwall hydraulic system to meet MSHA fire protection requirements. As much as 4000 gallons of this emulsion can be released each time the longwall unit is moved. The unit was moved six times between 1986 and October 1988. There are also occasional spills and leaks. Oil is captured and removed from the mine water discharge system by skimming and flocculation before it leaves the mine. Since 1988 an extensive no-spill program has been part of the longwall operations, and if a spill does occur the water and oil emulsion is to be pumped into abandoned sections of the mine rather than being discharged to the surface (Utah Fuel Company, 1988). If there is flocculated oil in the sludge in the sediment pond, it is a potential source of recontamination that will eventually require proper removal and disposal.

Prior to 1985, oil and grease in water discharged from the White Oak/Belina mines was generally less than 0.5 mg/l, with a maximum of 2.2 mg/l. Between September 1985 and June 1989, measurements exceeding 0.5 mg/l increased, with the February 21, 1986 sample exceeding 10 mg/l. Longwall mining equipment is not used in the White Oak/Belina mines. Reasons for the increase in oil and grease in the mine discharge have not been identified.

Temperature

Water temperatures in the streams fluctuate greatly because low flows and turbulence act to quickly equilibrate water temperatures with air temperatures. Winget (1980) found daily fluctuations of 12 to 15 degrees C during warmer months, but fairly constant temperatures of 0 to 2 degrees C during November to March. UDOGM found that the temperature of Eccles Creek increased significantly, 43 degrees to 54 degrees, as it passed through the 72 inch bypass culvert and received the sediment pond discharge (UDOGM, 1988). The maximum allowable change for Class 3A waters is 2 degrees C (3.6 degrees F).

Fish and Invertebrates

Upper Huntington and Eccles Creeks have naturally reproducing populations of cutthroat trout. Rainbow and brown trout were reported in upper Huntington Creek prior to 1979, but UDWR's work to eliminate these trout species from this fishery has apparently been successful. Rainbow trout have been planted in Scofield Reservoir, and cutthroat are recruited from inflowing streams. Speckled dace, mountain suckers, and mottled sculpin are also found in area streams. Macroinvertebrate communities in both drainages have considerable species diversity (Winget, 1980).

Eccles Creek UDWR ranks Eccles Creek as a valuable trout stream, mainly as a spawning stream for wild cutthroat trout that are eventually harvested in Scofield Reservoir. Data collected in 1971 by the UDWR, prior to coal development, identified Eccles Creek as a somewhat pristine fishery. The stream sustained an estimated resident population of 1272 wild

cutthroat trout along 2.5 miles of habitable stream. Adult trout comprised only 4% of this population (Donaldson and Dalton).

Benthic invertebrate studies were done by the USGS at three sites on Mud Creek and two in Eccles Canyon in July and September 1979, and July and October 1980. There were consistent downstream and seasonal trends. Diversity decreased downstream in Eccles Canyon, probably because Skyline mine was relocating the stream at the time (Waddell and others, 1983b).

Winget (1980) collected data on invertebrates and sediments in Eccles and Huntington Creeks prior to construction of the Skyline Mines. Skyline studied benthic communities and sediment composition of gravel beds in Eccles Creek from 1979 to 1985. Fishery habitat studies were also done (Coastal, 1993, p. 2-70).

In conjunction with the Skyline study, UDWR conducted fish surveys the first week of August from 1979 to 1986 (Donaldson and Dalton). UDWR found that the fishery began to decline after 1975 in the 1.75 mile stretch of Eccles Creek below the Belina Mines turnoff. Construction of roads and mines caused high sedimentation in the stream, up to 18 inches of fine sediment above the natural substrate. In 1979 the fish population along the entire 2.5 miles of habitable stream was down to 40% of 1971 pre-mining levels, and 18% of the fish were adults compared to 4% in 1971. Construction for the Skyline mines began in 1980. Mitigation started in 1981 but deterioration of the stream continued. By 1983 most of the road through Eccles Canyon was asphalted and disturbed areas were revegetating, but only 27 fish were found in Eccles Creek, a 98% reduction compared to 1971. There were no young-of-year or 1-year juveniles. A reduction of sedimentation was evident by 1985, and by 1986 the cutthroat population had recovered to 93% of the 1971 levels and 1-year juveniles were present (Donaldson and Dalton).

The UDWR conducted fish surveys and macroinvertebrate inventories in 1988 as part of the investigation of the problems with foam and slime in Eccles Creek (discussed above). Fish population had been estimated in 1986 to be 600 fish /mile. In mid September 1988, fish in lower Eccles Creek were abundant and macroinvertebrate populations appeared normal. However, when Upper Eccles Creek was assessed in October 1988, only 20 fish/mile were found. It was also found that one and two-year old fish were absent from the population. Macroinvertebrate diversity dropped from 6 - 7 families /square foot above the Skyline mines to 1 family present below the mines. Diversity in Mud Creek was 8. Toxicity from nitrites and eutrophication from nitrates and phosphates were the causes of these population losses (UDWR, 1988; UDOGM, 1988).

Studies of macroinvertebrates and sediment in Eccles Creek were done for Skyline by R. W. Baumann (1985) and Ecosystems Research Institute (ERI, 1992). Benthic invertebrates in the stream below the mines indicated stress in the 1984 - 1985 surveys but showed recovery from the conditions that existed in 1981. In 1991, mean number of individuals, total number of taxa, and aquatic plant biomass decreased immediately below the mine and then increased downstream. The zone of impact appeared to extend to the confluence of Eccles Creek with Mud Creek, but at the confluence parameters were similar to those in Mud Creek. It was

determined the water below the mine was not acutely toxic, but the effects of chronic toxicity and sediment transport were not determined. The streambed immediately below the mine was extremely embedded and the percentage of sediment 0.5 to 2 mm in size was significantly larger than elsewhere in the streams. Electrical conductivity of the water was highest below the mine and decreased downstream. Sulfate leached from rock dust in flooded, abandoned areas of the mine has been identified as the reason TDS levels in mine water discharges were exceeding UPDES standards.

Upper Huntington Creek After the spillway gates of Electric Lake were closed in 1974 and the reservoir began to fill, UDWR measured increasing numbers of cutthroat trout in Huntington Creek above the lake. Numbers increased from 104 fish per 0.1 mile in 1974 to 263 fish per 0.1 mile in 1977. Also, smaller fish made up increasing percentages of this population, indicating increased reproduction, resident fish, and increasing recruitment stock for the reservoir (Winget, 1980).

Benthic invertebrate studies were done by the USGS at seven sites in Huntington Creek from 1977 through 1979. Diversity indices had a large variability that was attributed to variations, possibly natural, in water quality and stream environment. Simons, Li, and Associates (1984) concluded several more years data would be required to establish baseline conditions.

Winter Quarters Creek Winter Quarters Creek was surveyed by UDWR in 1968 and 1971. In 1968, 70 cutthroat trout were found along a 0.1 mile reach, with a maximum size of 14 inches. Winget (1980) does not report the numbers for 1971, but maximum size was 9 inches and the presence of young fish indicated successful spawning. Banks were stable along 70% of the stream. Spawning gravels composed 38-42% of the substrate but low flows limited fish production. Caddisflies, stoneflies, and mayflies were common and water quality was high (Winget, 1980).

Ground Water

Ground Water Quality

With few exceptions ground water is a calcium bicarbonate type. Spring water is generally of better quality than well or mine discharge water. Quality is usually highest in the second quarter of the year when flows are greatest. Samples are rarely taken during the first quarter because of snow cover. Water quality data are available for only one year, four samples from October 1993 to October 1994, from the monitoring well at Skyline's waste rock disposal site. Locations of seeps and springs sampled for the Skyline and White Oak/Belina mines are shown on Figure 5.

The USGS analyzed water from 140 springs in the Huntington and Cottonwood Creek basins between July 1977 and September 1980. None of the analyses found concentrations over U. S. EPA drinking water standards (Engineering-Science, 1984, p. 2.39). Total dissolved solids content of the ground water from springs and seeps ranges from less than 125 ppm in the Skyline

permit area to 4000 ppm at the confluence of the Price and San Rafael Rivers with the Green River.

Ground Water Quality - Castlegate Sandstone

Spring S10-1, the only monitored spring that discharges from the Castlegate or near the Castlegate-Blackhawk contact, has had an average TDS concentration of 88 mg/l and a maximum of only 155 mg/l. This low TDS is attributed to the lack of shale in the Castlegate. The water is low in nutrients and metals. The pH averages 7.1 and alkalinity is typically 25 times acidity. Total and dissolved iron average 0.20 and 0.04 mg/l and total and dissolved manganese average 0.011 and 0.01 mg/l (Coastal, 1993, p. PHC 2-7). Springs issuing from the Castlegate Sandstone typically have less than 180 mg/l TDS (Engineering-Science, 1984, p. 27).

Ground Water Quality - Blackhawk and Star Point Formations

Total Dissolved Solids (TDS)

Springs and seeps monitored for the White Oak/Belina mines typically have TDS values in the range of 200 to 300 mg/l. Quarterly average values go from a low of 110.1 mg/l in the second quarter at S36-19 to a high of 374 mg/l during the fourth quarter at S24-12. The highest TDS reported is 655.0 mg/l at S36-19 (Valley Camp, 1993, p. 700-17 and Table 724.100b)

Skyline's data show that spring waters from perched aquifers in the Blackhawk Formation typically have TDS levels of 240 mg/l (Coastal, 1993, p. PHC2-6). The highest TDS is 646 mg/l at S13-2 in the north fork of Eccles Creek near the mine. Average TDS at this spring is 356 mg/l. High TDS is also found at S17-2, next to Eccles Creek just above the Skyline loadout and at S24-12 at the head of South Fork (Coastal, 1993, Volume 4).

Water discharged from the White Oak/Belina mines and well water from the Blackhawk-Starpoint aquifer had TDS levels of 180 to 480 mg/l in 1979 (Engineering-Science, 1984, Table 1). Average TDS in water discharged from the White Oak/Belina mines from 1981 to 2000 was 674 mg/l, but TDS values as high as 1340 mg/l were measured (Valley Camp, 1993, p. 700-22).

Water from the Skyline mines contained an average of 260 mg/l TDS in 1984, but this had increased to an average of 1100 mg/l in 1991. Average sulphate levels went from 159 mg/l in 1984 to 620 mg/l in 1991 (Coastal, 1993, p. PHC2-7). TDS in the waste rock disposal site monitoring well averaged 563 mg/l in 1992-1993 (1993 Annual Report).

Iron and Manganese

Waddell (1982) measured dissolved iron concentrations of 0.720 mg/l at the Clear Creek Mine. At the spring near the mouth of Eccles Canyon, which is the same as Skyline's S17-2, Waddell measured 0.860 mg/l. Skyline's five measurements of dissolved iron at S17-2 between 1981 and 1993 averaged 0.73 mg/l. Both of these ground water sources issue from faults or fractures in the Star Point Sandstone.

For spring waters from perched aquifers in the Blackhawk Formation, total and dissolved iron average 0.39 and 0.10 mg/l, respectively, and total and dissolved manganese both average 0.02 mg/l. Total iron and manganese concentrations correlate directly with flow rates (Coastal, 1993, p. PHC 2-7).

In water discharged from the Skyline mines, total and dissolved iron averaged 1.4 and 0.02 mg/l, respectively. Total and dissolved manganese levels averaged 0.07 and 0.04 mg/l at the No. 1 mine and 0.3 and 0.07 mg/l at the No. 3 mine (Coastal, 1993, p. PHC2-7). Water from wells is generally similar to mine discharge water (Engineering-Science, 1984, p. 27). At the waste rock disposal site, water from the monitoring well averaged 0.540 mg/l total iron and 0.048 mg/l total manganese in the four samples taken in 1992-1993 (1993 Annual Report).

Water discharged from the White Oak/Belina mines between 1981 and 1989 contained an average total iron concentration of 0.56 mg/l. Total iron exceeded 1.0 mg/l 25 times from 1981 to 1985, with a maximum of 4.60 mg/l, but from 1985 to 1989 levels exceeded 1.0 mg/l only 3 times and the maximum for that period was 2.2 mg/l. From 1989 through 2000, Total iron exceeded 1.0 mg/l/day 6 times with the last exceedence in April 1998 being the highest reported value of 7.27 mg/l. From 1985 through 2000 the 30-day maximum of 70 mg/l Total Iron was exceeded 6 times, with the maximum being 155 mg/l in April 1985 and the last being 108 mg/l in May 1997.

Other Metals

Dissolved copper has exceeded the 1 hour average criterion for Class 3A waters in the four samples from the monitoring well at Skyline's waste rock disposal site (1993 Annual Report). There are no applicable standards for total metals in water, but what appear to be elevated concentrations of total copper, up to 0.42 mg/l, were found between 1981 and 1991 in the springs sampled by Skyline. Total lead up to 0.05 mg/l and total zinc up to 0.185 mg/l were also found (Coastal, 1993, Volume 4). Data from the White Oak/Belina mines show concentrations of total lead up to 0.17 mg/l and of total zinc up to 0.135 mg/l, however, total copper values are all 0.02 mg/l or lower. Analyses were not done for dissolved copper, lead, and zinc (Valley Camp, 1993, Appendix 722.100a). The igneous dikes in the area may be the source of these metals.

pH

The range of average pH of ground water from monitored seeps and springs in the Mud Creek and Huntington Creek basins is 7.1 to 8.0 based on measurements at numerous locations. Extremes of 6.0 to 9.5 have been reported. Where both acidity and alkalinity have been determined, alkalinity is typically at least 25 times acidity (Coastal, 1993, p. PHC2-6).

In water discharged from the Skyline mines, alkalinity is typically 40 times acidity and average pH is 7.4 (Coastal, 1993, p. PHC2-7). Water discharged from the White Oak/Belina mines has an average pH of 7.7, with measured high and low of 9.7 and 6.7 (Valley Camp, 1993). The average pH measured at the waste rock disposal site was 6.6 in 1992-1993, ranging from 6.51 to 6.84 (1993 Annual Report).

Ground Water Quantity

Flow of springs and seeps issuing from the perched aquifers varies seasonally, indicating local systems. Recharge for most of these springs and seeps probably originates in the small surface depressions or basins in the immediate vicinity. Higher flows occur during spring snowmelt, and flows in the autumn are often lower by an order of magnitude. Some seeps dry completely during the summer. Sustained flows from springs are low; only 4 springs on the Skyline permit area were flowing at 10 gpm or more during the 1978 autumn inventory, and most flowed at 2 gpm or less. Flows are also sensitive to the amount of precipitation during the winter. Springs on the Skyline property were surveyed by OSM contract staff in 1983 following a very wet winter. One unidentified spring was flowing at 300 gallons per minute in late June but by early August it was flowing only 4 gallons per minute. A nearby spring flowed 100 gallons per minute in June and could not be located, apparently because it was dry, in August (Engineering Science, 1984, p. 34).

According to the Seep and Spring survey conducted in the White Oak/Belina area in the summer of 1990, a total of three seeps/springs are affected by the 2001 Surface mining in the area. Seeps/springs S25-13, S25-14, and 30-1 are all located up-gradient of the surface mining. Seep/Spring S25-13 is the only site that provided consistent enough flow to be continually monitored. Recorded quarterly flow measurements from site S25-13 range from 0 to 60 gpm, and average <5 gpm. It is anticipated that any flow from the three seeps or springs will still report to Whisky Creek and not be significantly impacted by the surface mining.

The Blackhawk-Starpoint aquifer provides baseflow to Mud Creek and the lower reaches of Eccles Creek, but the volume of ground water discharged from the regional Blackhawk-Starpoint aquifer has not been quantified. Vaughn Hansen Associates (1979) estimated that 64% of the flow of Eccles Creek was from ground water discharge, with the major portion of this flow entering the stream from the Starpoint Sandstone. The Starpoint can be presumed to provide baseflow to lower reaches of other Mud Creek tributaries where it is exposed. Low flows of Mud Creek are sustained principally by ground water flowing up from the regional aquifer (Waddell, 1983b). Discharge through fractures such as the O'Conner fault and the Pleasant Valley fault zone has been documented. Some baseflow also probably occurs directly through unfractured but permeable zones in the Star Point Sandstone. The Starpoint Sandstone does not crop out in the headwater drainages of Mud and Huntington Creeks and the regional Blackhawk-Starpoint aquifer does not discharge from springs or otherwise contribute to surface flow in these areas.

V. IDENTIFICATION OF HYDROLOGIC RESOURCES

(IDENTIFY HYDROLOGIC RESOURCES THAT ARE LIKELY TO BE AFFECTED AND DETERMINE WHICH PARAMETERS ARE OF IMPORTANCE FOR PREDICTING FUTURE IMPACTS TO THOSE HYDROLOGIC SYSTEMS.)

The Class 3A streams in the CHIA are protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organisms in their food chain. The

drainages of upper Huntington Creek and Mud Creek have both been identified as habitat for naturally reproducing populations of cutthroat trout. Scofield Reservoir is stocked with rainbow trout but contains cutthroat trout that have reproduced in tributary streams, including Mud, Eccles, Winter Quarters, and possibly Boardinghouse Creeks.

Burnout Creek has been identified as a spawning habitat for the native Yellowstone cutthroat trout population in Electric Lake. Cutthroat trout have been observed in large numbers in James Creek, just south of Burnout Creek, during spawning season. Boulger Creek has been studied as a stream that could be developed into for a spawning, and Skyline has provided funds to the USDA Forest Service for construction of a fish ladder to bypass Boulger Reservoir. Utah Division of Wildlife Resources is concerned about potential loss or alteration of these and other important fish habitats in and around Electric Lake.

There are 194 surface water rights, 106 for stockwatering, 25 for irrigation, 55 undeclared, and the remaining 8 for other uses. Most perennial and ephemeral streams in the CIA have water rights filed on them. Water rights have been filed on 112 springs and 23 wells or tunnels. Stockwatering was the declared use on 62 of the water rights, 41 were for other uses, and the remaining 32 were undeclared. Springs and seeps are important to wildlife, though there are no filed rights that declare this as a use.

Both the Skyline and White Oak/Belina mines utilize water from wells in Eccles Canyon that were drilled into fault zones in the Starpoint Sandstone. Wells near the Skyline and White Oak/Belina loadouts in Pleasant Valley produce water from both alluvium and Starpoint Sandstone. Water from these wells is for domestic, stockwatering, and other uses.

During the 1979-1980 water year, Mud Creek contributed approximately 16% of the inflow to the Scofield Reservoir. Scofield Reservoir discharges into the Price River, which is used for irrigation in Castle Valley and provides the municipal water supply for the city of Price. Upper Huntington Creek drainage contributes an unknown amount to the total discharge of Huntington Creek, but estimates indicate it could be 25% or more.

Table 10 lists potential impacts to the hydrologic resources, indicates if there is a possibility for cumulative impact outside the permit areas, and identifies analytical parameters or other indicators that need to be monitored to track potential impacts of the permitted mines.

Periods of high suspended solids in the streams are normally also periods of high runoff, so fine sediments are flushed from the streambed and clean gravel beds for trout spawning are left. Sediment cleared from the streambed simply moves downstream, and in Mud Creek and upper Huntington Creek basins the sediment eventually accumulates in, respectively, Electric Lake or Scofield Reservoir. When runoff is low, fine sediments may remain and spawning gravels become unavailable. Fine sediments increase trout egg and fry mortality through suffocation. Invertebrates are also impacted by sedimentation through loss of habitat or mortality. Invertebrate diversity may decrease but resistant or adaptive species will remain. Impacts on invertebrates may reduce the supply of food for the trout. Construction, mining, and other activities produce the same negative impacts by decreasing flow or increasing

sedimentation beyond the capacity of the stream to flush itself. Coal fines have the same negative impacts as fine, natural sediments.

Fine sediments, including coal fines, have covered portions of the streambed below the Skyline Mines and have been trapped behind beaver dams in Eccles Creek. Removal of beaver dams has been done in an attempt to increase access from Scofield Reservoir to Eccles Creek for spawning cutthroat trout and to facilitate the flushing of fine sediments from the streambed. Sediment traps along Mud Creek have been suggested by UDWR as a solution that would maintain access to the stream for spawning trout while reducing sedimentation in Scofield Reservoir.

Temperature increase can reduce dissolved oxygen in a stream. Changes in temperature may directly influence algae growth rates. Winget (1980) found that water temperatures in upper Huntington and Eccles Creeks equilibrated quickly with air temperatures because of the turbulence from rough channels and low flows. However, UDOGM found that the temperature of Eccles Creek increased significantly, 43 degrees to 54 degrees, as it passed through the 72 inch bypass culvert and received the sediment pond discharge (UDOGM, 1988). With the steep gradients and rocky beds of the streams in the CIA, entrainment of oxygen and equilibration with air temperature should be sufficient to eliminate temperature as a factor in habitat quality.

Toxic materials in the water will reduce trout and invertebrate populations through mortality or avoidance. Nitrite concentrations in excess of 0.06 mg/l result in trout mortality. The long term LC_{50} exposure level for trout to nitrate is 1060 mg/l. Phosphorus in excess of 0.04 mg/l is not toxic to trout but does lead to eutrophication. Toxic levels of nitrite and eutrophication from excessive nitrogen and phosphorus were identified by the Utah Division of Wildlife Resources as causes of fish and invertebrate declines in Eccles Creek in 1987 - 1988.

Increased TDS has not been identified as a problem in any of the fisheries. There is no water quality standard for TDS for aquatic wildlife, but 1200 mg/l is the limit for agricultural use. There is a possibility of cumulative effect outside of individual permit boundaries in the Mud Creek drainage. TDS and sulfate exceeded UPDES limits at the Skyline mines because of gypsum contamination in the limestone used for dust control. The discharge returned within UPDES limits after application of contaminated rock dust ceased and continuing flow diluted or flushed residual contamination.

Sediment, total nitrate, phosphorous, and dissolved oxygen have been identified as water quality concerns for Scofield Reservoir. High nitrogen and phosphorus levels lead to increases in algae and aquatic vegetation, which in turn leads to a deterioration of water quality. The reservoir may become eutrophic unless measures are taken to limit nutrient inflow (Waddell and others, 1983a).

During the 1979-1980 water year, Mud Creek contributed approximately 16% of the inflow to the reservoir, 18% of the total dissolved solids (TDS), 28% of the total suspended solids (TSS), 18% of the total nitrogen, and 24% of the total phosphorous. During snowmelt, concentrations of nitrogen and phosphorus reached 21 and 4.3 mg/l at the Eccles Canyon gaging station. Most of this was in suspended form, and these unusually high concentrations were

probably due to flushing of residual debris from 27 acres of forested land cleared in 1979 for fire protection around the mine portal and road right-of-ways. (Waddell and others, 1983a).

Perched systems have limited storage and recharge capacities, and when they are intercepted by mining operations the resulting in-mine floss decline rapidly. Draining of these perched systems may cause individual springs or seeps to disappear but should have little impact on the hydrologic balance of the area. Flows into the mines that persist for more than 30 days should be considered as possibly intercepting surface water through a natural or subsidence induced fracture system.

Surface-mining methods employed at the White Oak/Belina mine may temporarily disrupt the groundwater and surface flow in the area. It is anticipated seeps and surface flows currently reporting to Whisky Creek will eventually re-surface through the fill or report at the toe of the fill. Any encountered seeps greater than 3 gpm will have a French drain installed to ensure the flow reports to the surface.

Operations at the Skyline Mines are drawing down the potentiometric surface of the regional aquifer, which can induce increased recharge and downward flow through the overlying unsaturated zone. This would have a minimal, probably undetectable effect on perched aquifers or soil moisture because of the generally low hydraulic conductivity of the Blackhawk Formation. However if the area involved were large enough, it could be one process leading to measurable interbasin transfer of water. The cone of depression and resulting effects on the overlying unsaturated strata will diminish with time after mining cease

POTENTIAL HYDROLOGIC IMPACTS	Possible Cumulative Effect Outside Permit Areas	Parameters of Importance and Other Indicators for Predicting Future Impacts
• ***Increased sediment yield from disturbed areas*** - Alteration or loss of fisheries in streams and reservoirs. Increased rate of sedimentation in reservoirs. Coal spillage from hauling operations and storage. Loss of riparian habitat.	YES	• Sediments • Fish and Macroinvertebrates
• ***Flooding or streamflow alteration*** - increase or decrease in streamflow.	YES	• Flow • Sediments • Fish and Macroinvertebrates
• ***Contamination of ground and surface water from acid- or toxic-forming or toxic materials*** - Contamination of surface water from coal hauling operations and storage. Hydrocarbon contamination from above-ground storage tanks or from the use of hydrocarbons in the permit area. Contamination from road salting. Gypsum used in dust control contaminating mine discharge. Nutrients in mine discharge.	YES	• Sediments • TDS • pH • Nutrients • Specific cations and anions • Oil and Grease • Fish and Macroinvertebrates
• ***Subsidence damage to springs and streams*** - increased sediment load, diminution of flow, physical barrier to fish migration.	YES	• Flow • Sediments • Fish and Macroinvertebrates
• ***Alteration or destruction of fisheries and aquatic habitats*** - loss of flow, loss of access to stream, loss of fish spawning habitat, increased sediment load, acute or chronic toxicity, eutrophication, loss of food supply.	YES	• Flow • Sediments • Fish and Macroinvertebrates • TDS • pH • Nutrients • Specific cations and anions
• ***Loss of ground water or surface water availability*** - water rights, wildlife uses.	YES	• Flow
• ***Reduction of flow due to interbasin transport of intercepted water.***	YES	• Flow

Table 10

VI. MATERIAL DAMAGE CRITERIA - RELEVANT STANDARDS AGAINST WHICH PREDICTED IMPACTS CAN BE COMPARED.

Water within the CIA is used for watering livestock and wildlife, mining coal, domestic use, fisheries, and recreation. Downstream, the water is additionally used for irrigation and domestic and industrial needs. Land within the CIA is used for wildlife habitat, grazing, recreation, and mining coal. Anticipated post-mining uses are for wildlife habitat, grazing, and recreation.

