

PERMIT TRACKING FORM

Permit Amendment(INS)
 Exploration Permit(INS)
 N.O.V. (INS)
 D.O.
 Permit Transfer
 Incidental Boundary Change
 Permit Midterm (MT)
 Permit Renewal (PR)
 New Permit
 Significant Revision (SR)
 Bond Release (BR)

Date Received	10/01/97	By: tat	(Initial)	PERMIT NUMBER	ACT/015/019
Title of Proposal:	Cottonwood Fan Portal			PERMIT CHANGE #	97C-1
Description:				PERMITTEE	PACIFICORP
# Copies Required	7	# Copies Received	1	MINE NAME	COTTONWOOD/WILBERG

PERMIT CHANGE APPLICATION SENT TO SLC DATE: LETTER TO PERMITTEE:

<input type="checkbox"/> 15 DAY INITIAL RESPONSE TO PERMIT CHANGE APPLICATION OR INITIAL COMPLETENESS REVIEW	DATE DUE	DATE DONE	LETTER TO PERMITTEE:
<input type="checkbox"/> Notice of Affidavit of Publication. (If change is a Significant Revision, New Permit or Permit Transfer)	DATE DUE:	DATE DONE	PUBLIC COMMENT RECEIVED:

PFO REVIEW TRACKING	1ST ROUND		2ND ROUND		SLC REVIEW TRACKING	1ST ROUND		2ND ROUND	
	DUE	DONE	DUE	DONE		DUE	DONE	DUE	DONE
<input checked="" type="checkbox"/> Lead <input type="checkbox"/> Generalist <i>DRLH</i>	10/23				<input type="checkbox"/> Lead				
<input type="checkbox"/> Administrative					<input type="checkbox"/> Administrative				
<input type="checkbox"/> Land Use/AQ					<input type="checkbox"/> Land Use/AQ				
<input checked="" type="checkbox"/> Biology <i>SMW</i>	10/23			2/6	<input type="checkbox"/> Biology				
<input checked="" type="checkbox"/> Engineering <i>SWR</i>	10/23				<input type="checkbox"/> Engineering <i>JWK</i>	3/27			
<input type="checkbox"/> Geology					<input type="checkbox"/> Geology				
<input checked="" type="checkbox"/> Soils <i>PAE</i>	10/23				<input type="checkbox"/> Soils				
<input checked="" type="checkbox"/> Hydrology <i>SKF</i>	10/23			1/30	<input type="checkbox"/> Hydrology				

TA Review Due	Date:	Permittee Response Due <input type="checkbox"/> Stipulation <input type="checkbox"/> Condition <input type="checkbox"/> No Requirements	Date:	DIVISION DECISION LETTER <input type="checkbox"/> APPROVE <input type="checkbox"/> DENY
TA Review Done	Date:	Response Received	Date:	Date:

COORDINATED REVIEWS	PH CONT	1ST ROUND		2ND ROUND		RECEIVED	ADDITIONAL TRACKING	Date:
		SENT	DUE	SENT	DUE			
<input type="checkbox"/> OSM (C)							PUBLIC HEARING	
<input type="checkbox"/> BLM (C)							LETTER FROM COMPLIANCE SUPER.	
<input type="checkbox"/> USFWS (L, NA)							AVS COMPLETED	
<input type="checkbox"/> USFS (2C)							APPROVAL EFFECTIVE DATE	
<input type="checkbox"/> WATER RIGHTS (L)							APPROVED COPY TO FILE	
<input type="checkbox"/> DEQ (L)							APPROVED COPY TO PERMITTEE	
<input type="checkbox"/> UTDWR (L)							APPROVED COPY TO PFO/SLC	
<input type="checkbox"/> ST HISTORY (L, NA)							APPROVED COPY TO AGENCIES	
							CHIA MODIFIED	
							UPDATE MASTER TA	
							DONE/NEEDED	

COMMENTS:

PERMIT TRACKING FORM

- Permit Amendment(INS)
 Exploration Permit(INS)
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 Permit Renewal (PR)
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 Significant Revision (SR)
 Bond Release (BR)

DATE RECEIVED 7-3-97	By: bat (Initial)	PERMIT NUMBER	ACT/015/019
Title of Proposal: Cottonwood Farm Parked Midterm Amendment		PERMIT CHANGE #	97MT 01E
Description:		PERMITTEE	PACIFICORP
# Copies Required 7	# Copies Received 24	MINE NAME	COTTONWOOD/WILBERG