Quality

Water quality standards for the State of Utah are found in R317-2, Utah Administrative Code. The standards are intended to protect the waters against controllable pollution. Waters, and the applicable standards, are grouped into classes based on beneficial use designations.

Scofield Reservoir is classified as:

M 1C - protected for domestic use with prior treatment,
M 2B - protected for recreational uses except swimming,
M 3A - protected for cold water aquatic life, and
M 4 - protected for agricultural uses.

Electric Lake is classified as:
M 3A and 4.

Streams in both the Mud Creek and upper Huntington Creek basins are classified as:
M 1C, 3A, and 4.

Furthermore, surface waters located within the outer boundaries of a USDA National Forest, with specific exceptions, are designated by the Utah Division of Water Quality as High Quality Waters - Category 1 and are subject to the state's antidegradation policy. This antidegradation policy is that waters shall be maintained at existing high quality and new point source discharges of wastewater, treated or otherwise, are prohibited (Utah Administrative Code, R317-2-3.2 and R317-2-12.1). All of the upper Huntington Creek drainage and most of the headwater drainages of eastflowing tributaries to Mud Creek, including the Skyline mines disturbed area, are within USDA Forest Service boundaries and are protected by this policy. Discharge from the Skyline Mines sediment pond is into the 72 inch bypass culvert. The White Oak/Belina mines, both loadouts, and the waste rock disposal site are outside forest boundaries.

The Utah Department of Environmental Quality, Division of Water Quality can authorize a coal mine to discharge into surface waters under the Utah Pollutant Discharge Elimination System (UPDES). The permits for the mines contain site-specific limitations on total dissolved solids, total suspended solids (or total settleable solids for precipitation events), iron, oil and grease, pH. The Skyline Mines have an additional limitation on sulfate.

Water quality standard for nitrate in Class 1C waters is 10 mg/l. Nitrate levels above 4 mg/l are considered an indicator of pollution, usually from sewage, in all waters. For trout, the long term LC_{50} exposure level to nitrate is 1060 mg/l.

There is no water quality standard for nitrite, but concentrations in excess of 0.06 mg/l produce mortality in cutthroat trout (UDWR, 1988).

The water quality standard for Class 3A waters for phosphorus is 0.05 mg/l. Levels in excess of 0.04 mg/l are not toxic to trout but are excessive and promote eutrophication (UDWR, 1988). By state standards for Class 1C, 2A, 3A, and 3B waters, phosphate in excess of 0.05 mg/l is a pollution indicator.

The recommended limit for MBAS, a detergent or surfactant, is 0.2 mg/l (Steve McNeil, Utah Dept. of Health, personal communication *in* UDOGM, 1988).

There is no water quality standard for oil and grease, but the UPDES permit limit for both the White Oak/Belina and Skyline mines is 10 mg/l. A 10 mg/l oil and grease limit does not protect fish and benthic organisms from soluble oils such as those used in longwall hydraulic systems, and UDWR has recommended soluble oils be limited to 1 mg/l (Darrell H. Nish, Acting Director UDWR, letter dated April 17, 1989 to Dianne R. Nielsen, Director UDOGM).

Increased TDS has not been identified as a problem in any of the fisheries. There is no water quality standard for TDS for aquatic wildlife, but 1200 mg/l is the limit for Class 4, agricultural use.

Physical or chemical indicators alone do not fully evaluate water quality in streams. Macroinvertebrates are excellent indicators of stream quality and can be used to evaluate suitability of a stream to support a trout fishery and other aquatic life. Baseline studies of invertebrates by the USGS (Waddell, 1982) and Winget (1980) and studies done in conjunction with mine operations (Coastal States, 1993; ERI, 1992) provide standards against which actual stream conditions can be evaluated. Cutthroat trout populations are also excellent indicators of stream quality. UDWR surveys of trout populations in Eccles, Winter Quarters, and Huntington Creeks have established baseline conditions.

The maximum temperature for Class 3A waters is 20 degrees C (68 degrees F). The maximum allowable change for Class 3A waters is 2 degrees C (3.6 degrees F).

Sedimentation

Sedimentation of reservoirs and the eventual lose or diminution of their value is inevitable. Waddell and others (1983a and b) examined sedimentation in Scofield Reservoir. A bathymetric survey was done to a) estimate total sediment yield from inflowing streams; and b) to provide detailed bathymetric measurements at selected cross sections to allow more accurate evaluation of future deposition. The rate of sediment accumulation and deposition was estimated by using lead^{210} to determine the relative ages of sediment samples from cores. Increased

sedimentation in the reservoirs due to mining in the adjacent drainages might be detectable using such techniques, but direct monitoring of inflowing streams is probably more effective.

Changes in sediment size distribution in streams can be determined by comparison with past studies (Winget, 1980; Coastal States, 1993, Table 2.8-3). Winget identified 15% or more of materials finer than 0.85 mm in diameter as a critical measure of biotic potential, that is whether or not fish eggs and fry and many macroinvertebrates would be suffocated.

Interbasin Diversion

Wadell and others (1983b) examined the issue of interbasin diversion and the possibility that interbasin diversion could be quantified through measuring and comparing the low flow rates of streams. The concern in that study was for diversion from the Mud Creek basin to Huntington Creek: the current concern is for diversion in the opposite direction.

Based on correlations of low flows in several streams in the southern Wasatch Plateau, Wadell (1981 *in* Wadell and others, 1983b) found that with 5 years of continuous discharge records, monthly flows for August, September, and October could be estimated with a standard deviation of 20%. From measurements in 1979 and 1980 it was calculated that the average ratio of the low flows of Mud and Fish Creeks during October, the low flow month with the least variation, was 0.42.

Wadell and others (1983b, p. 129) approximated the amount of water that would need to be diverted from or to the Mud Creek basin before it could be detected. Assuming 1) a 20% standard deviation, 2) an average flow ratio of 0.42 between Mud Creek and Fish Creek, 3) an average flow of Fish Creek in October of 330 acre-feet/year (5.4 cfs),

$$(\pm 0.20)(330\text{acrefeet})(0.42) = \pm 28\text{acrefeet} = \pm 0.45\text{cfs}.$$

A longterm increase or decrease of flow in Mud Creek of at least 0.45 cfs would be detected 68% of the time by correlating the October flows of Mud and Fish Creeks. The USGS has stream gaging stations on Eccles, Mud, and Fish Creeks, but Eccles and Mud Creeks have not been monitored on a regular basis

Discharges of Burnout and Huntington Creeks into Electric Lake are monitored, but discharges of other streams into the lake are not. Estimated discharge from the upper Huntington Creek basin is 16,000 acre feet per year (22 cfs) based on the measured discharges of Burnout and Huntington Creeks and 27,000 acre feet per year (37 cfs) based on predicted average yield. From 1983 to 1993 discharge of Huntington Creek at USGS station 09317997 near the town of Huntington averaged 54,480 acre feet per year (75 cfs), so these estimated discharges would comprise 29% to 50% of total flow. The upper basin drains only 20,000 acres, or 17% of the 113,900 acres in the Huntington Creek drainage, so these estimated discharges appear to be too large. Water storage changes in Electric Lake are monitored daily with an accuracy of 5 acre-feet/day (2.5 cfs), 6% to 11% of estimated average daily flow into the lake. Diversion of water between Mud Creek and upper Huntington Creek basins probably would probably be

undocumentable in the Huntington Creek basin because of the lack of sufficient monitoring and precise data.

VII. ESTIMATE OF THE IMPACTS OF MINING ON THE HYDROLOGIC RESOURCES

Quantity

Increased Streamflow

Table 1 of the Skyline PHC (September 30, 1992) indicates production of 1 million tons of coal results in a minimum of 80 gpm (0.18 cfs) of water discharged from the mine. Table 1 indicates discharge rates have been as high as 180 gpm (0.40 cfs) per million tons of coal mined. The projection is made on Figure 2 in the Skyline PHC that maximum average discharge will be 550 gpm (1.22 cfs) when coal production reaches 6.5 million tons of coal annually.

Skyline's records show discharge was first monitored from the #3 Mine in 1983 and from the #1 Mine in 1989. Up to 1991 the average discharge from Skyline #1 was 0.35 cfs and from the #3 Mine was 0.5 cfs. This is discharged to Eccles Creek by way of the sediment pond. When stream flow is naturally low in late summer to early autumn, discharge from the Skyline mines has been estimated to account for as much as 60% to 70% of flow in Eccles Creek.

Average discharge from the White Oak/Belina #1 Mine between 1981 to 1989 was 0.19 cfs (Table 724.100a). No water had been discharged from the White Oak/Belina #2 Mine as of 1993. Discharge from Pond 004 was sporadic from 1995 through 2000 with no discharges after August 1999. Average discharge flow from 1995 through 1999 was 74 gpm/day. Coal production from both mines has averaged approximately 0.5 million tons per year, so a very rough estimate of water production is 0.4 cfs per million tons of coal mined. Projected maximum coal production from White Oak/Belina #1 and #2 Mines is 2 million tons per year, which would result in an estimated discharge of 0.8 cfs of water.

If both coal mining operations were to reach maximum production simultaneously, the total projected increase of flow in Mud Creek would be 2.0 cfs. This would also be the increase in Eccles Creek if the White Oak/Belina mines were to discharge all their water from the present portals. But maximizing White Oak/Belina's production to 2 million tons per year would probably require at least one additional portal, either in Boardinghouse or Finns Canyon, and part of the water produced by mining would probably be discharged through that portal. Discharge from Pond 004, which serviced both the White Oak/Belina #1 and #2 Mines, indicated the water anticipated was not encountered during mining. Records indicate only sporadic flows were encountered.

If discharge to Eccles Creek were to reach 2.0 cfs, roughly double what is now being discharged on average, it would probably have little impact on either Eccles or Mud Creek. It would be most noticeable during low flow.

Interbasin Diversion

Coastal has estimated that the interbasin diversion from the Huntington Creek basin to the Mud Creek basin from operation of the Skyline mine was 95 gpm (0.21 cfs) in 1991. From Table 1 and Figure 2 of the Skyline PHC it can be estimated that maximum interbasin diversion by the Skyline operations could be as much as 370 gpm (0.82 cfs), 68% of the projected maximum average discharge of 550 gpm.

Approximately 22% of the White Oak/Belina permit area is in the Huntington Creek basin, but as of 1993 only a small portion of the White Oak/Belina #1 and none of the White Oak/Belina #2 workings extended beneath that basin. The White Oak/Belina PHC contains an estimate that when the Second and Third West Mains in White Oak/Belina #1 Mine were pumped, 45 to 50 gpm (0.10 to 0.11 cfs) were diverted from the Huntington Creek basin to the Mud Creek basin.

Projected maximum coal production from White Oak/Belina #1 and #2 Mines is 2 million tons per year. In the previous section the estimate was made that at maximum coal production 0.8 cfs of water would be discharged. Assuming that 22% of the water would come from the Huntington Creek basin, the average interbasin diversion would be 0.2 cfs.

The maximum diversion of water from the Huntington Creek basin to Mud Creek basin that can be projected based on the above information is 1.0 cfs, or half of the maximum projected increase in flow. Most of this water would come from the saturated rocks of the Blackhawk-Starpoint aquifer. But changes in the potentiometric surface in that aquifer can influence recharge and movement of ground water through the overlying unsaturated zone, so some of the water diverted from the Huntington Creek basin to the Mud Creek basin could come from surface runoff and spring discharges.

Subsidence

Especially where overburden is minimal or fracturing is extensive, there is potential for the capture of ground water or surface water by subsidence cracks (Engineering-Science, 1984; Valley Camp, 1993, Appendix R645-301-724.600). Subsidence impacts are largely related to extension and expansion of existing fracture systems and upward propagation of new fractures. Because vertical and lateral movement of ground water in the permit area appears to be largely controlled by fracture conduits, readjustment or realignment of the conduit system may potentially produce changes such as increased flow along fractures that are opened and diversion of flow along new fractures. Increased flow rates would potentially reduce residence time and improve water quality. Some of the perched, localized aquifers could be dewatered. Ground water diverted from seeps or springs fed by such systems would most likely emerge nearby at another surface location rather than drain down into the mine. Sealing of subsidence cracks by clays in the Blackhawk is expected to minimize long term effects of subsidence on the hydrologic systems.

Mines are designed to restrict subsidence to the permit areas. Because the perched aquifers of the Blackhawk Formation are lenticular and localized, there is little potential for the effects from dewatering these aquifers to extend beyond the permit area. Where mining and subsidence occur within the saturated rocks of the regional aquifer there will be a large increase in permeability locally. With time, permeability will decrease as fractures close and the potentiometric surface will establish a new equilibrium. Residual impacts should be restricted to the previously mined area and will probably be negligible.

VIII. MATERIAL DAMAGE DETERMINATION

Interbasin Diversion

Diversion of up to 1.0 cfs of ground water either to or from the upper Huntington Creek basin is possible. Most of the water now being diverted by mining or expected to be diverted in the future comes from the deeper regional Blackhawk-Starpoint aquifer. This deeper aquifer does not contribute directly to the water budget of upper Huntington Creek basin; however, changes in the potentiometric surface can influence recharge and movement of ground water through the overlying unsaturated zone. Because the potentiometric surface is expected to recover to approximate pre-mining conditions after mining ceases, the overlying unsaturated zone should also be expected to recover to approximate pre-mining conditions.

Interbasin diversion of surface water is not expected. The volume of water available for storage in Electric Lake should not be effected by the interbasin diversion of ground water. There should be no impact or material damage to either Electric Lake or Scofield Reservoir or areas downstream of them.

Loss of Habitats for Cutthroat Trout and Invertebrates

The critical spawning habitat for Yellowstone cutthroat trout in Burnout Creek is entirely within the Skyline permit area. Upper Huntington Creek and several of its tributaries are within the permit area, with the uppermost reaches of Huntington Creek extending upstream beyond the permit boundary. Large numbers of cutthroat trout have been seen in James Creek during spawning season, but it has not been determined which, if any, of the tributary streams other than Burnout Creek are cutthroat spawning streams. Boulger Creek is being modified to facilitate access by spawning trout.

Subsidence could produce physical barriers or loss of water flow sufficient to block fish from reaching spawning areas. Sedimentation caused by subsidence or other mine related activities could bury gravels used for spawning. These effects would probably be mitigatable by removal of barriers, restoration of flow, or sediment control and no material damage would result. However, the Skyline and White Oak/Belina mining and reclamation plans do not identify whether or not these streams need protection, what will be done to protect them, and what mitigation would be done to prevent material damage. The mining and reclamation plans should provide for protection of spawning habitats within and adjacent to the permit area and define mitigation to be done if the spawning habitats are damaged.

The cutthroat trout found in Eccles Creek and other streams of the Mud Creek drainage are not of a threatened or endangered species. This trout population has been heavily decimated by sedimentation, eutrophication, or toxicity several times in the past. These negative impacts generally have been caused by human activity in Eccles Canyon, namely road construction and coal mining. Beaver dams, which are natural traps for fine sediment, have interacted with the additional fine sediments produced by human activities to further reduce trout habitat in Eccles Creek. Trout populations have recovered when the impacting activities have ceased, been modified, or otherwise mitigated, although recovery has not been determined to be 100%.

No material damage to habitats for trout or invertebrates is expected.

Increase or Decrease in Stream-flow

At current discharge rates, mine discharge provides an estimated 60% to 70% of the flow in Eccles Creek in late summer and early autumn. If total mine discharge were to reach 2.0 cfs it would become a dominant factor in chemical and physical characteristics of the stream for much of the year. Increases in sedimentation and in TDS and specific solutes could occur during low flows. Aquatic life could be affected directly by variations in pH, flow, nutrients, temperature, and dissolved oxygen. Variations in water quality caused by mining activities and the resulting effects on aquatic life have been mitigatable in the past and should continue to be so in the future.

Because most erosion occurs during spring runoff, there should be little change in erosion or in the ability of the stream to flush itself of fine sediment periodically.

There should be no noticable change of flow in streams in theHuntington Creek drainage.

At the cessation of mining, flows in Eccles Creek should return to pre-mining levels. Less flow during low flow periods will be the most noticable effect. There is no present or foreseen material damage resulting from changes in flow due to present or projected discharge from the mines.

Water Quality

Sulfate and TDS have increased in Eccles and Mud Creeks as a direct result of mining activities. Water quality standards have not been exceeded, but stream quality has been degraded. UPDES limits were exceeded for a time at the Skyline sedimentation pond. The suspected source of the problem, gypsum on limestone used for dust control, was eliminated and water quality appears to be recovering.

Whisky Creek contributes to approximately 6 percent of the flow in Eccles Creek and 2 percent of Mud Creek, respectively. No water quality standards have been exceeded, but stream quality within Whisky Creek has degraded during mining activities. The combination of limited degradation to water quality and minimal contribution of flow the cumulative impact to water quality within the Mud Creek basin is minimal.

Excessive nitrogen and phosphorous compounds have been introduced into Eccles Creek by mining activities. Sewage was suspected as the source of the contamination at one time, but emulsified oil from longwall hydraulic systems and detergents were determined to be the sources. Fish and invertebrate populations were greatly reduced or eliminated from much of the stream, either because of avoidance or toxicity. Populations recovered after the causes of the contamination were eliminated, although it has not been determined recovery is complete. The possibility that excessive nitrogen and phosphorous nutrients in inflowing streams could lead to eutrophication of Scofield Reservoir is a concern.

Water quality problems have so far proven to be mitigatable. No material damage to water quality is expected but water quality must be monitored diligently to avoid even short term problems.

Erosion and Sedimentation

Fine sediments in Eccles Creek have increased as a result of road construction and coal mining related activities. Coal fines are a notable addition to the fine sediment load. One impact of the increase in fine sediment has been reduced trout and invertebrate populations because of suffocation of trout eggs and fry, burial of gravel used for trout spawning, and loss of suitable invertebrate habitats. After mining and reclamation activities cease, Eccles Creek should be able to flush itself of excessive fine sediments.

Fine sediments and runoff associated with the reconstruction of Upper Whisky Creek and surface-mining methods employed at the White Oak/Belina Mine are mitigated with all flows reporting to sedimentation ponds until vegetation standards are achieved. Native stream channel sediments in Upper Whisky Creek are being removed and stored to be used in reconstruction of the channel. Long term effects to the Mud Creek drainage system should be minimal.

A long term concern is the loss of water storage capacity in Scofield Reservoir from sedimentation. Sediment traps have been suggested as a means of removing the fine sediments originating in the Eccles Creek drainage.

Sedimentation has not been a problem in the Huntington Creek drainage. Because of the possibility that subsidence will increase erosion and sedimentation, the effects of subsidence are being studied in Burnout Canyon by the USDA Forest Service. Mitigation for potential loss of trout spawning habitat has been undertaken.

No material damage from erosion or sedimentation is expected.

IX. STATEMENT OF FINDINGS

No evidence of material damage from the actual mining operations has been found. No probability of material damage from actual or anticipated mining operations has been found.

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State of Utah

Utah Oil Gas and Mining

Coal Regulatory Program

White Oak Mine
Mining of Barrier Coal
C/007/001-SR01A-2
Technical Analysis
October 26, 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 White Oak No.1 and No. 2 Mines; the Whisky Creek Surface Mine No. 1 and the White Oak Loadout.
White Oak No. 1 and No. 2 Mines were the underground mines formerly known as the **Belina No. 1 and No. 2 Mines.**
WhiteOak Loadout was formerly known as the Valcam Loadout.
MRP--means Mining and Reclamation Plan.

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 is dated March 19, 2001
(supplemental information from Lodestar was received April 17, 2001)
Division's Technical Analysis is dated July 13, 2001
Lodestar's provides second submittal with soils information and drill logs September 10, 2001.
Division's second Technical Analysis is dated October 19, 2001.
Lodestar's third submittal is received October 19, 2001.
Division's third Technical Analysis is dated October 26, 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

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

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.)

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, but not critical to the evaluation of the reclamation plan a condition has been added to the permit to submit the requested information. For the reader's convenience, a list of permit conditions is included at the beginning of this document.

SUMMARY OF PERMIT CONDITIONS

Additional information is requested of the Permittee to address deficiencies in the proposal. Such deficiencies will be conditioned to the requirements of the permit issued by the Division to achieve compliance with the Utah Coal Regulatory Program. A summary of permit conditions is provided below. Additional comments and concerns may also be found within the analysis and findings made in this Draft Technical Analysis.

Accordingly, the Permittee must address the following permit conditions within the time specified after permit issuance, in accordance with the requirements of:

Regulations

R645-301-412, By January 26, 2002, the Permittee must remove all references to construct the 1200-foot section of road because the Oman's desire to construct it themselves or the lease agreement must be modified. Also by January 26, 2002, comments from the landowners concerning the postmining land use for Section 30 must be provided. 98

R645-301-524.330, a pre-blast survey of the Questar gas pipeline must be conducted. Copies of the pipeline survey must be provided to Questar prior to blasting to provide an opportunity for comments (R645-301-524.340). Copies of pipeline survey must be provided to the Division within 10 days of completion of the survey. 92

R645-301-541.400, By January 26, 2002, details of the reclamation sequence of the Belina Haul Road and the White Oak Complex coal pad and Sediment Pond 004A must be submitted to the Division 96

R645-301-542.300 and R645-301-521.152, By November 26, 2001 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 130

R645-301-553, The Permittee may take more than 60 days to do rough backfilling and grading provided that no more than 306,000 LCY of spoil may be stored in the temporary spoil pile or in any pit or other location at the mine where it is not in the approximate location for final grading. 40

R645-301-560, As a stipulation of the permit, the Permittee must establish the approximate location of the upper portion of Whisky Creek during rough backfilling and grading. 40

R645-301-731.120, By November 26, 2001, the Permittee must revise Figure SRP-2 to include: 1) the location of the highwall in the Relocated Stream Profile that will be moved further upstream, and 2) the graded spoils in the restored stream channel that will be removed from the Transition X-Section to more accurately reflect the actual design. 117

SUMMARY OF PERMIT CONDITIONS

R645-301-742.310, By November 26, 2001, the Permittee will revise all Map R645-301-742-310B versions (submitted on September 10, 2001) to indicate that the correct weighted curve number for Zone 4 is 74..... 83

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 surface and subsurface land ownership information.

Maps and text of the MRP are referenced by various names such as Belina Mine Complex, White Oak complex, Whisky Creek, Loadstar Energy, Mountain Operations. The original names for the underground mines were Belina No. 1 and No. 2 mines. The names were changed to White Oak No. 1 and No. 2 when purchased by White Oak Mining & Construction. Lodestar Energy, Inc. retained the White Oak No.1 and No. 2 names. The surface mining to recover the barrier coal at this complex is called Whisky Creek No. 1 Mine.

Findings:

Information provided in the application is considered adequate to meet the minimum Identification of Interests requirement of the regulations.

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.

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.[2] The Oman's lease agreement requires that all trees cut by the mine which exceed five 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 shows the Federal coal boundary. Section 114 Right of Entry Information of the MRP commits to survey and mark on the ground the Carbon County/Federal coal lease property line.

Plate 5-1C shows the federal coal boundary. In section 112.800 of the PAP the Permittee makes the following statement.

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

The Permittee will not mine Federal coal without authorization.

Findings:

Information provided in the application is considered adequate to meet the minimum Right of Entry requirements of the regulations.

2 Phone conversation with David Miller, Business Manager for Lodestar Energy, Inc., and Susan White of the Division on October 12, 2001.

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.

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 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:

Chapter 1, Section 111 explains that the Mine Complex is referred to throughout the submittal by several names: Belina Mine Complex and White Oak Complex. The complex includes two underground mines which were called Belina No. 1 and No. 2 Mines until 19XX and then White Oak No. 1 and No. 2 Mines thereafter. The Complex also includes the Valcam Loadout which is sometimes referred to as the White Oak Loadout in the Mining and Reclamation Plan. In 2001, a surface mine (called the Whisky Creek No. 1 Mine) was added to the White Oak complex. Plate R645-301-521.150 Sheet 4b of 4 "Whisky Creek Surface Mine Surface Facilities", illustrates the Whisky Creek No. 1 Mine.

Findings:

Information provided in the proposed amendment is considered adequate to meet the minimum Permit Application Format and Contents of the Regulations.

ENVIRONMENTAL RESOURCE INFORMATION

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

GENERAL

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

Minimum Regulatory Requirements:

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

Analysis:

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

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

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

The White Oak Mine Complex is at an elevation of 9,200 feet. The slopes at the Belina Mine Complex range from 30 to 50 %. The North facing slopes are covered with Engelman Spruce and subalpine fir. Aspen communities are found on the south facing slopes. Mountain meadow communities are scattered on upper slopes and ridges. The Mine Complex is bi-sected by a perennial stream that is bordered by the spruce-fir forest.

The Division reviewed the environmental resource information 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 Area .....2.6 acres
- Lower Haul Road .....22.7 acres
- Upper Haul Road.....23.4 acres
- Mine Complex.....69.2 acres
- Total Areas.....151.1 acres

The permitted increased the disturbed area boundary at the White Oak mine complex by 8.28 acres to 69.2 acres. The reason for the increase is for maximizing coal recovery. Within the 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.

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

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

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

Findings:

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

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.

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. JBR3 states in response to this low cover value:

"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."

No woody species were encountered in the cover sampling of the riparian community. Aspen, spruce and current occurred along the slopes though out the channel 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 adequate to meet the minimum Vegetation Resource Information requirements of the Regulations.

3 E-mail from Linda Matthews to Susan White, dated October 10, 2001.

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.

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 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 Appendix R2, Plate R645-301-521.150 Sheet 4 Belina Mine Site Surface Facilities As-Built (dated 1993) illustrates the islands of undisturbed ground within the disturbed area.

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 Cryoborolls.[4] 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 Cryoboralf[5] (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 Cryoborolls[6] (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.

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4 "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.
5 "Cryo" for icy cold Great Group, "bor" for coo 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.
6 "Typic" for typical of the Cryoboroll Great Group.

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.

Estimates of the Present and Potential productivity of the existing soils have been made by Leland Sasser of the NRCS after comparison of the Order 1 Soil Survey report and Order III soils information for the County. Mr. Sasser's estimate of present productivity was made without a field visit. Site specific information was gathered by Dr. Stanley Welsh of Endangered Plant Species, Inc. and is found in Appendix 321.

Findings:

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

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.

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 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 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.

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

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

Facilities and Structures

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

Findings:

The information in the proposed significant revision is considered adequate to meet the requirements of the Mining Operations and Facilities section of the regulations. As a stipulation to the permit, the Permittee must provide the following in accordance with:

R645-301-553, The Permittee may take more than 60 days to do rough backfilling and grading provided that no more than 306,000 LCY of spoil may be stored in the temporary spoil pile or in any pit or other location at the mine where it is not in the approximate location for final grading.

R645-301-560, As a stipulation of the permit, the Permittee must establish the approximate location of the upper portion of Whisky Creek during rough backfilling and grading.

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.

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.

In Section 553 of the PAP, Backfilling and Grading, the Permittee states the following:

The backfilling and grading for the surface mining of barrier coal at the White Oak Complex will not be able to meet the requirements for backfilling and rough grading to follow coal removal by not more than 60 days or 1,500 linear feet. Therefore, Loadstar Energy is requesting a variance to this regulation for the following reasons. The creation of the temporary spoil storage area will take a minimum of 90 days. This material will not be pushed entirely into the pits created to remove the coal during this period. In the 4th month, the upper seam of coal will be uncovered and the material from this pit will go to the lower bench and start the process where pit 1 can be rough graded. The confined area of this mining operation will cause adjacent areas to be used for access. Grading will be done to provide the access but the grading of spoil against the highwall may be more than 60 days behind in some areas. Grading will occur to place the temporary spoil storage material, however the letter of this regulation may not be met at all times on the 60-day requirement.

The Division has reviewed the mining plan and determined that due to the limited space and the 2 coal seams that the Permittee will not be able to meet the 60-day backfilling requirement. The Division will require that the Permittee have no 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 did not state when backfilling and grading of the surface mine would occur or what the maximum disturbed acreage would be. However, R645-301-553 requires that once an area has been mine backfilling and grading must occur within 60 days or when mining has advance 1,500 feet. Due to the size of the surface mine the limiting factor will usually be 60 days.

The Permittee 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.

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 repot to sediment control structures during the mining and reclamation process and the stream alteration and restoration plan is approved to put the stream water flow back into the lower Whisky Creek. The material that the spoil is comprised of ahs been tested and determined to be non-toxic, so water quality will not be compromised.

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

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

Type and Method of Mining Operations

In the past, the Permittee recovered coal by room and pillar methods. The reserves that can be recovered by underground methods have 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

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.

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. It shows two specific reference areas near the mine complex (in addition to a reference area near the loadout).

Findings:

The information in the proposed Significant Revision is considered adequate to meet the requirements Maps, Plans, and Cross Sections Resource Information section of the regulations.

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.

Surface and subsurface manmade features maps

In Section 521.122 of the MRP, the Permittee states the following:

Location of surface and subsurface man-made features within, passing through, or passing over the mine permit area are depicted on Map 521.150 sheets 1 through 4.

Map 521.150 sheets 1 through 4 only show the disturbed areas and do not show the location of the natural gas pipelines, power lines, and water lines as shown on R645-301-521.122. R645-301-521.122 requires the Permittee to show the location of surface and subsurface man-made 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. Map R645-301-521.122 shows the location of surface and subsurface manmade features in and around the permit boundaries. Therefore, the Permittee must modify the MRP to state what maps so the location of surface and subsurface features in the entire permit area.

Map R645-301-521.122 shows a road labeled as Reclamation Access Road going up Boarding House Canyon to the mine site. The reclamation access road does not appear on other maps. The Permittee needs to clarify if the reclamation access road shown on map R645-301-521.122 exists.

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) provides accurate information concerning the spillway/discharge point from Pond D-1, and both the original and new location for Stream Sample VC-4.

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

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

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

If the Permittee has mine working maps that show the location of the mine works on or near being conducted on August 3, 1977 they should be included in the MRP. If such maps do not exist then the Permittee should state so in the MRP.

Map 645-301-521.111 shows mine workings for the Pleasant Valley Mining District. However, the map does not state which mine workings are Pre-SMCRA or Post-SMCRA. Map 645-301-521.111 was not certified as required by R645-301-512.110. In section 521,111 of the MRP the Permittee states that map is not certified because the information is incomplete. The Division realizes that the information on the Pleasant Valley Mining District map is old and the current Permittee has no way of verifying the information. Therefore, the Division will not require the map to be certified.

The Division needs mine working maps for both White Oak mines that are within the disturbed area boundaries at a scale of 1" = 100'. The Division needs maps at that scale to determine when the mining working will intersect the surface mine. The map should have a reference system such as the state plane coordinate system.

Permit Area Boundary Maps

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

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

In Appendix R2, Plate R645-301-521.150 Sheet 4 Belina Mine Site Surface Facilities As-Built (dated 1993) is a historical document that illustrates the islands of undisturbed ground within the disturbed area prior to the onset of surface mining.

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.

The mine, haul road, loadout and office are shown on Maps 521.150 "As Built" Sheets 1 through 4. 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 prior to surface mining.

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

Existing Surface Configuration Maps

Surface Facilities Associated with Underground Mining

The Permittee did not include maps and cross sections of the pre-disturbed areas, because most of the mine site existed prior to August 3, 1977. The Division is not concerned with having existing surface configuration maps because the disturbance is preSMCRA. The Permittee does have several maps that show the topography of the mine site during underground mining.

In section 521.152 of the MRP the Permittee states that the "adjacent to" previously mined areas shown on mine maps are based on historic data and were not certified by today's standards. While R645-301-521.152 requires the existing surface configurations maps to be certified the Division understands that if such maps exist they were not produced by the current Permittee, who may be unable to certify the accuracy of such maps. The Division considers the existing surface facilities maps adequate.

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

sections and contour maps.

Surface and subsurface manmade features maps

The location of all buildings in and within 1,000 feet of the proposed permit area, with identification of the current use of the buildings. The location of surface and subsurface manmade features within, passing through, or passing over the proposed permit area, including, but not limited to, major electric transmission lines, pipelines, and agricultural drainage tile fields. Each public road located in or within 100 feet of the proposed permit area.

Surface and subsurface ownership maps

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

Surface water resource maps

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

Vegetation reference area maps

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

Well maps

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

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

Analysis:

Affected Area Boundary Maps

The Division usually considers the affected area to be within the permit area. The affected area usually consists of the surface facilities and underground working. For the White Oak mine the affected area will also include the surface mine. In the environmental resource section of the TA the Division is concerned with acquiring information about the pre-mining site.

Drawing R645-301-100 shows the permit area. Map R645-301-521.150 sheets 1-4 received on August 5, 1993 show the disturbed areas at the mine site, load out, haul road and office. Plate 5-1C shows the area that will be surfaced mined. All surface mining will be done within the outside disturbed area perimeter. However, the Permittee proposes to disturb undisturbed islands within the mine site.

be submitted separately from the application, and marked and held as confidential.

Coal resource and geologic information maps

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

Cultural resource maps

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

Existing structures and facilities maps

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

Existing surface configuration maps

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

Mine workings maps

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

Monitoring and sampling location maps

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

Permit area boundary maps

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

Subsurface water resource maps

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

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.

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

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 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

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

Analysis:

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

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

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

Findings:

The Permittee 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 when temperatures allow.
- Controlling the size of blast according to MSHA.
- Rocking and grading of the pit access to reduce fine airborne particulates.

Findings:

Information in the proposal is adequate to meet the minimum Air Pollution Control Plan requirements of the Regulations.

COAL RECOVERY

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

Minimum Regulatory Requirements:

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

Analysis:

The Permittee proposes to conduct surface mining in and around the disturbed area boundary of the White Oak mine site. The main reason for surface mining is to recover coal that was unrecoverable by underground mining. The area of potential surface mining is limited by the location of underground workings and overburden depth.

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' Conner Seam) for the mine plan. The Permittee plans of recovering 773,100 tons of coal and the average overburden to coal ratio is 3.98.

Based upon the spot market prices for Utah as noted in the September 3, 2001 Coal Outlook[7] 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.

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

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

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

Subsidence control plan

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

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

Performance standards for subsidence control

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

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

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

Underground mining activities shall not be conducted beneath or adjacent to: public buildings and facilities; churches, schools, and hospitals; or, impoundments with a storage capacity of 20 acre-feet or more or bodies of water with a volume of 20

acre-feet or more, unless the subsidence control plan demonstrates that subsidence will not cause material damage to, or reduce the reasonably foreseeable use of, such features or facilities. If the Division determines that it is necessary in order to minimize the potential for material damage to the features or facilities described above or to any aquifer or body of water that serves as a significant water source for any public water supply system, it may limit the percentage of coal extracted under or adjacent thereto.

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

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

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

Notification

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

Analysis:

Renewable Resources Survey

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

Subsidence Control Plan

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

Subsidence Control Plan

The revision received February 17, 2000 includes two map revisions, Plates 5-1A, which is the five year mine plan for the White Oak #2 Mine (lower O'Connor seam) and Plate 5-1B, which is the five year mine plan for the #1 Mine in the upper O'Connor. Four subsidence monitoring points are indicated, one for each panel to be developed during 2000 through 2003. The monitoring points will be installed prior to development of the top seam for the establishment of baseline elevation data, and will

be monitored throughout the mining of the bottom seam, until subsidence monitoring of the area is no longer deemed necessary by the UDNR/OGM and the surface management agency.

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

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

Monitoring of Extraction Ratio

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

Monitoring of Pillar Stacking

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

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

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

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

Surface Mining

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

Performance Standards for Subsidence control

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

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

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

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

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

Within a schedule approved by the Division, the operator shall submit a detailed plan of the underground workings. The detailed plan shall include maps and descriptions, as appropriate, of significant features of the underground mine, including the size, configuration, and approximate location of pillars and entries, extraction ratios, measures taken to prevent or

minimize subsidence and related damage, areas of full extraction, and other information required by the Division. Upon request of the operator, information submitted with the detailed plan may be held as confidential

Notification

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

Findings:

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

SLIDES AND OTHER DAMAGE

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

Minimum Regulatory Requirements:

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

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

Analysis:

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

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

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

Findings:

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

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 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.

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 though 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 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.**

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. The total capacity of the six topsoil storage locations is 102,350 cubic yards (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 locations and cross-sections are shown on Map 521.165 Potential Topsoil Storage Piles and Cross Sections (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.

Plate R645-301-521.165 shows topsoil pile storage locations and topsoil pile cross-sections. All piles will have 2h:1v slopes or less. Section 231.400 of the application describes the dimensions of the probable locations of topsoil storage.

- Pile #1. The roadway above the surface mine has a capacity for 6,500 cubic yards. Average dimensions = 39'wide X 815'long X 5.53'thick.
- Pile #2. The coal storage pad has the capacity of 26,800 cubic yards. Average dimensions = 130'wide X 25' long X 24.4 ' thick.
- Pile #3. The truck loop has the capacity for 26,800 cubic yards. This pile will lean against the spoil also stored on the site and extend to the first bench on the spoil, fifty feet in height. Average dimensions = 100'wide X 250'long X 28.94' thick.
- Pile #4. Adjacent to Sediment Pond 004a, there is a capacity of 25,250 cubic yards. Average dimensions = 220'wide X 200'long X 15.49' thick.
- Pile #5. West of the coal storage pad there is the space to hold 14,200 cubic yards. Average dimensions = 100'wide X 200' long X 19.17' thick.
- Pile #6. The current spoil storage pile located on the slope north of the administration buildings has a capacity for 2,800 cubic yards. Average dimensions = 50' wide X 180 ' long X 8.4 ' 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 stored at 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.

Specific performance standards for topsoil protection are stated in Section 251 through 252. They include:

- The presence of a qualified soil scientist during topsoil stripping (Section 232).
- Topsoil stripping with the control of pedestals (Section 232).
- Installation of a berm or silt fence along the perimeter of the stockpiles.
- Surface roughening and slash.
- Seeding with the interim mix found on page 16 of the operations plan.
- Seeding with an annual grain at the rate of 100 PLS/acre when the topsoil pile is formed in a season other than fall. Followed by seeding with the interim mix in the first fall season.
- Filling rills and gullies and seeding with the interim mix.

Topsoil will be identified with signs and markers.

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 in Section 251 through 252 that this topsoil stockpile will be used to reclaim the conifer zones.

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 considered adequate to meet the Operations plan Topsoil and Subsoil requirements of the Regulations.

VEGETATION

Regulatory Reference: 30 CFR Sections 816.100; 817.100; 817.121(c).
R645-301Sections 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 describes further efforts to minimize disturbances and adverse impacts during mining by seeding 100 PLS lbs. per acre barley on all slopes that are rough graded (Section 532.100. Disturbed Area). Slopes that are protected by snow or that will be topsoiled within the next three months will not be seeded with the barley until an appropriate time.

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 meets the minimum Vegetation requirements of the regulations.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

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

Minimum Regulatory Requirements:

Road classification system

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

Plans and drawings

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

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

Performance standards

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

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

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

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

Primary road certification

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

Other Transportation Facilities

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

Analysis:

Road classification system

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

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

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

The original reclamation plan was to reclaim the main haul road before the main mine complex would be reclaimed. Access to the main mine site would be through upgrading existing

roads outside of the permit area and upgrading existing roads jeep trails and wheel tracks into roads. Since the Permittee no longer proposes to access the site from Boarding House Canyon for reclamation the jeep trails and wheel tracks will not be upgraded to roads.

Plans and drawings

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

The Spoils Backfill & Reclamation Details 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.

Coal mine waste

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

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

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

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

The disposal facility shall be designed using current, prudent engineering practices and shall meet any design criteria established by the Division. A qualified registered professional engineer, experienced in the design of similar earth and waste structures, shall certify the design of the disposal facility. The disposal facility shall be designed to attain a minimum long-term static safety factor of 1.5. The foundation and abutments must be stable under all conditions of construction. Sufficient foundation investigations, as well as any necessary laboratory testing of foundation material, shall be performed in order to determine the design requirements for foundation stability. The analyses of the foundation conditions shall take into consideration the effect of underground mine workings, if any, upon the stability of the disposal facility.

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

Refuse piles

Refuse piles shall meet the requirements of coal mine waste, the additional requirements provided below and the

requirements of 30 CFR Sections 77.214 and 77.215.

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

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

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

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

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

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

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

A qualified registered professional engineer, or other qualified professional specialist under the direction of the professional engineer, shall inspect the refuse pile during construction. The professional engineer or specialist shall be experienced in the construction of similar earth and waste structures. Such inspection shall be made at least quarterly throughout construction and during critical construction periods. Critical construction periods shall include, at a minimum: Foundation preparation including the removal of all organic material and topsoil; Placement of underdrains and protective filter systems; Installation of final surface drainage systems; and, The final graded and revegetated facility. Regular inspections by the engineer or specialist shall also be conducted during placement and compaction of coal mine waste materials. More frequent inspections shall be conducted if a danger of harm exists to the public health and safety or the environment. Inspections shall continue until the refuse pile has been finally graded and revegetated or until a later time as required by the Division.

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

Impounding structures

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

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

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

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

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

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

Burning and burned waste utilization

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

Return of coal processing waste to abandoned underground workings

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

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

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

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

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

Excess Spoil: General Requirements

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

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

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

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

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

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

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

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

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

If the disposal area contains springs, natural or manmade water courses, or wet weather seeps, the fill design shall

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

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

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

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

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

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

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

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

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

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

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

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

Excess Spoil: Durable rock fills

The Division may approve the alternative method of disposal of excess durable rock spoil by gravity placement in single or multiple lifts, provided the following conditions are met: durable rock fills shall meet the general requirements for excess spoil except as provided in this section; the excess spoil consists of at least 80 percent, by volume, durable, nonacid- and nontoxic-forming rock (e.g., sandstone or limestone) that does not slake in water and will not degrade to soil material. Where used, noncemented clay shale, clay spoil, soil, or other nondurable excess spoil material shall be mixed with excess durable rock spoil in a controlled manner such that no more than 20 percent of the fill volume, as determined by tests performed by a registered engineer and approved by the Division, is not durable rock; a qualified registered professional engineer certifies that the design will ensure the stability of the fill and meet all other applicable requirements; the fill is designed to attain a minimum long-term static safety factor of 1.5, and an earthquake safety factor of 1.1; the underdrain system may be constructed simultaneously with excess spoil placement by the natural segregation of dumped materials, provided the resulting underdrain system is capable of carrying anticipated seepage of water due to rainfall away from the excess spoil fill and from seeps and springs in the foundation of the disposal area and the other requirements for drainage control are met; and, surface water runoff from areas adjacent to and above the fill is not allowed to flow onto the fill and is diverted into stabilized diversion channels designed to safely pass the runoff from a 100-year, 6-hour precipitation event.

Excess Spoil: Preexisting benches

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

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

Disposal of excess spoil from an upper actively mined bench to a lower preexisting bench by means of gravity transport may be approved by the Division provided that: the gravity transport courses are determined on a site-specific basis by the operator as part of the permit application and approved by the Division to minimize hazards to health and safety and to ensure that damage will be minimized between the benches, outside the set course, and downslope of the lower bench should excess spoil accidentally move; all gravity-transported excess spoil, including that excess spoil immediately below the gravity transport courses and any preexisting spoil that is disturbed, is rehandled and placed in horizontal lifts in a controlled manner, concurrently compacted as

necessary to ensure mass stability and to prevent mass movement, and graded to allow surface and subsurface drainage to be compatible with the natural surroundings and to ensure a minimum long-term static safety factor of 1.3. Excess spoil on the bench prior to the current mining operation that is not disturbed need not be rehandled except where necessary to ensure stability of the fill; a safety berm is constructed on the solid portion of the lower bench prior to gravity transport of the excess spoil. Where there is insufficient material on the lower bench to construct a safety berm, only that amount of excess spoil necessary for the construction of the berm may be gravity transported to the lower bench prior to construction of the berm; and, excess spoil shall not be allowed on the downslope below the upper bench except on designated gravity-transport courses properly prepared by removing topsoil. Upon completion of the fill, no excess spoil shall be allowed to remain on the designated gravity-transport course between the two benches and each transport course shall be reclaimed.

Analysis:

Disposal of noncoal waste

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

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

In the reclamation section of the MRP (pages 9 and 10 of 37) the Permittee 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.***

Coal mine waste

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

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

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

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

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

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

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

Refuse piles

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

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

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

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

Impounding structures

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

Burning and burned waste utilization

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

Return of coal processing waste to abandoned underground workings

No underground development waste will disposed in underground workings.

Excess spoil

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

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

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

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

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 3,538,118 cubic yards of spoil will be moved during operations and 3,416,498 cubic yards of total backfill is required; therefore approximately 121,620 cubic yards of spoil is available to cover acid/toxic forming materials or to reduce the grade of the slope.

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 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 considered adequate to meet the requirements of this section.

HYDROLOGIC INFORMATION

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

Minimum Regulatory Requirements:

General

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

Groundwater Monitoring

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

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

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

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

Surface Water Monitoring

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

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

reporting requirements of the water monitoring plan do not exempt the operator from meeting any National Pollutant Discharge Elimination System (NPDES) reporting requirements.

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

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

Acid- and toxic-forming materials and underground development waste

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

Discharges into an underground mine

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

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

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

Gravity discharges from underground mines

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

Water-quality standards and effluent limitations

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

Diversions: General

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

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

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

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

Diversions: Perennial and intermittent streams

Diversion of perennial and intermittent streams within the permit area may be approved by the Division after making the finding relating to stream buffer zones that the diversions will not adversely affect the water quantity and quality and related environmental resources of the stream. The design capacity of channels for temporary and permanent stream channel diversions shall be at least equal to the capacity of the unmodified stream channel immediately upstream and downstream from the diversion. Protection against flooding and resultant damage to life and property shall be met when the temporary and permanent diversions for perennial and intermittent streams are designed so that the combination of channel, bank and flood-plain configuration is adequate to pass safely the peak runoff of a 10-year, 6-hour precipitation event for a temporary diversion and a 100-year, 6-hour precipitation event for a permanent diversion. The design and construction of all stream channel diversions of perennial land intermittent streams shall be certified by a qualified registered professional engineer as meeting the performance standards and any design criteria set by the Division.

Diversions: Miscellaneous flows

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

Stream buffer zones

No land within 100 feet of a perennial stream or an intermittent stream shall be disturbed by underground mining activities, unless the Division specifically authorizes underground mining activities closer to, or through, such a stream. The Division may authorize such activities only upon finding that: underground mining activities will not cause or contribute to the violation of applicable State or Federal water quality standards and will not adversely affect the water quantity and quality or other

environmental resources of the stream; and, if there will be a temporary or permanent steam-channel diversion, it will comply with the regulatory requirements for diversions.

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

Sediment control measures

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

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

Siltation Structures: General

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

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

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

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

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

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

Siltation Structures: Sedimentation ponds

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

1.) Provide adequate sediment storage volume;

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

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

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

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

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

7.) Ensure against excessive settlement;

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

9.) Be compacted properly.

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

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

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

Siltation Structures: Other treatment facilities

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

Siltation Structures: Exemptions

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

Discharge structures

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

Impoundments

The following requirements apply to both temporary and permanent impoundments:

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

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

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

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

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

removed and foundations excavated and prepared to resist failure. Cutoff trenches shall be installed if necessary to ensure stability.

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

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

8.) Spillways. An impoundment shall include either a combination of principal and emergency spillways, a single open-channel spillway, or, be configured as an impoundment that relies primarily on storage to control the runoff from the applicable design precipitation event. The Division may approve a single open-channel spillway that is: of nonerodible construction and designed to carry sustained flows; or, earth- or grass-lined and designed to carry short-term, infrequent flows at non-erosive velocities where sustained flows are not expected. Except impoundments that rely primarily on storage to control the runoff, the required design precipitation events for an impoundment having spillways are: for an impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a) a 100-year 6-hour event, or greater event as specified by the Division; and, for an impoundment not meeting the size or other criteria of 30 CFR Sec. 77.216(a), a 25-year 6-hour event, or greater event as specified by the Division. In lieu of meeting the single open-channel spillway requirements, the Division may approve an impoundment that relies primarily on storage to control the runoff from the design precipitation event when it is demonstrated by the operator and certified by a qualified registered professional engineer or qualified registered professional land surveyor that the impoundment will safely control the design precipitation event, the water from which shall be safely removed in accordance with current, prudent, engineering practices. Such an impoundment shall be located where failure would not be expected to cause loss of life or serious property damage, except where: in the case of an impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a), it is designed to control the precipitation of the probable maximum precipitation of a 6-hour event, or greater event as specified by the Division; or, in the case of an impoundment not meeting the size or other criteria of 30 CFR Sec. 77.216(a), it is designed to control the precipitation of a 100-year6-hour event, or greater event as specified by the Division.

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

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

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

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

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

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

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

2.) The quality of impounded water will be suitable on a permanent basis for its intended use and, after reclamation, will meet applicable State and Federal water quality standards, and discharges from the impoundment will meet applicable effluent limitations and will not degrade the quality of receiving water below applicable State and Federal water quality standards.

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

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

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

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

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

Ponds, impoundments, banks, dams, and embankments

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

If the structure is 20 feet or higher or impounds more than 20 acre-feet, each plan of this section shall include a stability analysis of each structure. The stability analysis shall include, but not be limited to, strength parameters, pore pressures, and long-term seepage conditions. The plan shall also contain a description of each engineering design assumption and calculation with a discussion of each alternative considered in selecting the specific design parameters and construction methods.

Analysis:

Discharges into an underground mine

In Section 513.600 of the PAP the Permittee states 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.

French drains are not being required installation at the Mine portals. 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 3 gpm. No significant/measureable 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-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. The Belina Sediment Control Facilities map (R645-301-731.720d) has been altered to accurately illustrates both the original and future location of Suface Sample VC-4.

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. Prior to placement of topsoil, the rough regarded slopes will be tested on a one sample per 5 acres density and 1 sample per drainage. If any of these samples return with parameters outside of acceptable range, the area around the unacceptable sample will be re-sampled at a higher density to determine the extent of the problem. The material left in the temporary spoil storage will be used to cover the problem area with at least 4-foot of additional non-toxic material (Chapter 7, page 700-57 of 105) This sampling program will be undertaken with cooperation from the Division.

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, previously undisturbed, 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 the 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 have 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 in incised. The pond is scheduled to be built before topsoil is removed for surface mining. Dugout D-1 collects surface runoff from all disturbed and undisturbed areas upstream.

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

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

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 pond designs based on a 25-year, 24-hour storm event. Figure 731.750h has been submitted which illustrates the Stage-Capacity Curves for Dugout Pond D-1.

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(SEDCAD 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 has been re-adjusted to reflect the remaining Surface Facilities area. The permitee has committed to making a written adjustment to all Map R645-301-742-310B version submitted September 10, 2001. Tables 742.221c, 742.221d, and 742.221e have been recalculated using the same weighted curve number.