PERMIT CHANGE APPLICATION SENT TO SLC DATE: _____ LETTER TO PERMITTEE: _____

<input type="checkbox"/> 15 DAY INITIAL RESPONSE TO PERMIT CHANGE APPLICATION OR INITIAL COMPLETENESS REVIEW	DATE DUE	DATE DONE	LETTER TO PERMITTEE:
<input type="checkbox"/> Notice of Affidavit of Publication. (If change is a Significant Revision, New Permit or Permit Transfer)	DATE DUE:	DATE DONE	PUBLIC COMMENT RECEIVED:

PRICE REVIEW TRACKING	REVIEW		SLC REVIEW TRACKING	REVIEW	
	DUE	DONE		DUE	DONE
<input checked="" type="checkbox"/> Lead <input type="checkbox"/> Generalist SPH	8/6/97		<input type="checkbox"/> Lead		
<input type="checkbox"/> Administrative			<input type="checkbox"/> Administrative		
<input type="checkbox"/> Land Use/AQ			<input type="checkbox"/> Land Use/AQ		
<input type="checkbox"/> Biology SMW	8/3/97		<input type="checkbox"/> Biology		
<input type="checkbox"/> Engineering SWK	8/3/97		<input type="checkbox"/> Engineering		
<input type="checkbox"/> Geology			<input type="checkbox"/> Geology		
<input type="checkbox"/> Soils RAD	8/3/97	8/7	<input type="checkbox"/> Soils		
<input type="checkbox"/> Hydrology SKE	8/3/97		<input type="checkbox"/> Hydrology		

TA Review Due	Date:	Permittee Response Due	Date:	DIVISION DECISION LETTER <input type="checkbox"/> APPROVE <input type="checkbox"/> DENY
		<input type="checkbox"/> Stipulation <input type="checkbox"/> Condition <input type="checkbox"/> No Requirements		
TA Review Done	Date:	Response Received	Date:	Date:

COORDINATED REVIEWS	PHONE CONTACT	SENT	DUE	RECEIVED	ADDITIONAL TRACKING	Date:
<input type="checkbox"/> OSMRE (C)					PUBLIC HEARING	
<input type="checkbox"/> US Forest Service (2C)					LETTER FROM COMPLIANCE SUPER.	
<input type="checkbox"/> BLM (C)					AVS COMPLETED	
<input type="checkbox"/> US FWS (L, NA)					APPROVAL EFFECTIVE DATE	9/11/97
<input type="checkbox"/> US NPS					APPROVED COPY TO FILE	
<input type="checkbox"/> UT SHPO(L, NA)					APPROVED COPY TO PERMITTEE	
<input type="checkbox"/> UT DEQ (L)					APPROVED COPY TO PFO/SLC	
<input type="checkbox"/> UT Water Rights (L)					APPROVED COPY TO AGENCIES	
<input type="checkbox"/> UT Wildlife Resources(L)					CHIA MODIFIED	
<input type="checkbox"/> UT SITLA					UPDATE MASTER TA DONE/NEEDED	

PRICE FIELD OFFICE COMMENTS:	SLC OFFICE COMMENTS: Deficiencies recd. 10/2/97 1 copy
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**will send other copies once we have reviewed*

on the north by the thinning of the seam below 5' in thickness. On the east, the seam is bounded on the Deer Creek Fault and Pleasant Valley Fault, and on the south and west by coal outcrop, thinning of the seam below 5', and lease boundaries. Mining will commence in interburden thickness of 30 feet or greater when extracting both seams.

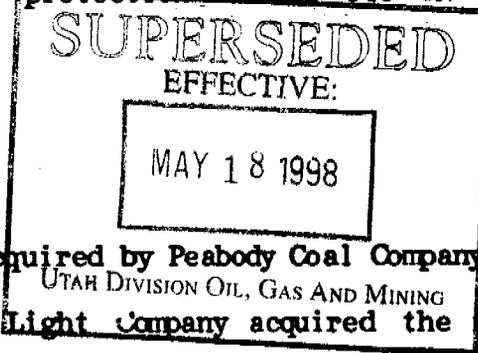
The Blind Canyon Seam within the Cottonwood/Wilberg Mine lies approximately 100 feet above the Hiawatha Seam. This seam is bounded on the north by the Deer Creek Mine workings and on the east, south and west by the thinning of the seam below 5' in thickness.

Since part of the area of the Cottonwood/Wilberg Mine is overlain by areas of the Deer Creek Mine, detailed mine scheduling has been undertaken to ensure that the upper seam is mined prior to the mining of the lower seam while still following good mining practices in generating the mine layout. In addition, the mining plans are designed with a system of barriers for protection of the 345 KV line and perennial stream drainage.