Findings:

The information in the proposed significant revision is adequate to meet the minimum Hydrologic Information requirements of the Regulations. As a stipulation to the permit, the Permittee must provide the following in accordance with:

R645-301-742.310, By November 26, 2001, the Permittee will revise all Map R645-301-742-310B versions (submitted on September 10, 2001) to indicate that the correct weighted curve number for Zone 4 is 74.

SUPPORT FACILITIES AND UTILITY INSTALLATIONS

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

Minimum Regulatory Requirements:

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

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

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

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

Analysis:

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

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

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

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

The Permittee made those statements in section 526.200 and 526.200.

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

applicable performance standards.

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

- Prevents or controls erosion and siltation, water pollution, and damage to public or private property.

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

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

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

Findings:

The information provided is adequate with regards to the Operational Support Facilites 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.

USE OF EXPLOSIVES

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

Minimum Regulatory Requirements:

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

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

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

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

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

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

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

General performance standards

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

Blasting signs, warnings, and access control

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

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

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

Control of adverse effects

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

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

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

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

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

Records of blasting operations

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

Analysis:

General

Lodestar Energy, Inc. is proposing to contour strip the upper and lower O'Connor coal seams in the Mine facilities area. The area to be mined will be approximately 43 acres in size, and between 600,000 and 700,000 tons of reserve are capable of being recovered. The upper O'Connor is overlaid by one hundred and nine feet of overburden, which consists of multiple layers of shale and sandstone. The largest sandstone member is 22 feet thick. The lower

O'Connor is also overlain by shales and sandstones which comprise the eighty feet of interburden separating the two seams. The thickest sandstone member in the interburden is nine feet in thickness. The aforementioned information was taken from the review of information provided by the Permittee through analysis of the stratigraphic column of drill hole 75-30-3.

The Permittee has submitted, as part of SR01A three blast sketches which leave the certified blaster designing the blasting pattern a great deal of flexibility relative to the design criteria. As example, burden and spacing dimensions have the capability of being varied from ten to twenty-five feet, with borehole diameters having the ability to be varied from five inches to nine inches. This seems credible, based on the varying thicknesses of the numerous sandstone members which must be fractured in order to expose the coals. The controlling factors relative to the blast design will be the control of the adverse affects produced by air blast and ground vibration. Based on the 960 foot distance from the blasting area to the nearest manmade structure which must be protected (the Questar natural gas pipeline), the maximum amount of explosive which can be legally shot per 8 millisecond delay period calculates to be 289 pounds, assuming a scaled distance factor of 55 and a maximum peak particle velocity of 1 "/sec. This also assumes that seismic monitoring will not be conducted, as indicated on page 2 of the proposed blasting plan.

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

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

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

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

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

Pre-blasting Survey

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

Section 524.300 indicates that a blasting survey will be conducted if greater than five pounds of explosives are used and provides the components of the survey. The Utah 645 regulations require that a survey is required for all surface mine blasting. Questar Pipeline was notified of the impending blasting by letter dated October 12, 2001 signed by David B. Miller, Business Manager for Lodestar Energy (as per item I of the blasting survey outline provided on page 500-17). In response, Questar Pipeline Company made a written request of the Division for a pre-blast survey, dated October 17, 2001 and signed by David A. Inglby. As a condition of the permit, such a survey must be conducted as per Utah Regulation R645-301-524.330 which directs that special attention is paid to structures such as pipelines. Copies of the pipeline survey must be provided to the Division (R645-301-524.340).

Performance Standards

There appears to be a misunderstanding concerning the five pounds of explosives or blasting agent on page 500-17. Many people believe that when using less than five pounds of explosives, the blast is not regulated. This is just not true. Blasts that use five pounds or less explosives need not follow the published blasting schedule (R645-301-524) and for underground mining only (R645-301-524.300), the pre-blast survey is not required when using five pounds of explosives or less. All other performance standards apply. Whether using less than or more than five pounds of explosives, the surface mining permit must include steps taken to achieve

compliance with blaster certification program (R645-301-524.100); blast design (R645-301-524.200); preblasting survey (R645-301-524.300); schedule of blasts (R645-301-524.400 and 524.460); control of adverse blasting effects (R645-301-524.600); description of blasting records kept on file at the mine site (R645-301-524.700).

Blaster Certification Program

SR01A addresses blaster certification in Section 524.100, located on page 500-17. 524.100 commits the Permittee to use a certified blaster for the shooting of all blasts incident to surface mining and underground coal mining. The Permittee commits on page 500-16, Section 524.100 to use a Utah certified surface blaster to conduct all shots relevant to surface blasting at the Whiskey Creek Mine.

Regulatory Reference: R645-301-524.800

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

Blasting Signs, Warnings and Access Control

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

Control of Adverse Effects

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

The nearest structure is the Questar Gas 16 inch pipeline which is 960' west from the blast area. Page 500-19 of the October 19 submittal commits the blast design to the

implementation of the scaled distance factor and a maximum peak particle velocity of one inch/second for ground vibration. This is adequate.

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

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

Record of Blasting Operations

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

Findings:

The information in the proposed significant revision is considered adequate to meet the Operational Use of Explosives requirements of the Regulations. As a stipulation to the permit, the Permittee must provide the following in accordance with:

R645-301-524.330, a pre-blast survey of the Questar gas pipeline must be conducted. Copies of the pipeline survey must be provided to Questar prior to blasting to provide an opportunity for comments (R645-301-524.340). Copies of pipeline survey must be provided to the Division within 10 days of completion of the survey.

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

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

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

Mine workings maps

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

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

Findings:

The information in the proposed significant revision is considered adequate to meet the requirements of the Maps, Plans, and Cross Sections of Mining Operations section of the regulations.

RECLAMATION PLAN

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

GENERAL REQUIREMENTS

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

Minimum Regulatory Requirements:

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

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, By January 26, 2002, details of the reclamation sequence of the Belina Haul Road and the White Oak Complex coal pad and Sediment Pond 004A must be submitted to the Division

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

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.

Appendix 1-2 contains a letter from Milton A. Oman dated December 21, 1983. The letter confirm in a round-about way the agreed postmining land use of wildlife, recreation and grazing. The letter refers to the Belina portals of the Belina complex but fails to list the section were the portals are located. The letter lists Sections 13, 17, 18, and 19 but not section 30. The letter also states that the road to the mine site may be left. No mention about a road above the mine site as currently proposed. A road in that location did not exist at the time of this letter.

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). 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. As a stipulation to the permit, the Permittee must provide the following in accordance with:

> **R645-301-412, By January 26, 2002, the Permittee must remove all references to construct the 1200-foot section of road because the Oman's desire to construct it themselves or the lease agreement must be modified. Also by January 26, 2002, comments from the landowners concerning the postmining land use for Section 30 must be provided.**

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.

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.) tTheir 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 planed wildlife habitat enhancement measures are to spread around rocks and brush and other woody debris on the reclaimed area to provided 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 contour for surface coal mining operations in any area which is not a steep slope area.

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

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

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

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

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

Analysis:

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

> "Achieve the approximate original contour (AOC), except as provided in R645-301-553.500 through R645-301-553.540 (previously mined areas (PMA's), continuously mined areas (CMA's) and areas subject to the AOC provisions), R645-301-553.600 through R645-301-553.612 (PMA's and CMA's), R645-302-270 (non-mountaintop removal on steep slopes), R645-302-220 (mountaintop removal mining), R645-301-553.700 (thin overburden) and R645-301-553.800 (thick overburden)"

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

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

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

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

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

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

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

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

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

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

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

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

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

The premining contours are shown on several maps. Map R645-301-521.160 shows the premining contours and the locations of the pre and post mining cross sections. Map R645-301-

527 show the post mining contours. The pre mining contours differ from the post mining contours as follows:

- The flat areas used for coal storage and loading along with the surface facilities areas will be shaped into sloped areas that more closely resemble the surrounding areas.
- The sediment ponds will be removed.
- Whisky Creek will be restored.
- The roads will be removed, although a jeep trail will be established in part of the area.
- All highwalls will be eliminated.
- No spoil piles will exist after reclamation.

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

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

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

Findings:

The information 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, segregated, stored, and redistributed in accordance with regulatory requirements; the spoil shall be backfilled and graded on the area in accordance with the general requirements for backfilling and grading.

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

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

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

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

Previously mined areas

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

1.) All spoil generated by the remining operation and any other reasonably available spoil shall be used to backfill the area. Reasonably available spoil in the immediate vicinity of the remining operation shall be included within the permit area.

2.) The backfill shall be graded to a slope which is compatible with the approved postmining land use and which provides adequate drainage and long-term stability.

3.) Any highwall remnant shall be stable and not pose a hazard to the public health and safety or to the environment. The operator shall demonstrate, to the satisfaction of the Division, that the highwall remnant is stable.

4.) Spoil placed on the outslope during previous mining operations shall not be disturbed if such disturbances will cause instability of the remaining spoil or otherwise increase the hazard to the public health and safety or to the environment.

Backfilling and grading on steep slopes

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

Special provisions for steep slope mining

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

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

Analysis:

General

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.

Operations Areas (Plate 5-1C)	Reclamation Areas (Figure R-11) sq ft		acres
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 additional time from the 60 days or 1500 linear feet requirement of R645-301-553. 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 first three pits and 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 place 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 place in those areas.

Compaction requirements are listed in the reclamation plan (page R12-35). The material will be placed in lift and then compacted. Compaction of rocks is much different than compaction of soil. Clays are compacted by squeezing out excess water and granular soil are compacted by filling in void spaces. Spreading the rock fragments in lifts is what AML does to insure compaction on there projects. I believe that the compaction project is adequate for rock materials which is different than for soil.

The reclamation plan and timetable is as follows:

Prior to Surface Mining

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

During Surface Mining

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

Surface Mine Area After Mining

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

Loadout Area After Mining

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

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

Achieve the Approximate Original Contour

The Division has determined that the White Oak Mine Complex will achieve AOC see the AOC section of this TA for more details.

Eliminate All Highwalls

The location of the existing highwalls (portal face up areas) are shown on the mine maps, Plate 5-1 D Upper O' Connor Seam Mining and Underground Mine Map and Plate 5-1 E Lower O' Connor Seam Mining and Underground Mine Map. The existing highwalls will be removed as part of the surface mining operations. New highwalls will be created see Map R645-301-521.160, White Oak Complex X-Sections of Surface Mining Area Sheet A for the location of cross sections and Sheet B through D for the cross sections. The cross sections show that all

highwalls will be reclaimed.

Eliminate all Spoil Piles

On map R645-301-521.150, Belina Mine Site Surface Facilities as built one pre-surface mining spoil pile is shown. That spoil pile was from sediment clean out material that is defined by the Division as spoil. The spoil from that area will be used as backfill during reclamation.

On map R645-301-521.150, Whisky Creek Surface Mine Surface Facilities Sheet 4b of 4, the location of the temporary spoil storage area is shown. All that spoil will be used to as backfill. See the cut and fill calculations on Plate 5-1 C, White Oak Complex Projected Surface Mining Plan and Chapter 9 for more details of the temporary surface mine spoil pile area. The cross sections on Map R645-301-521.160, White Oak Complex X-Sections of Surface Mining Area Sheet A for the location of cross sections and Sheet B through D for the cross sections show that the spoil piles will be eliminated during final reclamation.

Eliminate Depressions

All depression with the exception of small pocks used for surface roughening will be removed during reclamation.

Slope Stability

The slope stability analysis and cross sections for the White Oak Mine Complex are found in Appendix R2, see Figure R-11 Sheet A and B. Five cross sections were used for slope stability, which are shown on Figure R-11 Sheet A, and B. The stability calculations for dry conditions are in Appendix R2. The results of the stability analysis are as follows:

- Cross-section A static safety factor 1.47
- Cross-section B static safety factor 1.34
- Cross section C static safety factor 1.38
- Cross section D static safety factor 1.33
- Cross section E static safety factor 1.54

On October 23, 2001, the Permittee faxed a copy of the stability calculations for partially saturated conditions. They are as follows:

- Cross-section A static safety factor 1.41
- Cross-section B static safety factor 1.31
- Cross section C static safety factor 1.34
- Cross section D static safety factor 1.30
- Cross section E static safety factor 1.50

The partial saturation slope stability analyses were done with the following assumptions:

- The backfill material will be mostly rock
- Adequate compaction will be accomplished by placing the material in lift and running equipment over the lifts.
- The rock materials will be large enough to provide good drainage so that positive pore pressures will only occur in the lower 15 feet of the fill.

Should the properties of the backfill material differ from those used in the slope stability analysis the Permittee must conduct additional slope stability studies to demonstrate that the reclaimed slopes will meet the 1.3 safety factor requirement of 1.3 (R645-301-553.130).

The minimum static safety factor is 1.3. All of the stability analyses 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 retention, 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 withR645-301-242.200 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.

Findings:

The information provided is considered adequate to meet the Backfilling and Grading requirements of the Regulations.

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).

Extreme surface roughening as described in the Division's reclamation manual (page R12 of 35) will be used on all slopes after the distribution of topsoil in accordance withR645-301-242.200 and R645-301-553.230 and R645-301-553.240.

In section 242 of the variable re-application of topsoil is explained, such that nine inches (+/- 25%, or 6.75 – 11.25 inches) of topsoil will be placed in areas "where pine trees are prevalent;" sixteen inches (+/- 25%, or 12 – 20 inches) of topsoil will be placed "in the aspen areas;" and a minimum thickness of six inches will be placed "in the shrub/grassland zones." These zones of topsoil replacement depth are identified in Table 242a Topsoil Redistribution and outlined on Map R645-301-242 Topsoil Redistribution.

A qualified soil scientist will be on site during the redistribution of topsoil. Stakes will be utilized to provide quality control of topsoil replacement (Section 242).

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." It is the Division's understanding after talking to Dave Miller of Lodestar Energy that these portions of the application apply to the ValCam Loadout and the haulroad and other areas where a large portion of the substitute topsoil is spoil that has been previously seeded and called throughout the plan, "Vegetation Supporting Material."

Findings:

Information provided in the proposed amendment is considered adequate to meet the Reclamation Topsoil requirements of the Regulations.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sections 701.5; 784.24; 780.33; 780.35; 780.37; 816.151; 817.150; 817.151.
R645-100-200.
R645-301 Sections 513; 521; 527; 534; 537; 732.

Minimum Regulatory Requirements:

Reclamation

A road not to be retained under an approved postmining land use shall be reclaimed in accordance with the approved reclamation plan as soon as practicable after it is no longer needed for mining and reclamation operations. This reclamation shall include: closing the road to traffic; removing all bridges and culverts unless approved as part of the postmining land use; removing or otherwise disposing of road-surfacing materials that are incompatible with the postmining land use and revegetation requirements; reshaping cut and fill slopes as necessary to be compatible with the postmining land use and to complement the natural drainage pattern of the surrounding terrain; protecting the natural drainage patterns by installing dikes or cross drains as necessary to control surface runoff and erosion; and, scarifying or ripping the roadbed, replacing topsoil or substitute material and revegetating disturbed surfaces.

Retention

A road to be retained for an approved postmining land use shall be classified as a primary road and designed constructed and maintained in accordance with the requirements for primary roads and in consideration of the approved postmining land use.

Analysis:

Reclamation

The only roads associated with the White Oak Mine Complex are the haul roads that are located within the pad area. New roads will be constructed as part of surface mining. The roads within the surface mine will be reclaimed as part of on going surface mining and reclamation.

The main haul road in the White Oak Mine Complex will remain after surface mining has been completed. That road is needed to access the site for reclamation. The truck loadout, coal storage area, sediment pond No. 004 and the reclamation of the lower section of Whisky Creek will be done after the surface mine has been reclaimed. The haul road in the White Oak Mine Complex will be reclaimed during the final phase of reclamation at the site.

Within the White Oak Mine Complex are some jeep trails that are used by the landowners. The landowners have requested that the Permittee restore the jeep trail within the White Oak Mine Complex that will be removed during surface mining. The Division does not consider the jeep trails to be roads because they are not engineered structures.

The Division will allow trails to remain after final reclamation if they are compatible with the postmining land use and will not result in erosion or water pollution. The jeep trails in the area are stable and do not cause environmental harm.

The Permittee referred to the trail as an ancillary road. The Division cannot allow an ancillary road to remain on site. R654-301-527.123 states that only a primary road can be retained as part of the postmining land use. The Permittee has two options the first is to submit engineering designs for the proposed road, the second is to refer to the road as a trail that will allow access to the site by high clearance offroad vehicles.

Retention

The Permittee does not plan to retain any engineered roads within the disturbed area boundaries. Within the White Oak mine complex the Permittee will backfill and grade the area such that the landowners will be able to drive a four-wheel drive high clearance vehicle on the site (a jeep trail will be left.) Access to the site will be available from wheel tracks and jeep trail from Boarding House Canyon. Since those access routes were in existence before the mine was established and only minimal up keep is needed the Division will not require the Permittee to reclaim those access routes. The Division does not consider those access routes to be roads that need to be designed.

Findings:

The information in the proposed significant revision is considered adequate to meet the reclamation Road System requirements of the Regulations.

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 will be designed with drop structures and pools/basins spaced at 50-foot intervals. The main channel will be a main channel minimum width of 12 – 16 inches, and overbank zones of 8 – 10 feet wide and 10 – 15 feet long. Drop structures will use rock ranging from 6-12 inch diameter, and logs 4-8 inch diameter. SEDCAD 4 calculations have been included as an appendix to provide added support for the sizing of the rock used in the relocated stream channel design. The designed-storm used was a 100 year- 6 hour event. Although SEDCAD 4 uses a model-design for a rip-rap channel, the characteristics used for rock sizing were adequately adapted because the actual channel design will incorporate slope-breaks into the design. These slope-breaks will come in the form of the drop structures spaced at 50-foot intervals. The rip-rap channel design, using the PADER method of Steep-Slope design, indicated the following rock-sizing: Dmin of 3-inch, D50 of 6-inch, and Dmax of 9-inch. Rocks larger than 9-inches and woody debris will be used in the drop structures. Any significant excess of fill material encountered will be used to reduce the slopes encountered in Section 2A.

The current stream has been characterized with an abundance of empirical data, and the proposed redesigned channel has been supported with SEDCAD 4 calculations and design

illustrations consisting of ladder drops, 1-foot drops, and vortex weirs found in Appendix R2. In Figure SRP-2 the Permittee has committed to making the following changes to the October 19, 2001 submittal: 1) the location of the highwall in the Relocated Stream Profile will be moved further upstream, 2) the graded spoils in the restored stream channel will be removed from the Transition X-Section to more accurately reflect the actual design.

Pages SRP-16 through SRP-17 describes in detail the construction and materials to be used in the reclamation of Whisky Creek. The cited pages provide the necessary detail for channel reconstruction using illustrations, photos, and modeling calculations (SEDCAD 4) from various appendixes within the MRP. The entire length of the restored channel will be lined with clay, armored with rock, and backfilled with native streambed material. Various drop structures, meanders, and overbank structures will also be incorporated throughout the channel based on the grade of the channel in the specific location. The types of features to be incorporated are based on empirical data collected from the original channel.

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 3 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 3 gallons per minute.

Sedimentation ponds

Within the White Oak Mine Complex there are two sediment ponds, Dugout D-1 and Pond 004A. As part of surface mining the Permittee will disturb the upper section of Whisky Creek. During reclamation of the surface mine the Permittee will restore the upper section of Whisky Creek and the drainage area. Once vegetation has been established Dugout D-1 will no longer be needed and will be removed.

Pond 004A will remain as long as the coal storage, loadout facilities and truck turn around are needed. When those facilities are no longer needed the Permittee will reclaim the site including the restoration of Whisky Creek (main culvert removal and channel restored.) The pond will be removed when no longer needed for sediment control.

The Permittee may choose to apply for a permit to mine coal that is adjacent to the White Oak Mine Complex. If so they will need to retain the loadout facilities, including the pond. Once all mining activities in the area cease reclamation of the loadout facilities will begin.

Findings:

The information in the proposed significant revision is considered adequate to meet the Hydrologic Reclamation Plan Information requirements of the regulations. As a stipulation to the permit, the Permittee must provide the following in accordance with:

R645-301-731.120, By November 26, 2001, the Permittee must revise Figure SRP-2 to include: 1) the location of the highwall in the Relocated Stream Profile that will be moved further upstream, and 2) the graded spoils in the restored stream channel that will be removed from the Transition X-Section to more accurately reflect the actual design.

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.

Variances 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 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 access of 3 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.

REVEGETATION

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 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 will incorporate one to two tons per acre noxious weed free alfalfa hay when roughening the topsoil. The Permittee commits to after seeding:

- Spreading straw at the rate of one tons per acre
- Gluing straw to the soil surface with 500 pounds per acre of wood fiber mulch and 80 pounds per acre tackifier (page R-234).

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.

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. Mr. Oman in a letter dated December 21, 1983 requested that more Aspen than "evergreens" be planted because of greater forage production with Aspen.

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 are shown on Drawing R645-301-323.100. The success standards and reference areas meet the minimum requirements however it is highly recommended that the Permittee have a qualified person in revegetation

review these commitments since the site is being reclaimed with the surface contour mining operation.

Baseline information was obtained on the upper Whisky Creek area in August 2001 (Appendix 3-1). The success standard for the reclaimed upper Whisky Creek is that a minimum of 18 percent of the relocated stream channel to meet the cover and diveristy standards of the riparian community measured in the JBR study in Appendix 3-1 (Page R-25). The remaining 82 percent of the length of relocated upper Whisky Creek will meet the success standard of the sagebrush-grass or grass-forb-elderberry reference area cover and shrub density standards.

To judge whether vegetation is adequate to control erosion, the applicant will place erosion pins on slopes at the time of reseeding (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.

Findings:

Information provided in the application meets the minimum Revegetation requirement of the regulations.

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. The plan commits to concave and complex slope shapes in reclamation (Page R11 of 35).

The Permittee has stated that the saturation of the fill will be minimized due to the seam dip and the gradation of the spoil placed against the highwall. A partial saturation slope stability analysis is included in Appendix R2.

The reclamation plan indicates that surface roughness will be important in retaining moisture and reduce erosion. Topsoil and certified weed free alfalfa hay (1 to 2 tons per acre) will be incorporated into the slope by extreme surface roughening (page R12 and R23 of 35). After seeding, additional straw (1 ton/acre) and wood fiber mulch (500 lbs/acre) with tackifier (80 lbs/ac) will be applied (also page R12 of 35).

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 will use 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 is 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 . (page R11 of 35). 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 MRP does not hint at what this surface bonding agent is unless it refers to the tackifier.

The Permittee commits to the following:

- 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:

The information provided in the application meets the minimum Stabilization of Surface Areas requirements of the regulations.

CESSATION OF OPERATIONS

Regulatory Reference: 30 CFR Sections 816.131; 816.132; 817.131; 817.132.
R645-301 Sections 515; 541.

Minimum Regulatory Requirements:

Each person who conducts mining activities shall effectively support and maintain all surface access openings to underground operations, and secure surface facilities in areas in which there are no current operations, but operations are to be resumed under an approved permit. Temporary abandonment shall not relieve a person of his or her obligation to comply with any provisions of the approved permit.

Before temporary cessation of mining and reclamation operations for a period of 30 days or more, or as soon as it is known that a temporary cessation will extend beyond 30 days, each person who conducts underground mining activities shall submit to the Division a notice of intention to cease or abandon operations. This notice shall include a statement of the exact number of surface acres and the horizontal and vertical extent of subsurface strata which have been in the permit area prior to cessation or abandonment, the extent and kind of surface area reclamation which will have been accomplished, and identification of the backfilling, regrading, revegetation, environmental monitoring, underground opening closures, and water-treatment activities that will continue during the temporary cessation.

The person who conducts underground mining activities shall close or backfill or otherwise permanently reclaim all affected areas, in accordance with this Chapter and according to the permit approved by the Division.

All surface equipment, structures, or other facilities not required for continued underground mining activities and monitoring, unless approved as suitable for the postmining land use or environmental monitoring, shall be removed and the affected lands reclaimed.

Analysis:

The Permittee committed in the MRP to meet the requirements of R645-301-515.300.

Findings:

The requirements of this section of the regulations are considered adequate in regard to the proposed permit changes for the addition of surface mining.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Regulatory Reference: 30 CFR Sections 780.14 ; 784.23.
R645-301 Sections 323; 512; 521; 542; 632; 731.

Minimum Regulatory Requirements:

Each application shall contain maps, plans, and cross sections which show the reclamation activities to be conducted, the lands to be affected throughout the operation, and any change in a facility or feature to be caused by the proposed operations, if the facility or feature was shown and described as an existing structure.

The permit application must include as part of the reclamation plan information, the following maps, plans and cross sections:

Affected area boundary maps

The boundaries of all areas proposed to be affected over the estimated total life of all mining activities and reclamation activities, with a description of size, sequence, and timing of phased reclamation activities and treatments. All maps and cross sections used for reclamation design purposes shall clearly show the affected and permit area boundaries in reference to the reclamation work being accomplished.

Bonded area map

The Permittee shall identify the initial and successive areas or increments for bonding on the permit application map and shall specify the bond amount to be provided for each area or increment. The bond or bonds shall cover the entire permit area, or an identified increment of land within the permit area upon which the operator will initiate and conduct surface coal mining and reclamation operations during the initial term of the permit. As surface coal mining and reclamation operations on succeeding increments are initiated and conducted within the permit area, the Permittee shall file with the Division an additional bond or bonds to cover such increments. Independent increments shall be of sufficient size and configuration to provide for efficient reclamation operations should reclamation by the Division become necessary.

Reclamation backfilling and grading maps

Contour maps and cross sections to adequately show detail and design for backfilling and grading operations during reclamation. Where possible, cross sections shall include profiles of the pre-mining, operations, and post-reclamation topography. Contour maps shall be at a suitable scale and contour interval so as to adequately detail the final surface configuration. When used in the formulation of mass balance calculations, cross sections shall be at adequate scale and intervals to support the mass balance calculations. Mass balance calculations derived from contour information must demonstrate that map scale and contour accuracy are adequate to support the methods used in such earthwork calculations. Detailed cross sections shall be provided when required to accurately depict reclamation designs which include, but are not limited to: terracing and benching, retained roads, highwall

remnants, slopes requiring geotechnical analysis, and embankments of permanent impoundments.

Reclamation facilities maps

Location of each facility that will remain on the proposed permit area as a permanent feature, after the completion of underground mining activities. Location and final disposition of each sedimentation pond, permanent water impoundment, coal processing waste bank, and coal processing water dam and embankment, disposal areas for underground development waste and excess spoil, and water treatment and air pollution control facilities within the proposed permit area to be used in conjunction with phased reclamation activities or to remain as part of reclamation.

Final surface configuration maps

Sufficient slope measurements to adequately delineate the final surface configuration of the area affected by surface operations and facilities, measured and recorded according to the following: each measurement shall consist of an angle of inclination along the prevailing slope extending 100 linear feet above and below or beyond the coal outcrop or the area disturbed or, where this is impractical, at locations specified by the Division; where the area has been previously mined, the measurements shall extend at least 100 feet beyond the limits of mining disturbances, or any other distance determined by the Division to be representative of the post-reclamation configuration of the land; and, slope measurements shall take into account variations in slope, to provide accurate representation of the range of slopes and reflect geomorphic differences of the area disturbed through reclamation activities.

Reclamation monitoring and sampling location maps

Elevations and locations of test borings and core samplings. Elevations and locations of monitoring stations used to gather data on water quality and quantity, subsidence, fish and wildlife, and air quality, if required, to demonstrate reclamation success.

Reclamation surface and subsurface manmade features maps

The location of all buildings in and within 1,000 feet of the proposed permit area, with identification of the current or proposed use of the buildings at the time of final reclamation. The location of surface and subsurface manmade features within, passing through, or passing over the proposed permit area, including, but not limited to, major electric transmission lines, pipelines, fences, and agricultural drainage tile fields. Each public road located in or within 100 feet of the proposed permit area and all roads within the permit area which are to be left as part of the post-mining land use. Buildings, utility corridors, and facilities to be used in conjunction with reclamation or to remain for final reclamation.

Reclamation treatments maps

The location and boundaries of any proposed areas for reclamation treatments including but not limited to: location, extent and depth of materials used for resoiling; location, extent and types of treatments for revegetation including soil preparation, soil amendments, mulching, seeding, variations in seed mixtures, and other revegetation treatments. Each water diversion, collection, conveyance, treatment, storage and discharge facility to be used during reclamation. Each facility to be used to protect and enhance fish and wildlife related environmental values. other treatments or applications which are specifically designed or required as part of phased or final reclamation activity.

Certification Requirements.

Cross sections, maps, and plans required to show the design, location, elevation, or horizontal or vertical extent of the land surface or of a structure or facility used to conduct mining and reclamation operations shall be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, a professional geologist, or in any State which authorizes land surveyors to prepare and certify such cross sections, maps, and plans, a qualified, registered, professional land surveyor, with assistance from experts in related fields such as landscape architecture.

Each detailed design plan for an impounding structure that meets or exceeds the size or other criteria of the Mine Safety and Health Administration, 30 CFR Section 77.216(a) shall: be prepared by, or under the direction of, and certified by a qualified registered professional engineer with assistance from experts in related fields such as geology, land surveying, and landscape architecture; include any geotechnical investigation, design, and construction requirements for the structure; describe the operation and maintenance requirements for each structure; and, describe the timetable and plans to remove each structure, if appropriate.

Each detailed design plan for an impounding structure that does not meet the size or other criteria of 30 CFR Section 77.216(a) shall: be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, or in any State which authorizes land surveyors to prepare and certify such plans, a qualified, registered, professional land surveyor, except that all coal processing waste dams and embankments shall be certified by a qualified, registered, professional engineer; include any design and construction requirements for the structure, including any required geotechnical information; describe the operation and maintenance requirements for each structure; and, describe the timetable and plans to remove each structure, if appropriate.

Analysis:

Affected area boundary maps

The Division usually considers that the permit boundaries to be the maximum extent of the affected areas. The affected areas within the permit area include underground workings and areas of surface disturbance. Drawing R645-301-100, Permit Area Base Map, shows the permit area.

Plate 5-1 A, White Oak Mine No. 2 and Plate 5-1 B, White Oak Mine No. 1 shows the location of the underground workings. The maps are dated as being updated on February 4, 2000 and were incorporated in the MRP on March 3, 2000.

The mine facilities and mine workings maps show the areas within the permit area that are affected by mining. R645-301-527 sheets 1-11 and show the disturbed area boundaries for the Valcam loadout, haul road and office complex.

Map R645-301-232-100, Post Reclamation, shows the disturbed area boundaries at the White Oak mine site. The Permittee does not propose to change the disturbed area boundaries as a result of surface mining or reclamation.

Bonded area map

The Division usually considers that the disturbed areas are the bonded areas. The disturbed area boundary map is shown on several maps including Map R645-301-527 Sheet 13.

Reclamation backfilling and grading maps

Drawing R645-301-521.160 shows the location of the pre surface mining and post surface mining cross section. Map R645-301-527 Sheet 13 shows the postmining contours within the disturbed area boundaries.

Reclamation facilities maps

The Permittee does not propose to leave any facilities at the White Oak mine site with the exception of the French drains. French drains will only be left if the Permittee encounters seeps and springs that have flows greater than 3 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 as required by R645-301-521.152.

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 considered adequate for the Division to evaluate the reclamation plan. However, final surface configuration maps with contours that extending 100 outside the disturbed area boundaries will be required as a stipulation of the permit. As a stipulation to the permit, the Permittee must provide the following in accordance with:

R645-301-542.300 and R645-301-521.152, By November 26, 2001 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 and bonded separately with the approval of the Division. Such areas shall be limited in extent and not constitute a scattered, intermittent, or checkerboard pattern of failure. Access to the separated areas for remedial work may be included in the area under extended liability if deemed necessary by the Division.

The bond liability of the Permittee shall include only those actions which he or she is obligated to take under the permit, including completion of the reclamation plan, so that the land will be capable of supporting the postmining land use approved. Implementation of an alternative postmining land use which is beyond the control of the Permittee, need not be covered by the bond. Bond liability for prime farmland shall be specific to include productivity requirements.

Determination of bond amount

The amount of the bond required for each bonded area shall: be determined by the Division; depend upon the requirements of the approved permit and reclamation plan; reflect the probable difficulty of reclamation, giving consideration to such factors as topography, geology, hydrology, and revegetation potential; and, be based on, but not limited to, the estimated cost submitted by the permit applicant.

The amount of the bond shall be sufficient to assure the completion of the reclamation plan if the work has to be performed by the Division in the event of forfeiture, and in no case shall the total bond initially posted for the entire area under 1 permit be less than $10,000.

An operator's financial responsibility for repairing material damage resulting from subsidence may be satisfied by the liability insurance policy required in this section.

Terms and conditions for liability insurance

The Division shall require the applicant to submit as part of its permit application a certificate issued by an insurance company authorized to do business in the United States certifying that the applicant has a public liability insurance policy in force for the surface coal mining and reclamation operations for which the permit is sought. Such policy shall provide for personal injury and property damage protection in an amount adequate to compensate any persons injured or property damaged as a result of the surface coal mining and reclamation operations, including the use of explosives, and who are entitled to compensation under the applicable provisions of State law. Minimum insurance coverage for bodily injury and property damage shall be $300,000 for each occurrence and $500,000 aggregate.

The policy shall be maintained in full force during the life of the permit or any renewal thereof and the liability period necessary to complete all reclamation operations under this Chapter.

The policy shall include a rider requiring that the insurer notify the Division whenever substantive changes are made in the policy including any termination or failure to renew.

The Division may accept from the applicant, in lieu of a certificate for a public liability insurance policy, satisfactory evidence from the applicant that it satisfies applicable State self-insurance requirements approved as part of the regulatory program and the requirements of this section.

Analysis:

Determination of bond amount

The Division and the Permittee developed the reclamation cost estimate. They agreed that the reclamation bond for the White Oak Mine should be no less than $3,832,000.

Two assumptions that were used to make the reclamation cost estimates were as follows:

- The Permittee will not have more than 306,000 LCY of spoil that are either in the temporary spoil pile or in any pit or other location at the mine than has not been placed in the approximate location for final grading.
- The Permittee establishes the approximate location of the upper portion of Whisky Creek during rough backfilling and grading.

The Permittee has agreed to accept those two assumptions as permit conditions for the surface mining.

Terms and conditions for liability insurance

The White Oak mine has an existing liability insurance policy that the Division considers adequate. No additional insurance will be needed for the surface mining operations.

Findings:

The requirements of this section of the regulations are considered adequate in regard to the proposed permit changes for the addition of surface mining.

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:

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 has found 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 that are downstream of and outside of the permit area. A Cumulative Hydologic Impact Assessment was revised in 1996 and combines the White Oak and Skyline mines. The document was updated in October 2001 to reflect the anticipated effects on the watershed based on the current significant revision. The combination of limited anticipated impacts to Whisky Creek, and Whisky Creeks' limited contribution to the Mud Creek drainage basin result in a minimal anticipated Cumulative Hydrologic Impact to the Mud Creek watershed.

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, total suspended solids, total iron, and oil & grease 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 (groundwater flows R645-302-323.322; surface flows (R645-302-323.323 and changes in surface or groundwater systems (R645-302-323.324). In addition to the UPDES discharge points, offsite impacts to surface flows leaving the White Oak Complex area are monitored at Surface Sample site VC-5 which is located at the base of Whisky

Creek at it enters Eccles Creek.

Findings:

The information provided is adequate to meet the requirements for Permits for Special Categories of Mining as required by the Regulations.

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 has conducted three rounds of review each round requesting additional information of the Permittee to be assured that mining will be conducted in accordance with the requirements of R645-302-234 Backfilling and Grading.

Findings:

The information provided is adequate to meet the requirements for Steep Slope Mining as required by the Regulations.

Michael O. Leavitt
Governor
Kathleen Clarke
Executive Director
Lowell P. Braxton
Division Director

State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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801-538-5340
801-359-3940 (Fax)
801-538-7223 (TDD)

October 31, 2001

TO: Lowell P. Braxton, Director

THRU: Mary Ann Wright, Associate Director, Mining

FROM: Pamela Grubaugh-Littig, Permit Supervisor

RE: Coal Regulatory Program 2001 Third Quarter Status Report - Permitting and Compliance and Administrative

PERMITTING

New Mines

There are no permit applications for a new mine under review.

Significant Revisions and Incidental Boundary Changes (IBC)

Lila Canyon Tract - Horse Canyon Mine

The application for the significant revision to the Horse Canyon Mine was received on September 8, 1998. This application was determined incomplete on November 6, 1998 and returned to the applicant. The applicant resubmitted this application on December 21, 1998. This application was determined administratively complete on February 26, 1999.

A concern letter about loss of surface water was received on March 30, 1999 from Josiah K. Eardley in response to the publication notice. The technical deficiency was sent to UtahAmerican Energy, Inc. on May 27, 1999. The Division received a response on July 27, 1999 and sent a deficiency on October 19, 1999. A response was received on November 29, 1999 and December 10, 1999 and was the review was sent on February 24, 2000. The operator's response was received on March 20, 2000. Another deficiency response was sent on June 29, 2000. A response was received on September 15, 2000 and the fifth review was sent on November 20, 2000.

A technical meeting with UtahAmerican representative, Clyde Borrell and the resident agent, Mel Coonrod was held with Division staff on December 19, 2000 to detail all of the deficiencies.

The record of decision for the environmental assessment for the road and facilities was issued by the BLM in November 2000 and appealed by the Southern Utah Wilderness Alliance in December 2000. No action has been taken on this by the IBLA to date.

The applicant responded on January 19, 2001 and the Division sent the sixth deficiency on March 9, 2001. Responses were received through May 24, 2001. All findings were made and the revised permit was issued on July 27, 2001.

Southern Utah Wilderness Alliance (SUWA) filed an objection to the permit on September 4, 2001 with the Board of Oil Gas, and Mining. The type of hearing and the administrative record was heard during the September 26, 2001 Board hearing and October Board Hearing. It was ordered by the Board that this was an appellate hearing. The merits of the case will be heard on December 4, 2001.

Wild Horse Ridge Tract - Bear Canyon Mine

The Bear Canyon Mine, Wild Horse Ridge Addition was submitted on December 18, 1998. The ACR was sent on February 19, 1999 and the response was received on September 28, 1999. This was determined administratively complete on November 2, 1999. The technical review was sent January 24, 2000. Two protests were received (Castle Valley Special Service District and Huntington Cleveland). An informal conference was held on February 22, 2000. The Division Director signed his decision for this conference on March 22, 2000. A response from Co-Op Mining Company was submitted on May 8, 2000.

The Division review was sent on August 2, 2000 and the Division received the response from Co-Op Mining Company on January 24, 2001. A revised permit was issued on July 3, 2001. The permit was conditioned "prior to mining a Mining Plan Approval must be obtained."

Surface Mining - White Oak Mine

This application to mine the barrier pillars on fee coal through surface mining methods was submitted on February 2, 2001 and determined administratively complete on March 19, 2001. The Division issued the deficiency on July 13, 2001 and the response was received on September 11, 2001. A permit was issued on October 26, 2001 with nine conditions.

Michael O. Leavitt
Governor
Kathleen Clarke
Executive Director
Lowell P. Braxton
Division Director

State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
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801-538-7223 (TDD)

November 13, 2001

CERTIFIED MAIL
7099 3400 0016 8895 9970

Dave Miller, Resident Agent
Lodestar Energy, Inc.
HC 35 Box 370
Helper, Utah 84526

Re: **Corrected Letter,** Bond Replacement Required, , Lodestar Energy, Inc., White Oak Mine Complex, C/007/001, Horizon Mine, C/007/020, Outgoing File

Dear Mr. Miller:

Lodestar Energy, Inc. must maintain surety for the Horizon Mine and White Oak Mine Complex as required by the provisions of UCA 40-8-14 and rules enacted thereunder. The Supreme Court of the State of New York declared Frontier insolvent on October 15, 2001. In accordance with Utah Regulation R645-301-840.520, Lodestar Energy, Inc., must replace the two Frontier Insurance Company bonds within 60 days of receipt of this letter, but no later than COB January 7, 2002. The White Oak Mine bond, Frontier Insurance Company Bond #143715, in the amount of $3,832,000; and the Horizon Mine bond, Frontier Insurance Company Bond #143714, in the amount of $342,000, require replacement.

If replacement surety is not posted within this time frame Lodestar must cease coal extraction and comply with the provisions of R645-301-541.100 through R645-301-541.400 as applicable and immediately begin to conduct reclamation operations in accordance with the reclamation plan.

If you have any questions, please call me.

Sincerely,

Mary Ann Wright
Associate Director, Mining

vs
cc: Price Field Office
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C/007/001 ok

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
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Lowell P. Braxton
Division Director

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November 8, 2001

CERTIFIED MAIL
7099 3400 0016 8895 9994

Dave Miller, Resident Agent
Lodestar Energy, Inc.
HC 35 Box 370
Helper, Utah 84526

Re: Bond Replacement Required, Lodestar Energy, Inc., White Oak Mine Complex, C/007/001, Horizon Mine, C/007/020, Outgoing File

Dear Mr. Miller:

Lodestar Energy, Inc. must maintain surety for the Horizon Mine and White Oak Mine Complex as required by the provisions of UCA 40-8-14 and rules enacted thereunder. The Supreme Court of the State of New York declared Frontier insolvent on October 15, 2001. In accordance with Utah Regulation R645-301-840.520, Lodestar Energy, Inc., must replace the two Frontier Insurance Company bonds within 60 days of receipt of this letter, but no later than COB January 7, 2002. The White Oak Mine bond, Frontier Insurance Company Bond #143715, in the amount of $4,292,000; and the Horizon Mine bond, Frontier Insurance Company Bond #143714, in the amount of $711,000, require replacement.

If replacement surety is not posted within 60 days, Lodestar must cease coal extraction and comply with the provisions of R645-301-541.100 through R645-301-541.400 as applicable and immediately begin to conduct reclamation operations in accordance with the reclamation plan.

If you have any questions, please call me.

Sincerely,

Mary Ann Wright
Associate Director, Mining

vs
cc: Price Field Office
P:\GROUPS\COAL\WP\007001.WO\FINAL\pgllodestar.doc

OK

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor

Kathleen Clarke
Executive Director

Lowell P. Braxton
Division Director

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801-359-3940 (Fax)
801-538-7223 (TDD)

November 6, 2001

CERITFIED MAIL
7099 3400 0016 8896 0044

Dave Miller, Resident Agent
Lodestar Energy, Inc
H.C.35 Box 370
Helper, Utah 84527

Re: Preblast Survey Required, Lodestar Energy, Inc., White Oak Mine, C/007/001, Outgoing File

Dear Mr. Miller:

As allowed by R645-301-524.300, the owner of a structure within one-half mile of any part of the permit area may request a preblasting survey. On October 18, 2001, the Division received a request, made by Questar Pipeline Company, for a preblast survey of their pipeline facilities near the White Oak Mine Complex (see attached letter).

In accordance with the above regulations, Lodestar Energy Inc. must promptly conduct a preblasting survey of the natural gas pipelines owned and operated by Questar and prepare a written report of the survey. The written report will be signed by the person who conducted the survey and copies of the report must be promptly provided to the Division and to Questar. If Questar disagrees with the contents and/or recommendations contained in the report they may submit to both Lodestar and the Division a detailed description of the specific areas of disagreement. All surveys will need to be conducted and any disagreement will need to be resolved prior to conducting blasting at the White Oak Complex.

Please call me (801-538-5306) or Daron R. Haddock (801-538-5325) if you have any questions.

Sincerely,

Mary Ann Wright
Associate Director, Mining

vs
Enclosure
David A. Ingleby, Questar
Daron Haddock
O:\007001.WO\DRAFT\preblastltr.doc

QUESTAR

Qu *ar Regulated Services Co.
Q. .r Gas Co. • Questar Pipeline Co.
1140 West 200 South
P.O. Box 45360
Salt Lake City, UT 84145-0360
Tel 801 324 5555

David A. Ingleby, Supervisor
Property & Right of Way - Fax (801) 324-3803

Incoming
C/007/001
SR01A
CC: Daron ✓

October 17, 2001

Utah Coal Program
Utah Division of Oil, Gas and Mining
1594 West North Temple
Suite 1210
Salt Lake City, UT 84114-5801

Re: Lodestar Energy, Inc. - Permit C/007/001

Ladies and Gentlemen:

Questar Pipeline Company is in receipt of a letter from Lodestar Energy, Inc. dated September 21, 2001 advising of blasting which will occur near natural gas pipelines owned and operated by Questar. As outlined in the September 21, 2001 letter, Questar Pipeline requests a pre-blast survey be held to discuss the proposal. Please contact me at (801) 324-3151 to schedule the meeting.

Sincerely

David A. Ingleby

CC: Lodestar Energy, Inc.
Mountain Operatins
HC 35 Box 370
Helper, UT 84526

RECEIVED
2001
DIVISION OF
OIL, GAS AND MINING

000358

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Kathleen Clarke
Executive Director
Lowell P. Braxton
Division Director

1594 West North Temple, Suite 1210
PO Box 145801
Salt Lake City, Utah 84114-5801
801-538-5340
801-359-3940 (Fax)
801-538-7223 (TDD)

November 6, 2001

David Miller, Resident Agent
Lodestar Energy Inc.
HC 35 Box 370
Helper, Utah 84526

Re: Permit Revision, Lodestar Energy Inc., White Oak Mine, C/007/001-SR01A, Outgoing File

Dear Mr. Miller:

The above-referenced was approved on October 26, 2001. Enclosed is a stamped incorporated copy for your copy of the Mining and Reclamation Plan.

If you have any question, please feel free to call me at (801) 538-5268

Sincerely,

Pamela Grubaugh-Littig
Permit Supervisor

db
Enclosure
cc: Joe Wilcox, OSM
Richard Manus, BLM
Elaine Zieroth, USFS (2)
Mark Page, Water Rights w/o
Dave Ariotti, DEQ w/o
Derris Jones, DWR w/o
Price Field Office
O:\007001.WO\FINAL\TranCC.doc

ok

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Kathleen Clarke
Executive Director
Lowell P. Braxton
Division Director

1594 West North Temple, Suite 1210
PO Box 145801
Salt Lake City, Utah 84114-5801
801-538-5340
801-359-3940 (Fax)
801-538-7223 (TDD)

October 26, 2001

Dave Miller, Resident Agent
Lodestar Energy, Inc.
HC 35 Box 370
Helper, Utah 84526

Re: Decision Document and Revised Permit (Whisky Creek Contour Mining), Lodestar Energy Inc., White Oak Mine, C/007/001-SR01A, Outgoing File

Dear Mr. Miller:

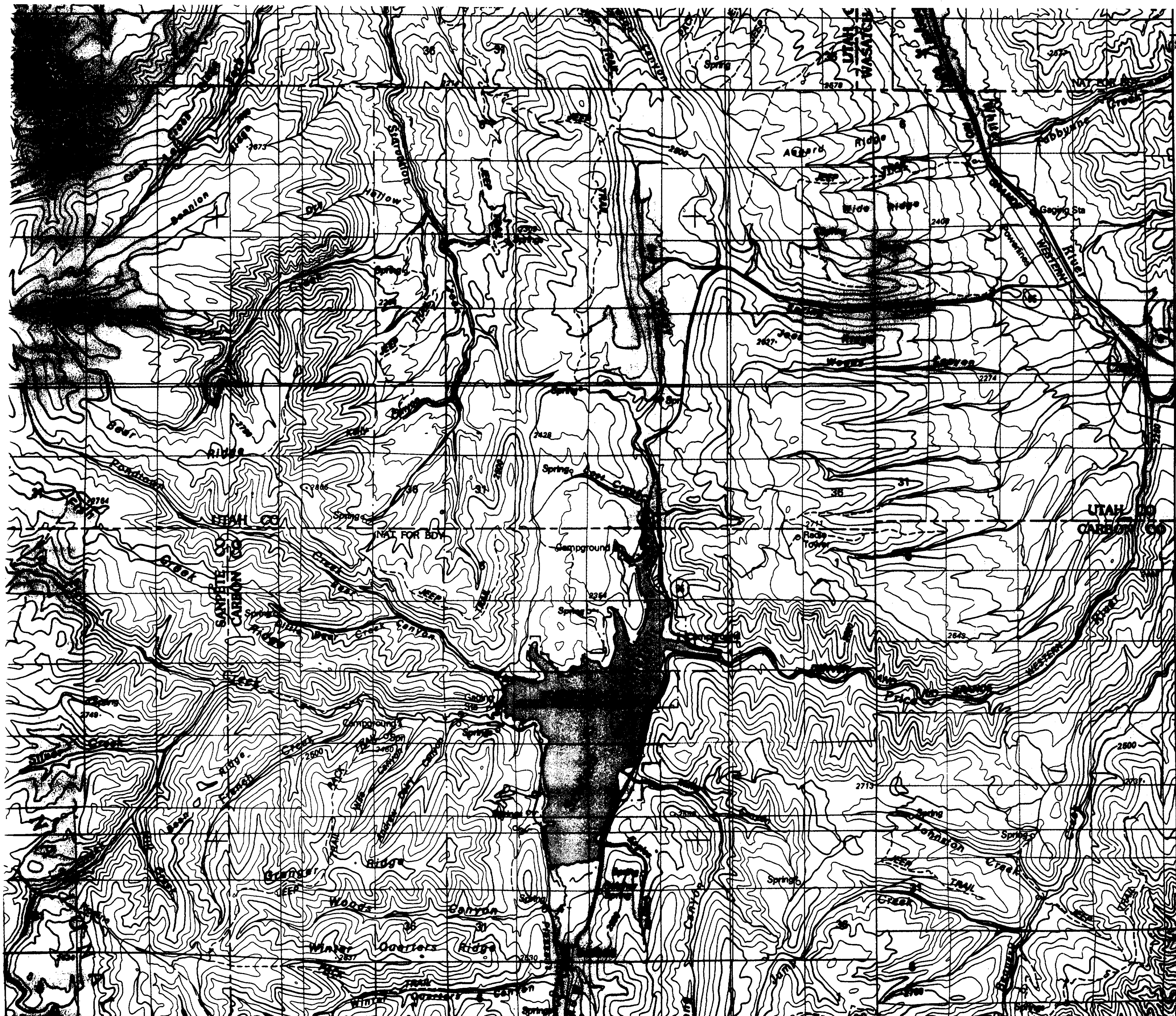
The Division has processed the Whisky Creek Contour Mining of Barrier Coal (fee coal) significant revision to the White Oak Mine, including all materials submitted as of this date and has determined the application to be complete and adequate for issuance of a revised permit. The Decision Document and permit are enclosed. Please note the nine special conditions in Attachment A. The conditions have different time frames with which to comply, some as short as five days. Please have both copies of the permit signed by an authorized representative and return one to the Division.

If you have any questions, please call me.

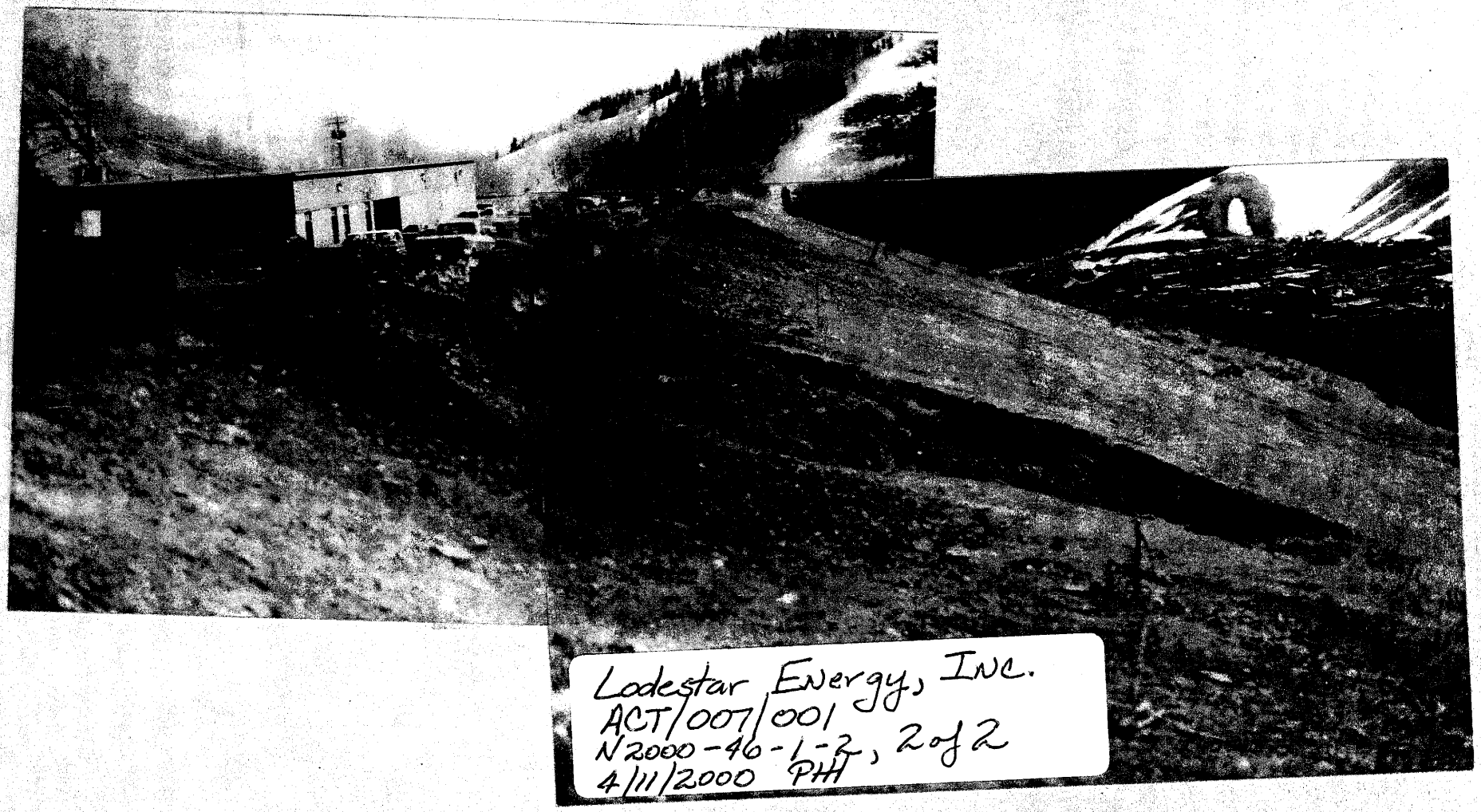
Sincerely,

for Lowell P. Braxton
Director

Enclosures: Decision Document, 2 permits
cc: James Kohler, BLM w/o
David Levanger, CC Planning & Zoning w/o
Price Field Office
O:\007001.WO\FINAL\AppSR01A.doc

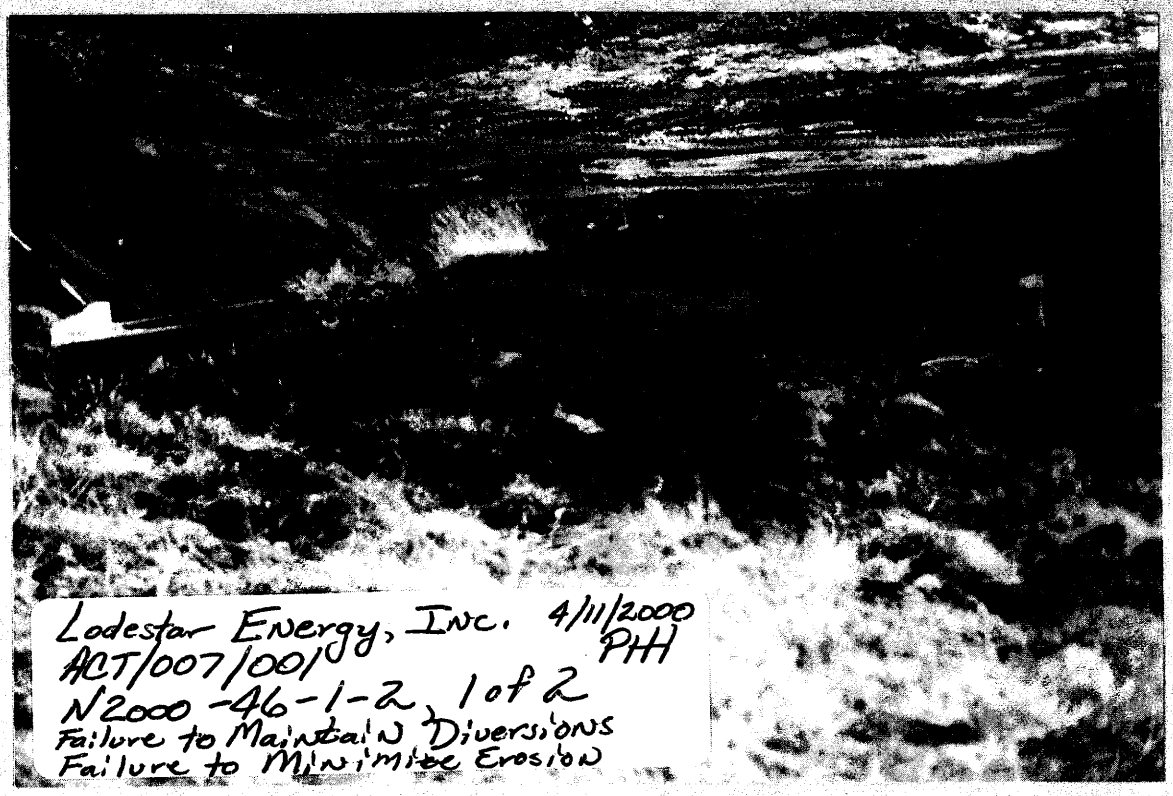

UTAH CO
WASATCH CO
NAT FOR BDY
Spring
Ashpard Ridge
Wide Ridge
Gaging Sta
Powerlines
WESTERN
River
Jess Ridge
Wages Canyon
2274
2627
2409
Starvation
Hollow
Bennion
Ridge
2673
Bear Ridge
Pondtown
Springs
2428
2866
36
31
UTAH CO
CARBON CO
SANPETE CO
CARBON CO
Campground
Radio Tower
2711
2354
Little Bear Creek Canyon
Creek
JEEP
TRAIL
Price
2643
2500
2713
2737
Johnson Creek
TRAIL
Spring
Campground
French Creek
Ridge
2600
Granger Ridge
Woods Canyon
Winter Quarters Ridge
Winter Quarters Canyon
2837
2530
PACK
Long Canyon
Gooseberry
Springs
2958
2750
2847
Eccles Canyon
Campground
2765
2787
Corral
TRAIL
Trail
Pipeline
2280
GORDON CREEK WILDLIFE MANAGEMENT AREA
Telephone
Canyon
Bench
2225
45'
T 12 S
525
575
550

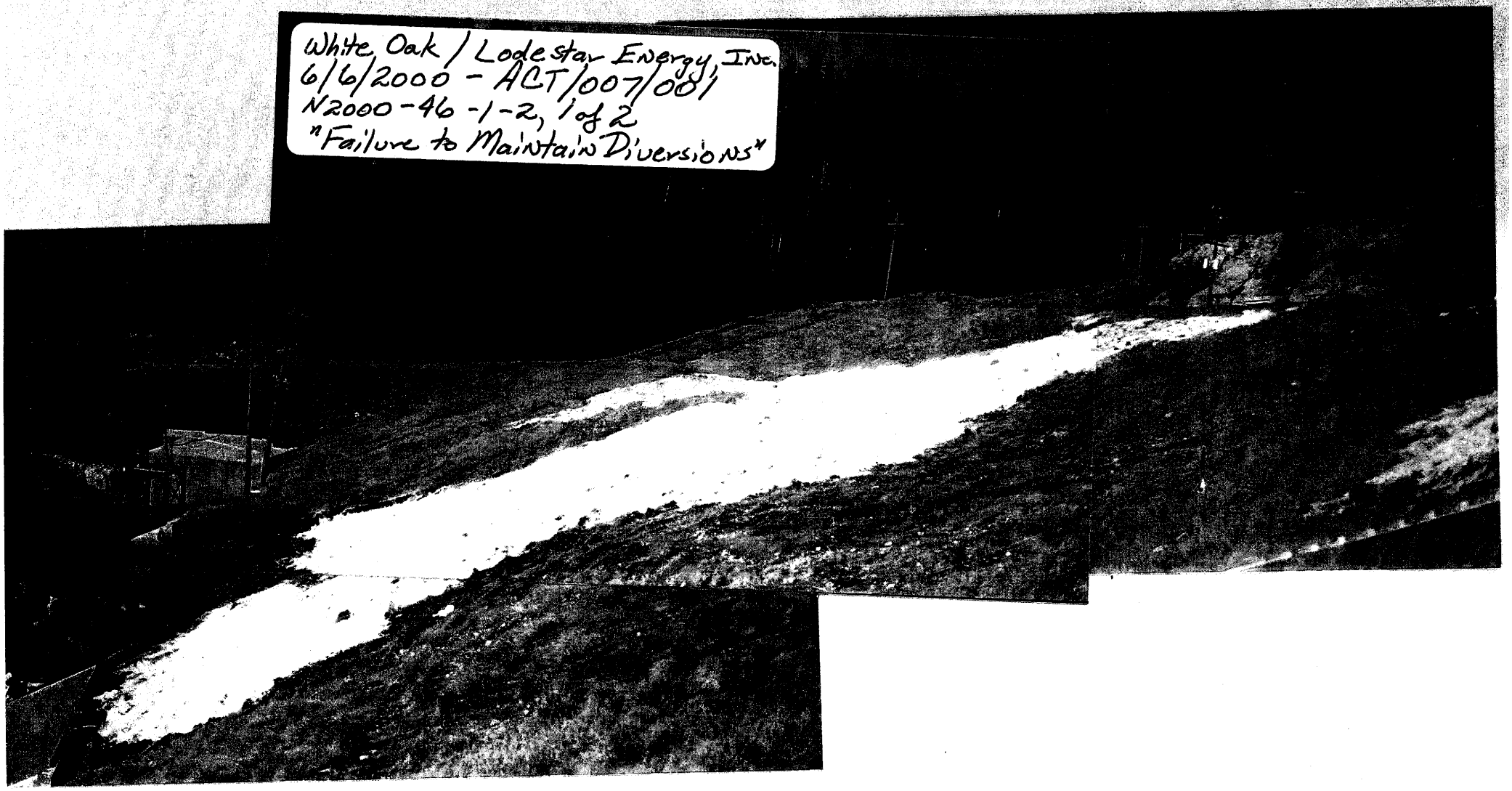
000361

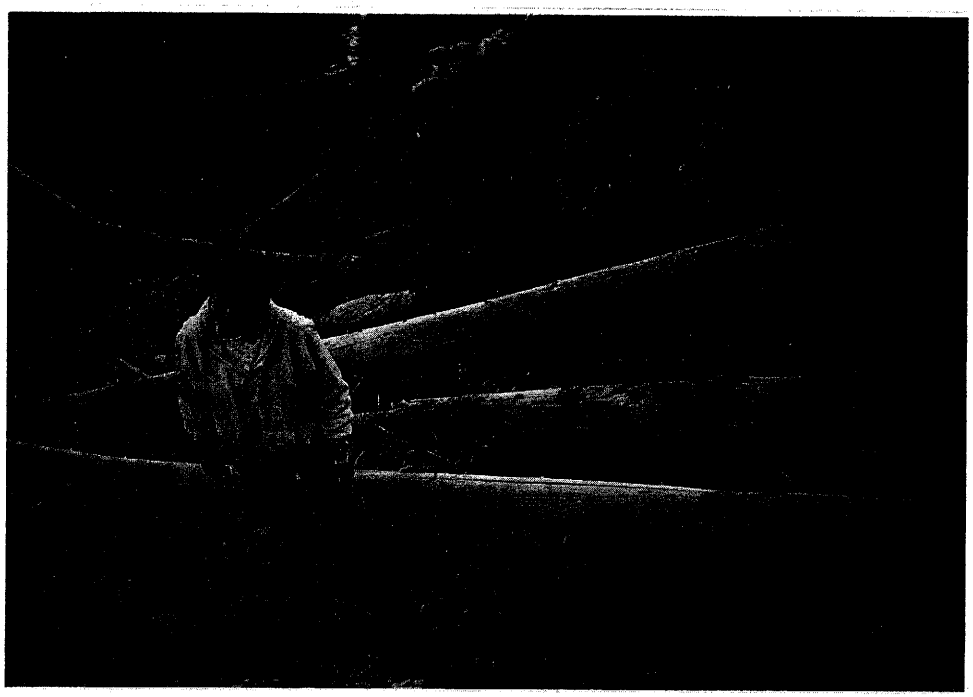


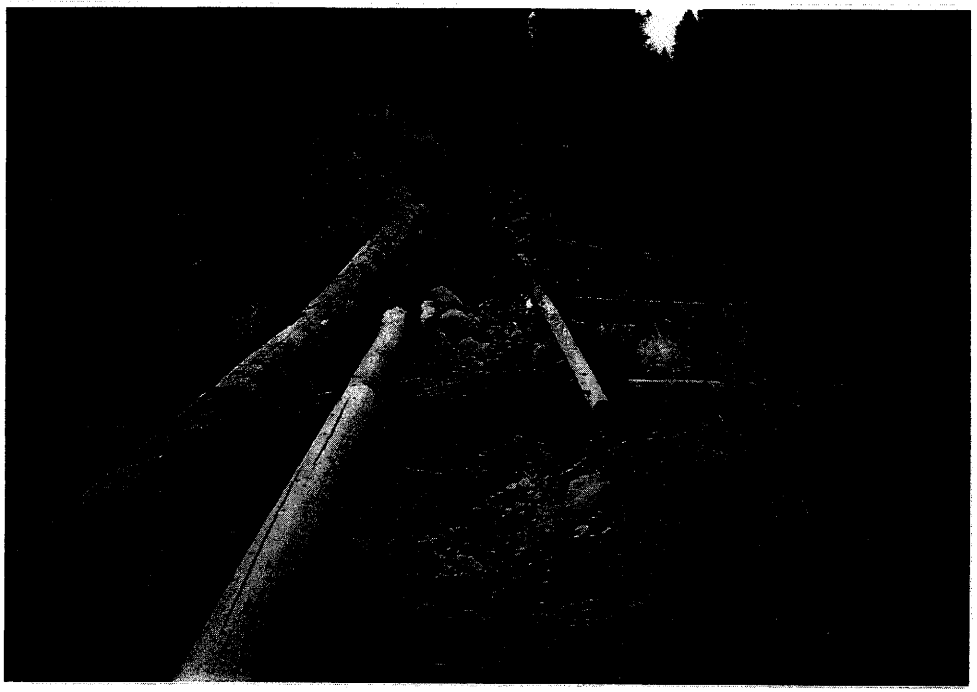
000362

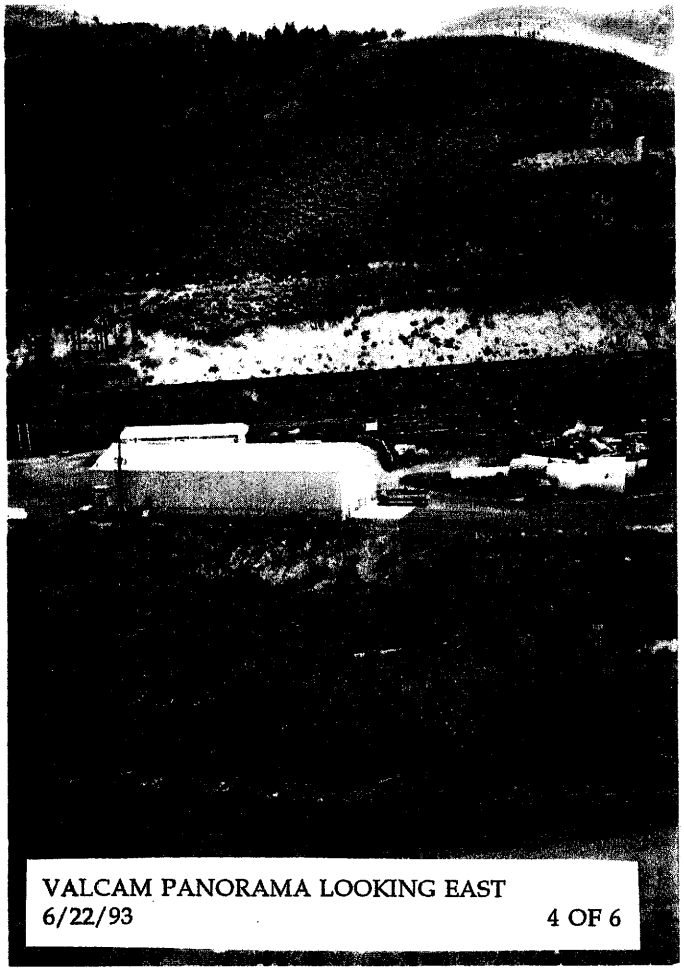
Lodstar Energy Inc. ACT/007/001 4/11/2000




White Oak / Lodestar Energy, Inc.
6/6/2000 - ACT/007/081
N2000-46-1-2, 1 of 2
"Failure to Maintain Diversions"



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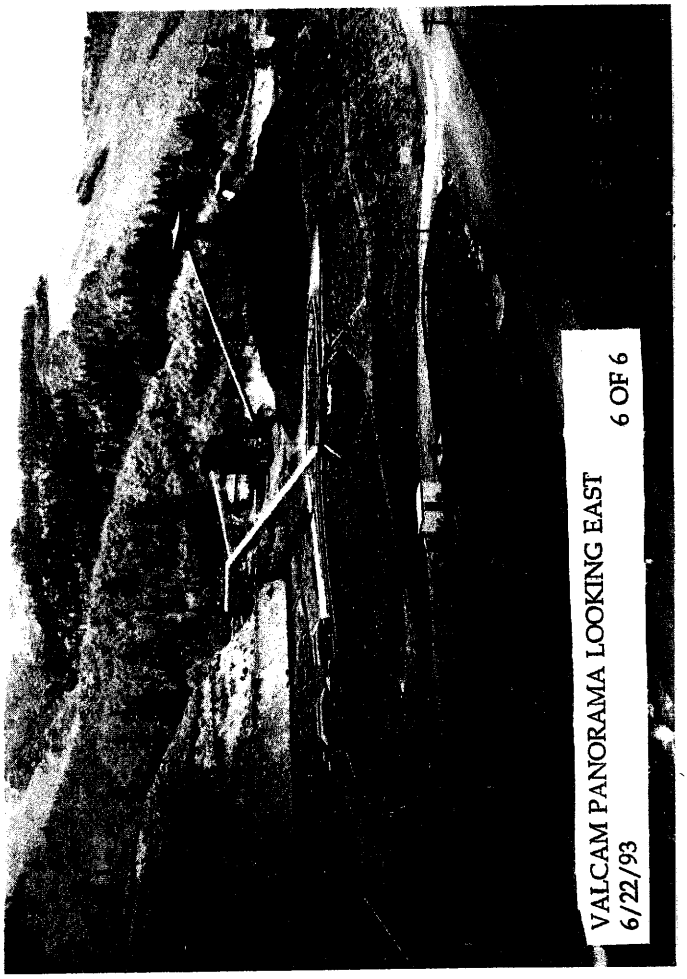
4 OF 6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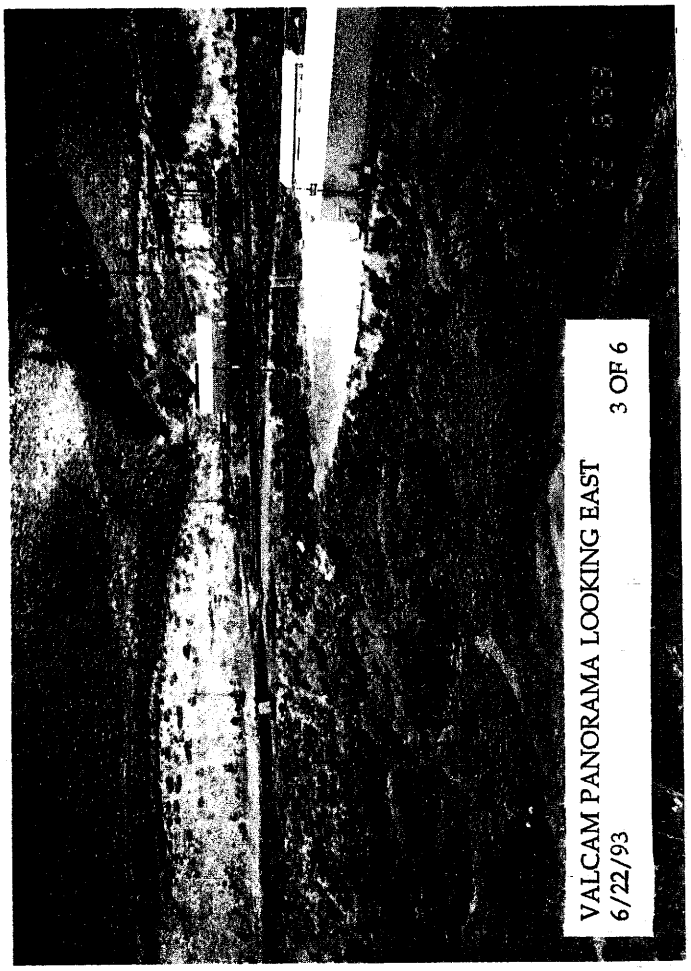
6/22/93
6 OF 6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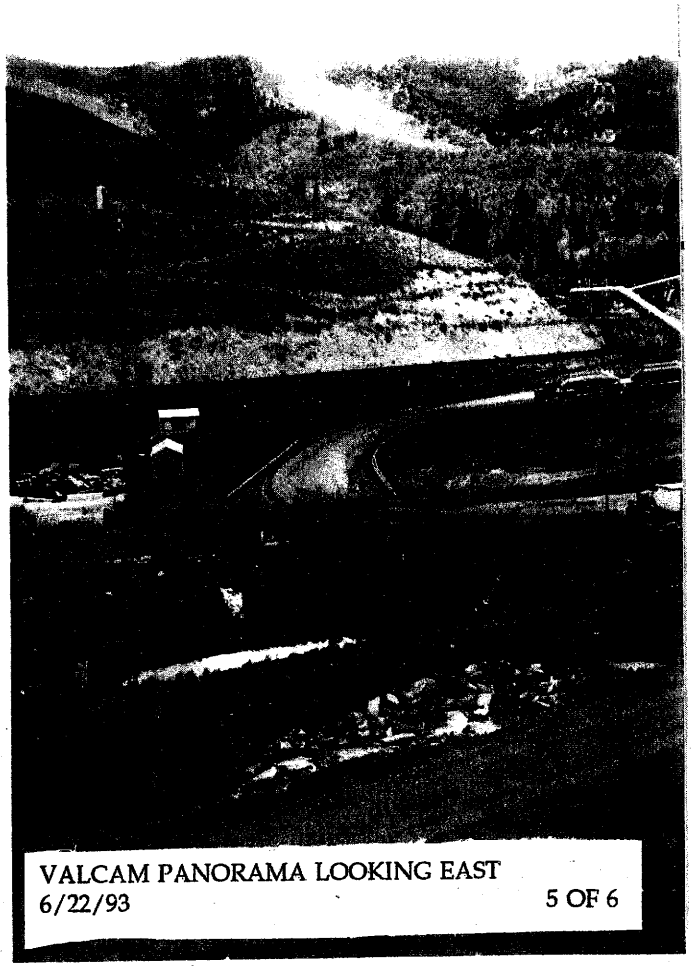
6/22/93
3 OF 6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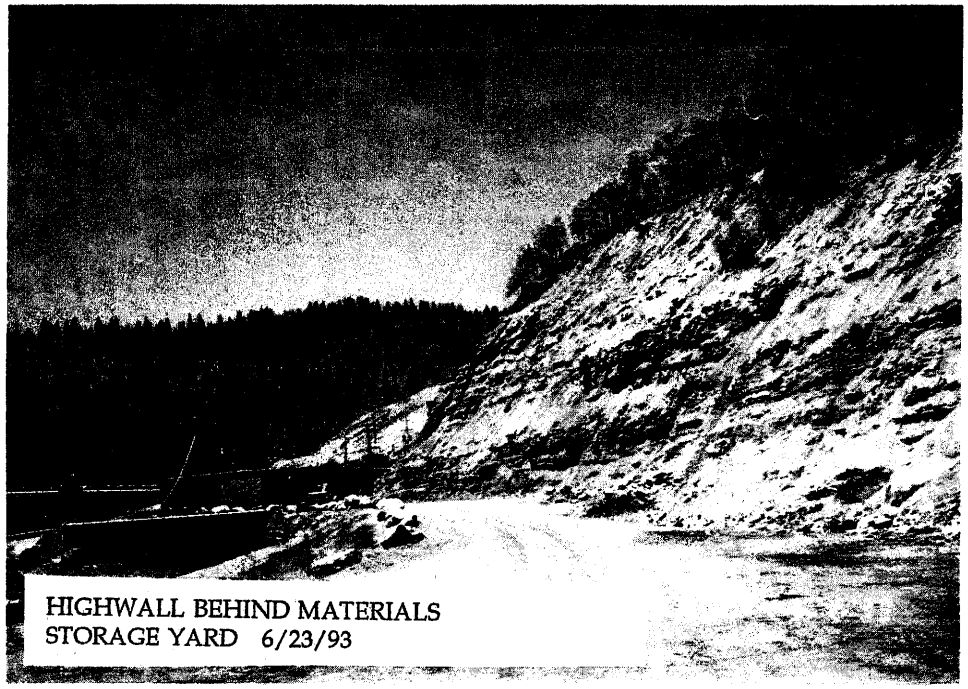
6/22/93
5 OF 6



HIGHWALL BEHIND MATERIALS
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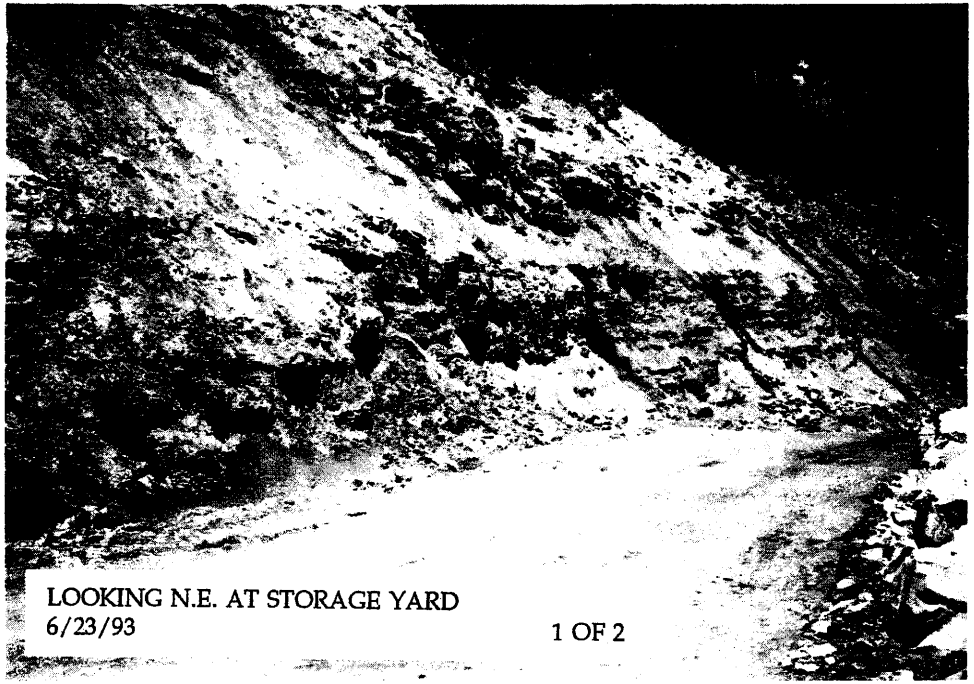
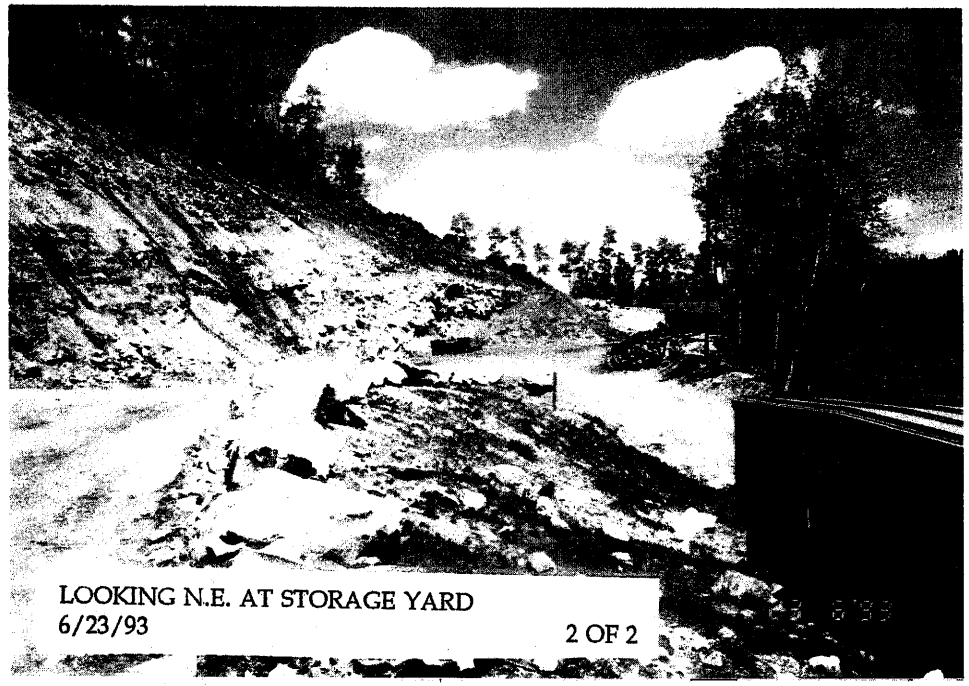


LOOKING N.E. AT STORAGE YARD
6/23/93

1 OF 2



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6/23/93

2 OF 2

LOWER BELINA FACILITIES
6/23/93

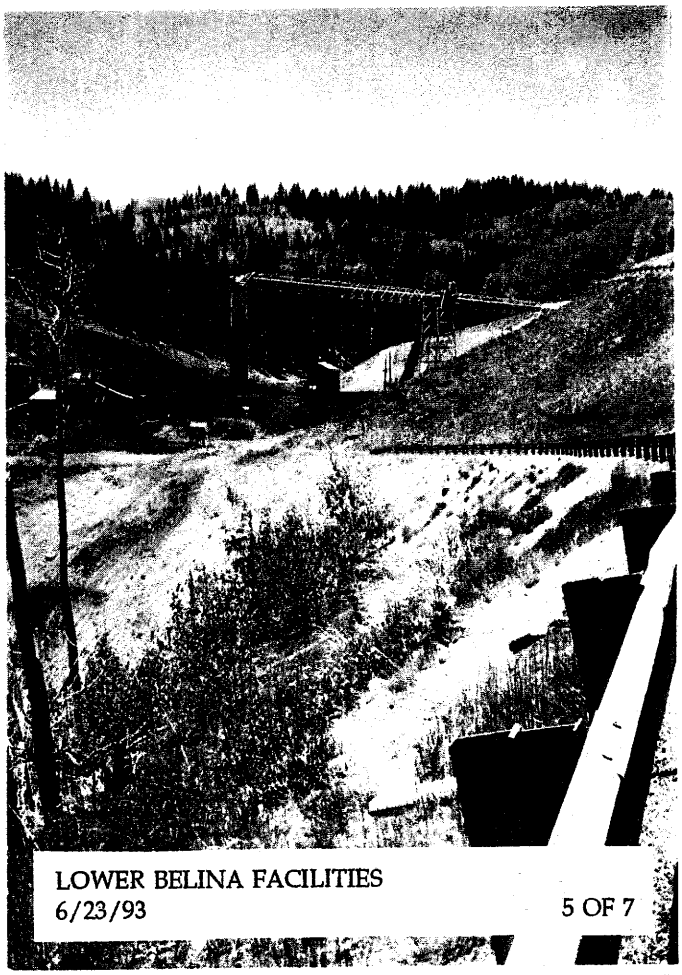
1 OF 7

000367

LOWER BELINA FACILITIES
6/23/93 2 OF 7

LOWER BELINA FACILITIES
6/23/93 3 OF 7

LOWER BELINA FACILITIES
6/23/93 4 OF 7



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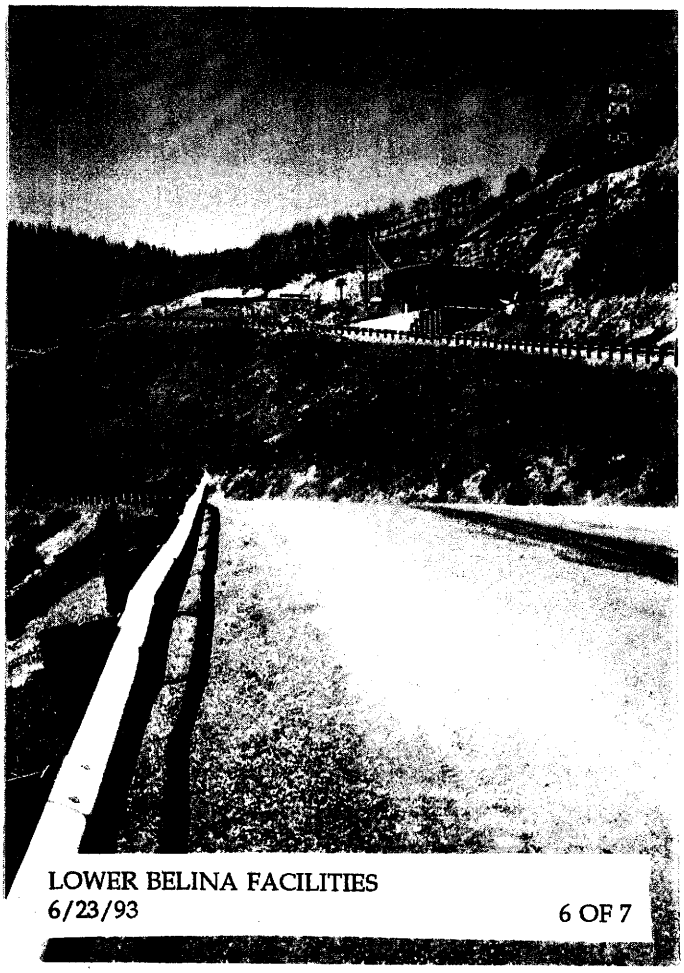

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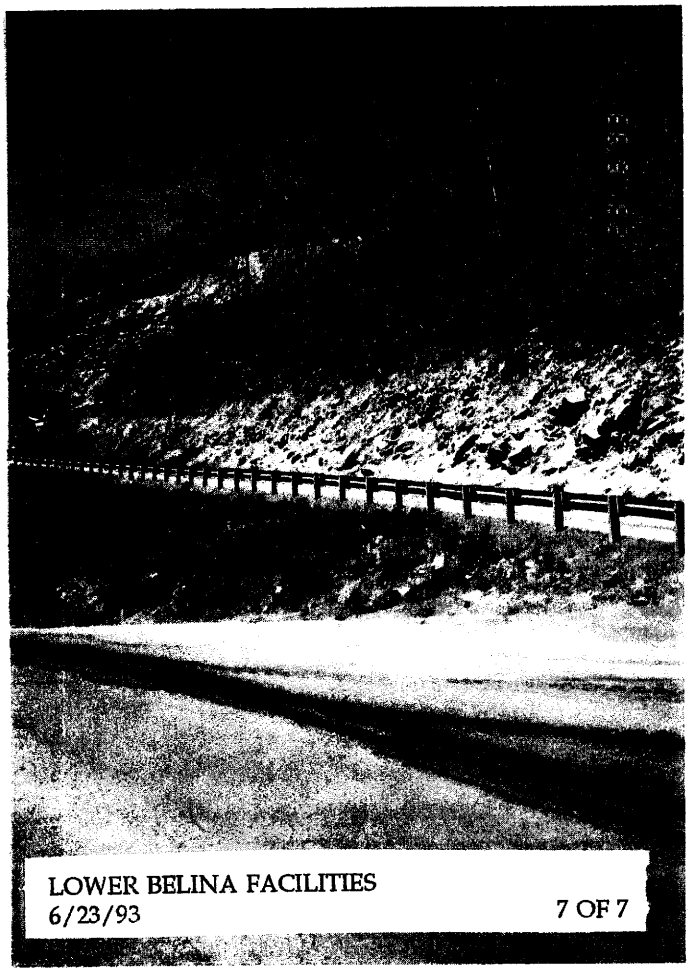

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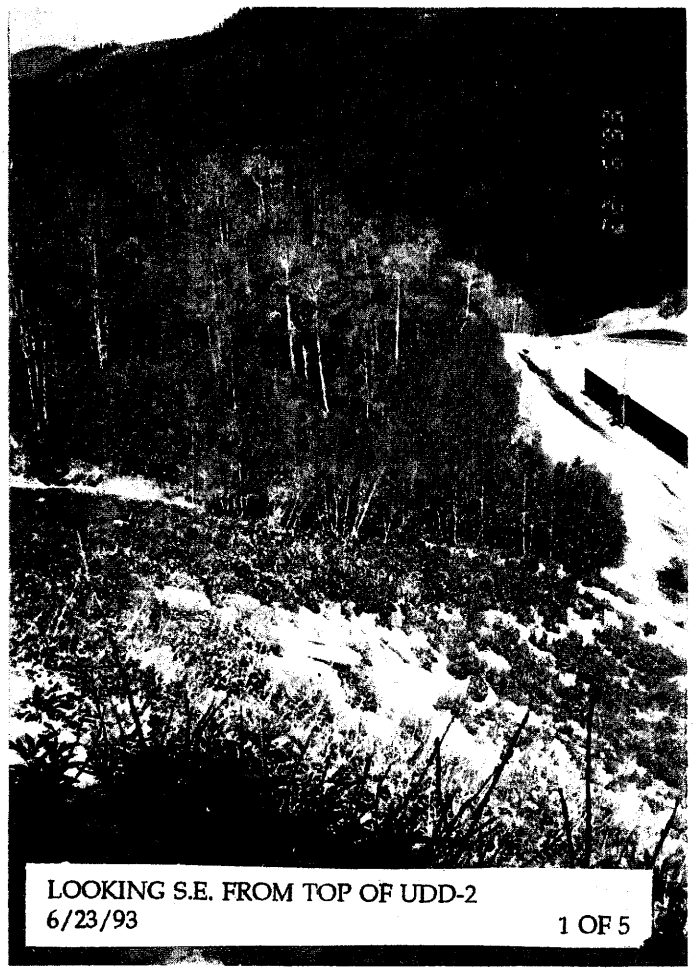
6/23/93 7 OF 7



LOOKING S.E. FROM TOP OF UDD-2
6/23/93 1 OF 5

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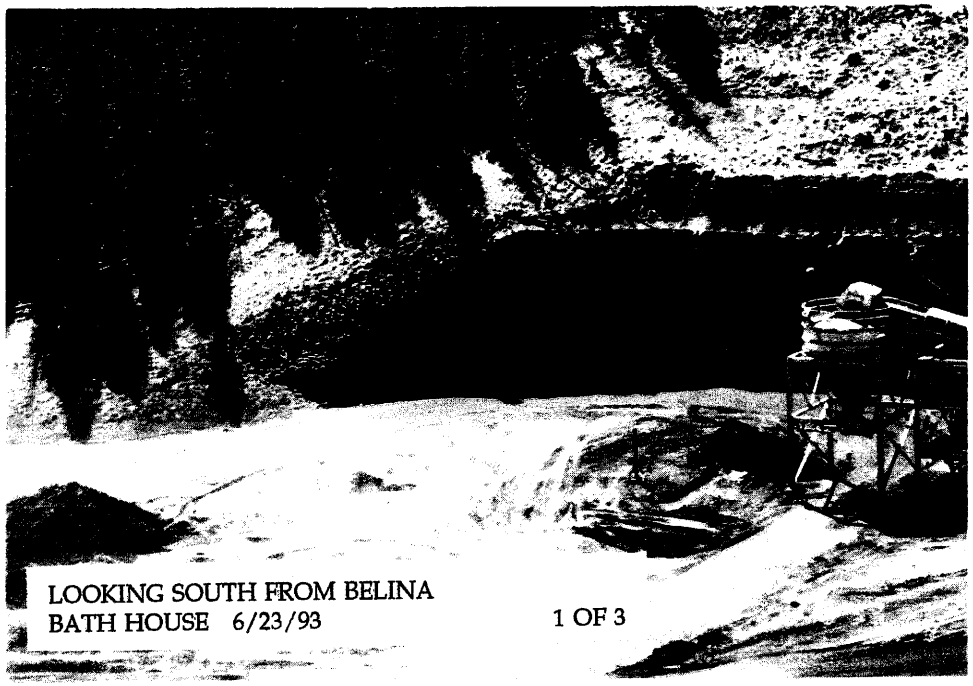
6/23/93 2 OF 5

MINE EQUIPMENT AT BELINA 6/23/93



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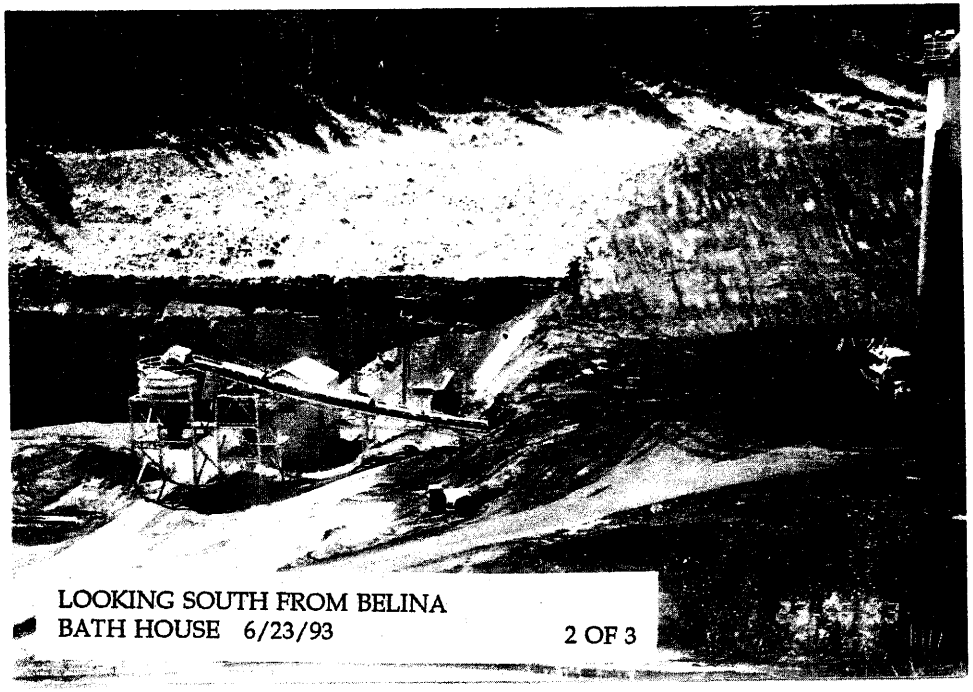
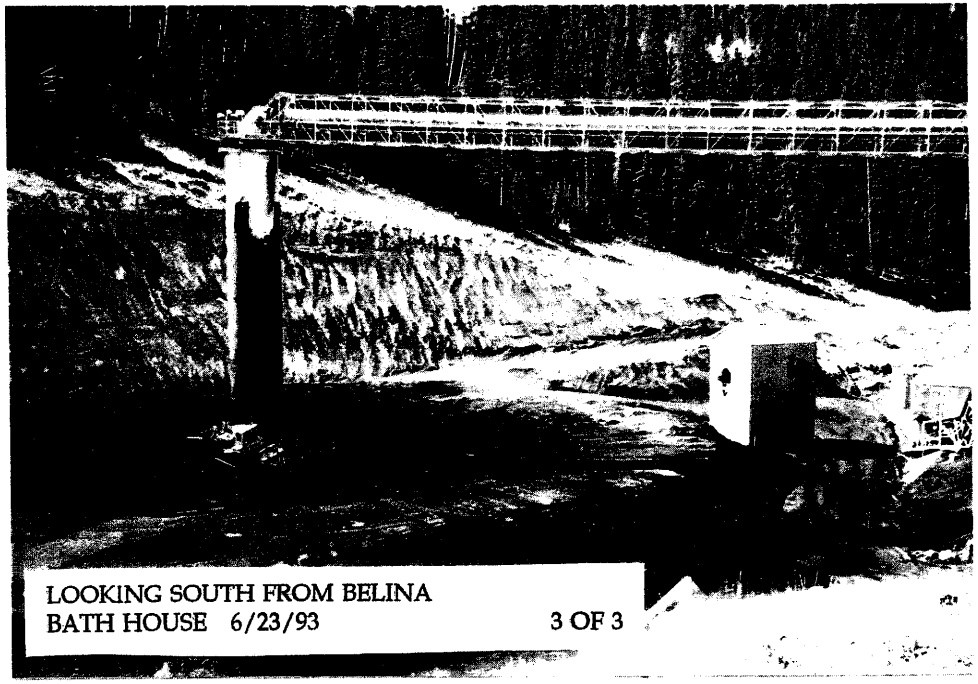
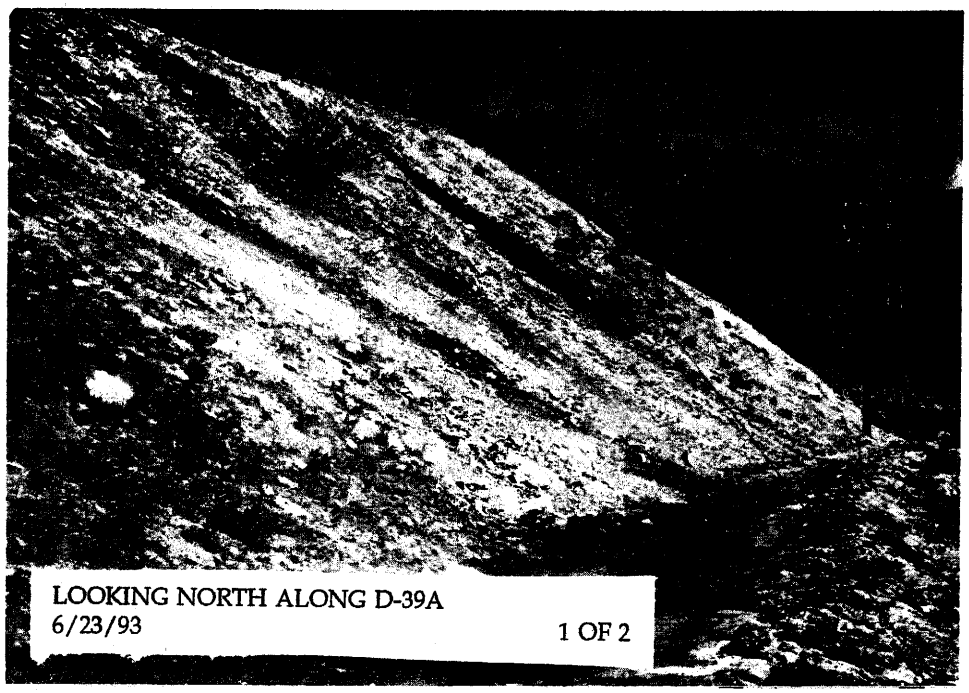
BATH HOUSE 6/23/93 1 OF 3



LOOKING SOUTH FROM BELINA
BATH HOUSE 6/23/93 2 OF 3



LOOKING SOUTH FROM BELINA
BATH HOUSE 6/23/93 3 OF 3



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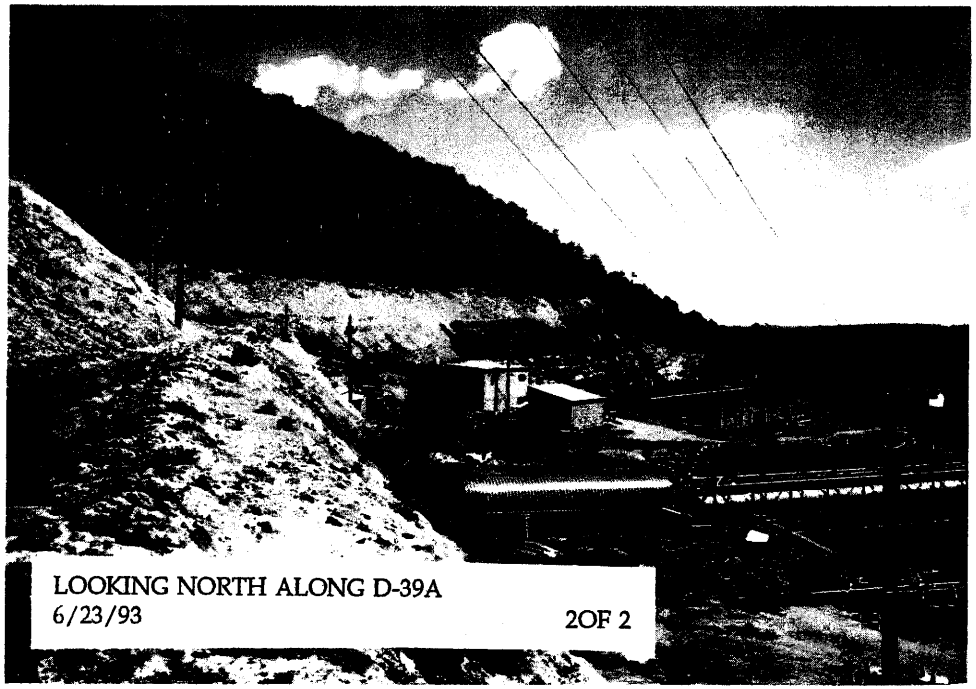
6/23/93 1 OF 2



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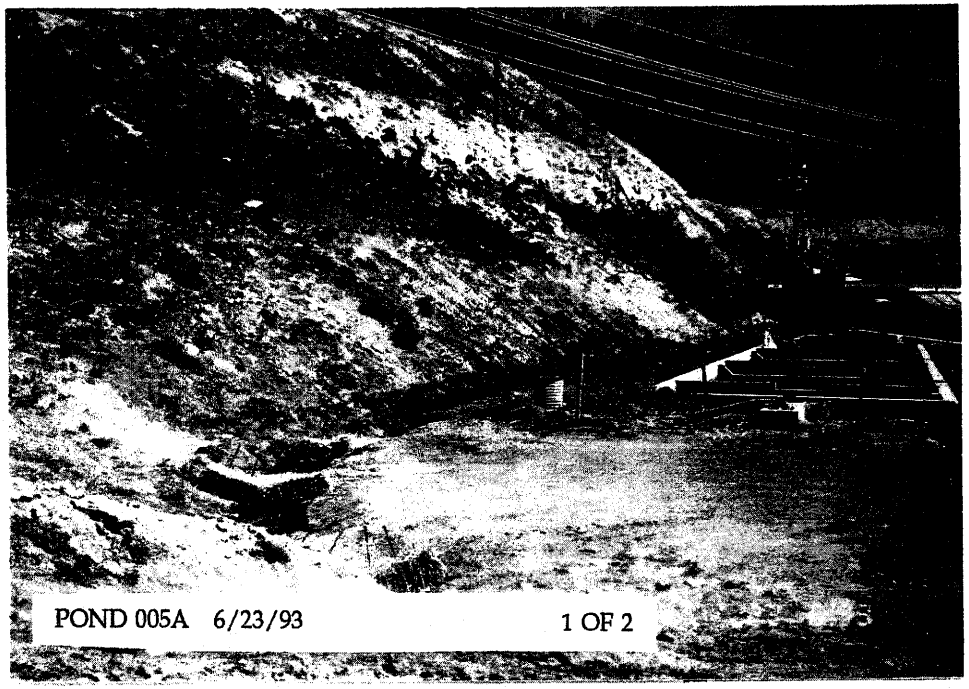
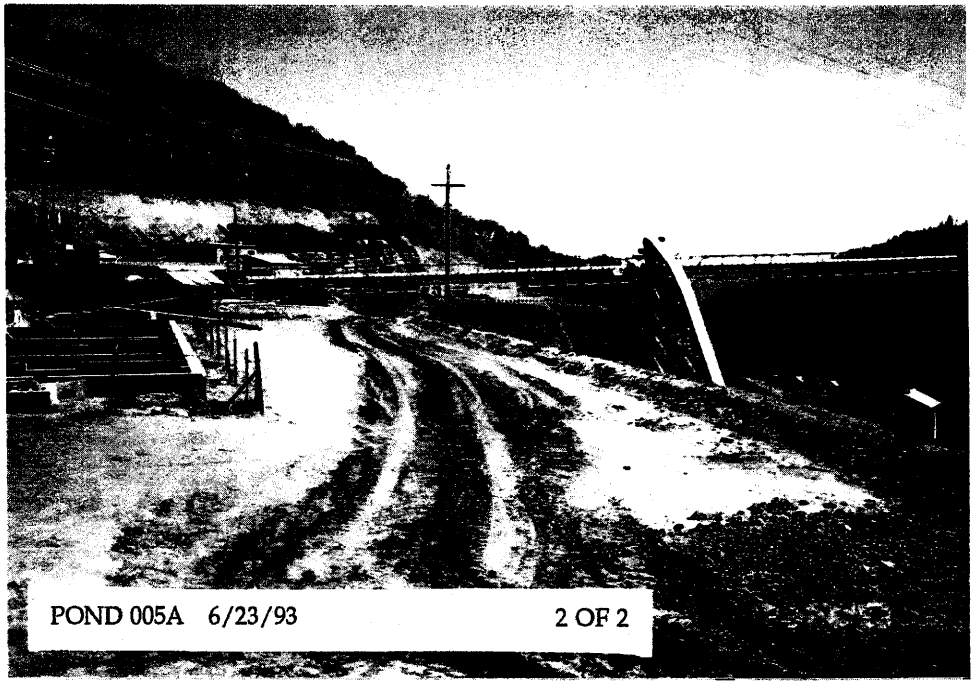
6/23/93 2OF 2



POND 005A 6/23/93 1 OF 2



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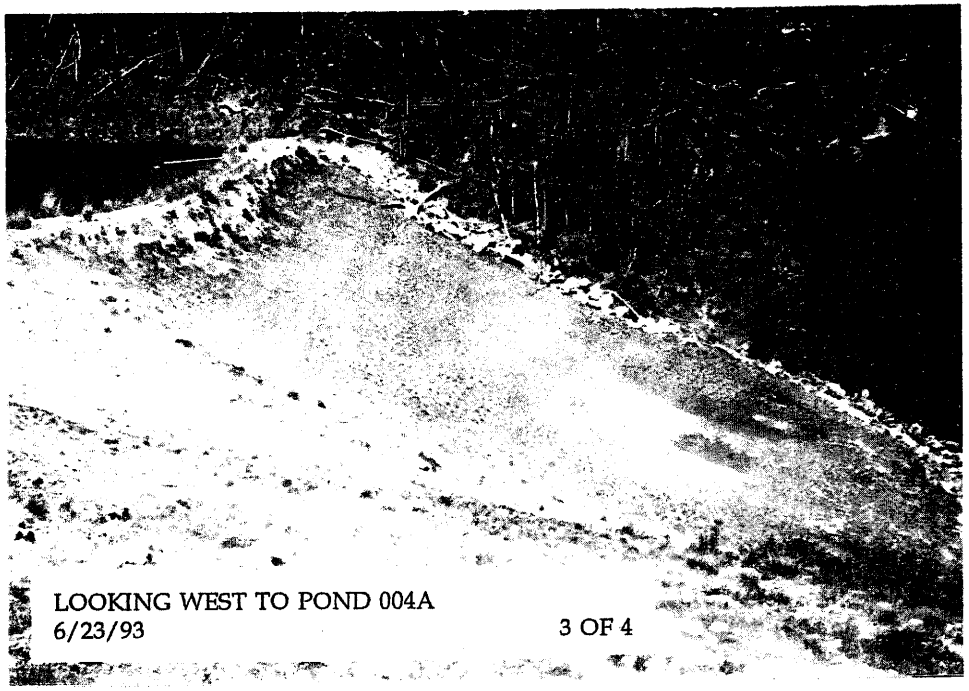
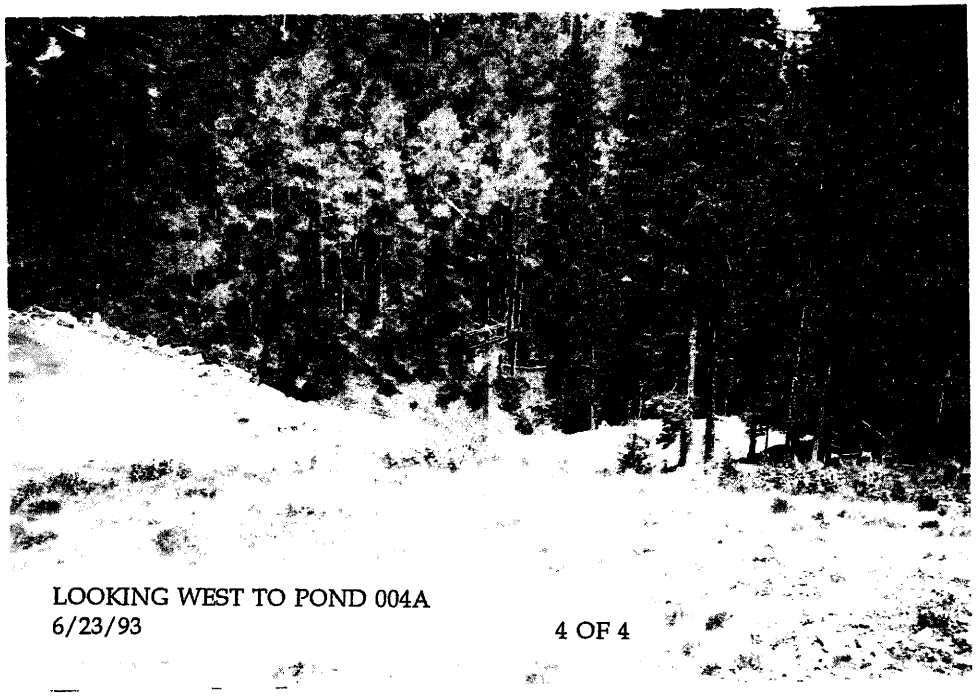


LOOKING WEST TO POND 004A
6/23/93 3 OF 4



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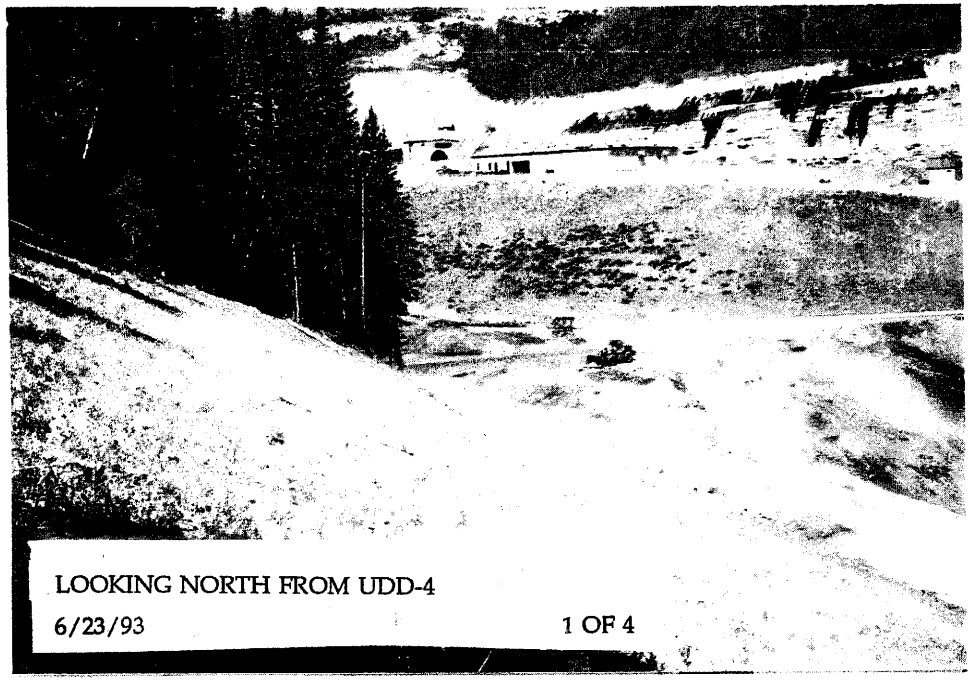
6/23/93 4 OF 4



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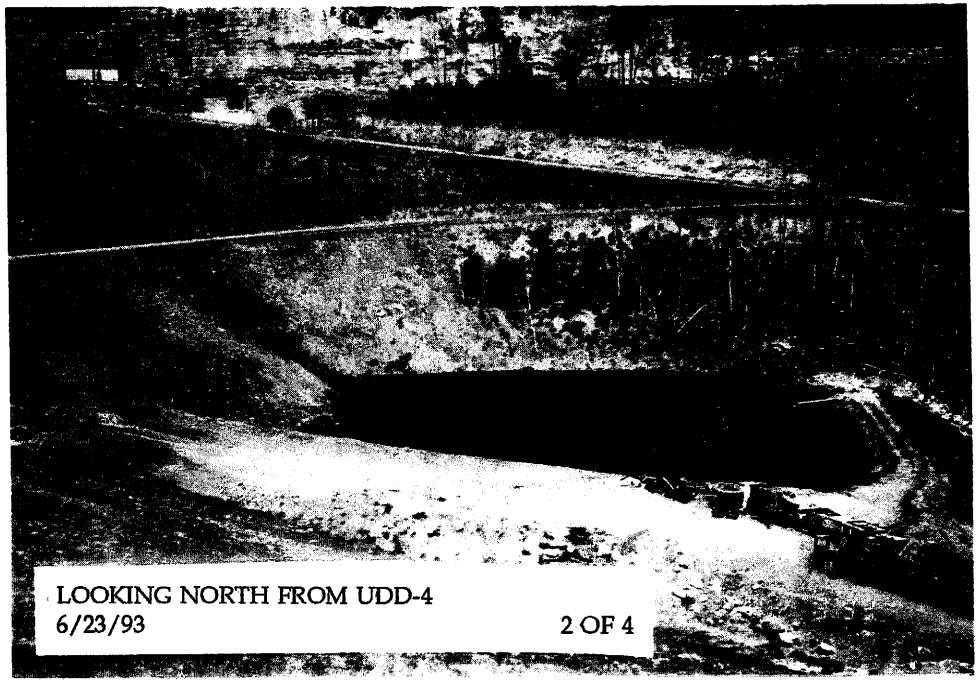
6/23/93 1 OF 4



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6/23/93 2 OF 4

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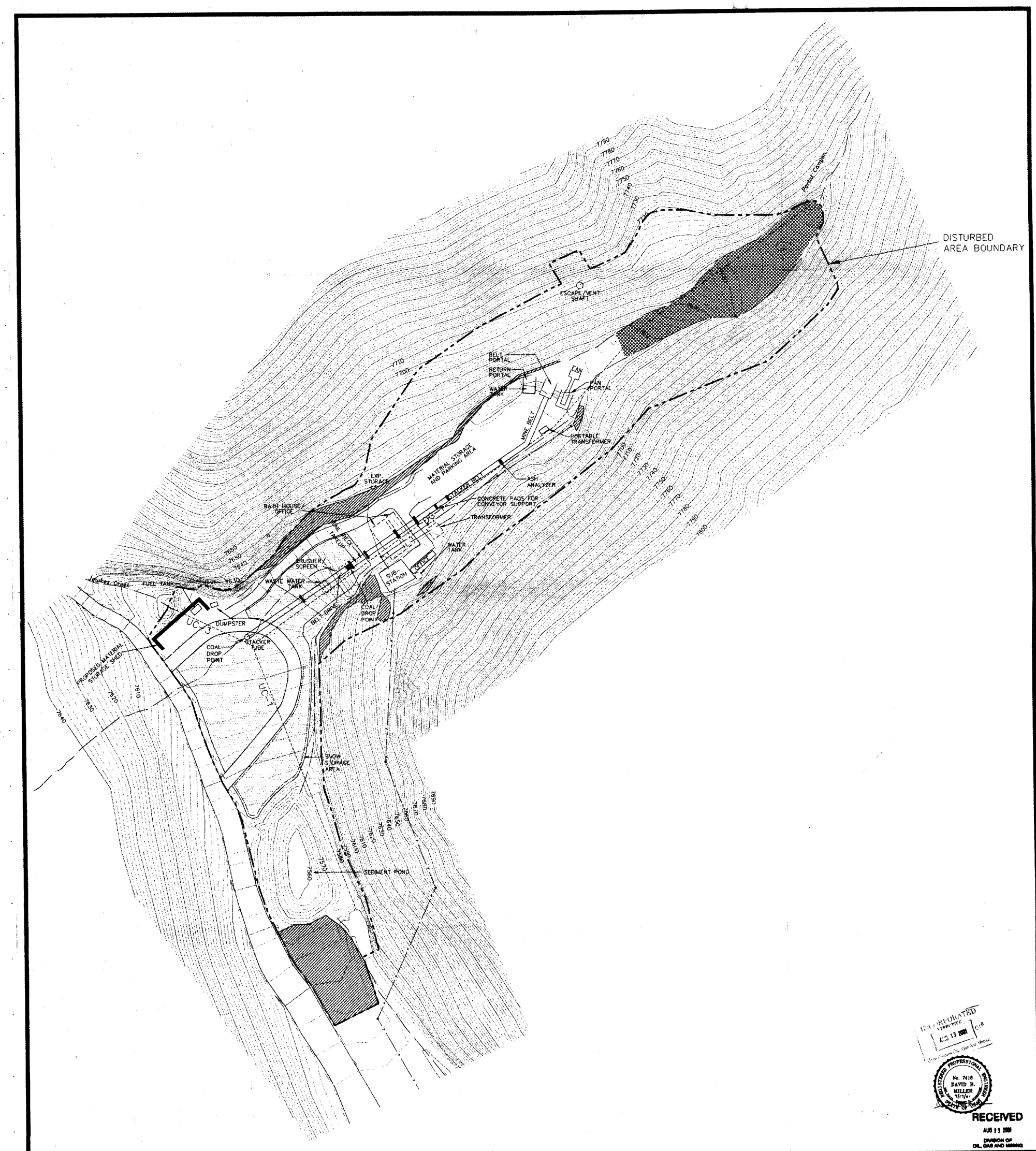


INCORPORATED
AUG 13 2001
Div. of Oil, Gas & Mining

REGISTERED PROFESSIONAL ENGINEER
No. 7418
DAVID B. MILLER
7/17/01
STATE OF UTAH

RECEIVED
AUG 13 2001
DIVISION OF OIL, GAS AND MINING

LEGEND

- POWER/TELEPHONE POLES
- UNIMPROVED ROAD
- IMPROVED GRAVEL ROAD
- STREAMS AND DITCHES
- SNOW STORAGE BOUNDARY LINE
- PROPOSED STRUCTURE
- COAL STORAGE AREA
- TOPSOIL STORAGE AREA
- INTERIM RECLAMATION AREA TOPSOIL STORAGE

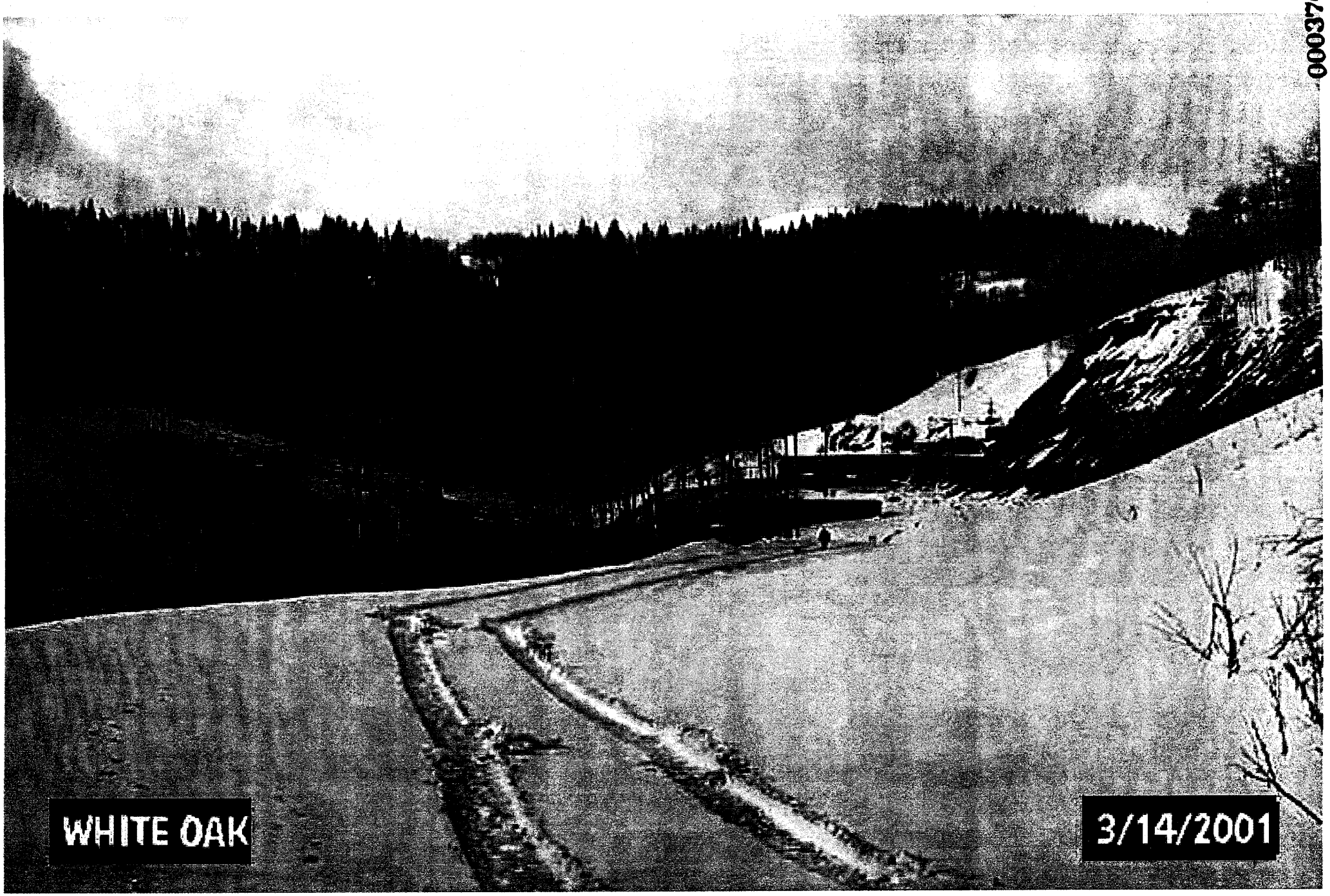
REVISION		
BY	DATE	DESCRIPTION
VGM	2-8-99	
VGM	2-26-99	
VGM	3-31-99	
LBA	7-26-99	NEW DISTURBED AREA BOUNDARY, AND DATE
MB	6-25-01	ADDED BATH HOUSE, WAREHOUSE, WATER TANK, DUMPTER

LODESTAR ENERGY, INC.
HORIZON MINE
HC35 BOX 370
HELPER, UTAH 84526

PLATE 3-1

SURFACE FACILITIES

DRAWN BY: BM | CHECKED BY: DBM | DATE: 4-27-01
APPROVED BY: DBM | AUTOCAD FILE: C:\Mike\horizon_MaBaseline.dwg
SCALE: 1" = 50'



000374

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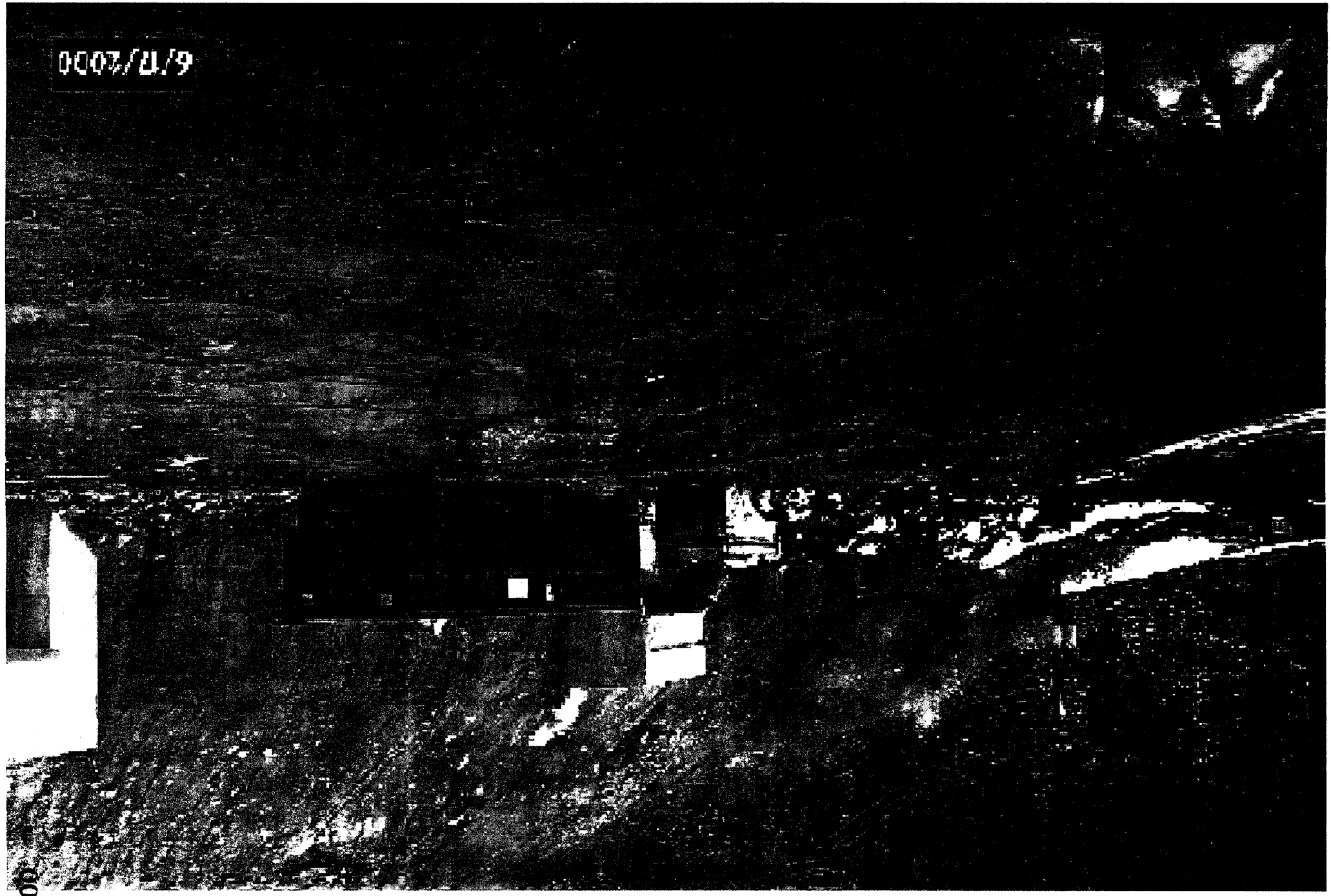
6/17/2000


6/U/2000

WHITE OAK
3/14/2001

WHITE OAK
1/1/1999

WHITE OAK
1/1/1999