WILBERG MINE

The Wilberg Mine was acquired by Peabody Coal Company in 1958. In March 1977, Utah Power and Light Company acquired the mine from Peabody Coal and was officially listed as the lessee on September 1, 1977. In 1982, Utah Power and Light successively bid the South Lease (U-47978) federal coal tract. Following a series of permitting submittals including:

- 1- Wilberg Mine Permit Application (1977, 1981 and 1983)
- 2- Cottonwood Fan Portal Modification (1980)
- 3- South Portal Modification (1982)



COTTONWOOD FAN PORTAL AREA

The original development plans for the Wilberg Mine centered on extending the main entries westward to intersect the coal outcrop located in Cottonwood Canyon four miles west of the portals.

It was anticipated the ventilation exhaust fan would be needed in early 1983. However, with the breakout or air intakes constructed in the Miller Canyon and the shift in mining emphasis to the South (Cottonwood) lease, the fan portal installation has been postponed.

This portal site initially was disturbed under an exploration permit issued by the State of Utah for determining subsoil engineering design data for a major portal facility which since has been reduced to only a fan portal. This five acre site includes two small soil stockpiles, and a disturbed drainage collection system with two small sedimentation basins.

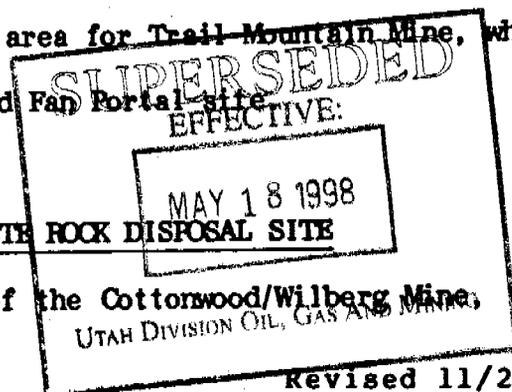
Approximately half or two and one-half acres of this disturbed area has been revegetated. This planting occurred in late 1981.

There exists within the area of planned development an old abandoned coal mine (Johnson Mine). Remnants include an old wagon road and two sealed portals. It is planned to utilize the road and extend it to serve the new fan portal.

Below the project area lies Cottonwood Creek and a county road. The creek adjacent to the planned fan portal is now covered in a buried conduit to provide a working area for Trail Mountain Mine, whose property lies west of said Cottonwood Fan Portal site.

COTTONWOOD/WILBERG, DES BEE DOVE WASTE ROCK DISPOSAL SITE

Located 1.5 miles south of the Cottonwood/Wilberg Mine, this



Revised 11/21/83
Revised 3/1/89

Federal Coal Lease U-47978 was issued by the Bureau of Land Management to Utah Power & Light Company, effective October 1, 1981.

None of these documents are subjects of pending litigation.

AREA DESIGNATED UNSUITABLE FOR MINING

In consultation with concerned federal land agencies and the Division of Oil, Gas and Mining, no lands within or adjacent to the permit area have been identified as qualifying under R645-103 as areas unsuitable for surface effects of underground coal mining activities.

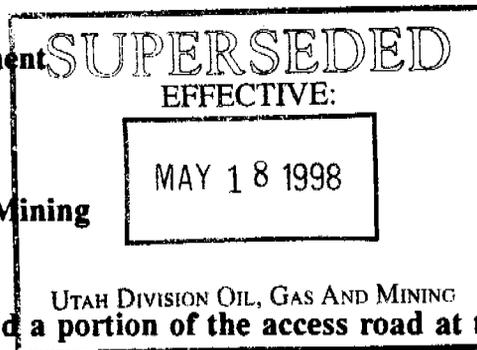
References:

Land Management Plan
Ferron-Price Planning Unit
Manti-LaSal National Forest

Mr. John Niebergall
US Forest Service
Manti-LaSal National Forest
Ferron, Utah

Mr. Sam Rowley
Bureau of Land Management
Price, Utah

Mr. Ron Daniels
Division of Oil, Gas and Mining
Salt Lake City, Utah



The two sedimentation basins and a portion of the access road at the Cottonwood Fan Portal in Cottonwood Canyon are constructed within 300 feet of the existing Trail Mountain Coal Mine facilities. These facilities were approved by the Division of Oil, Gas and Mining, August 8, 1980 (ACT/015/027) and October 8, 1986

AMENDMENT TO

APPROVED Mining & Reclamation Plan
Approved, Division of Oil, Gas & Mining

1-49

by SW 92B date 6-27-92

760. RECLAMATION

761. GENERAL REQUIREMENTS

Before abandoning the Cottonwood Fan Portal area or seeking bond release, PacifiCorp will ensure that all temporary structures are removed and reclaimed. Temporary structures utilized at the Fan Portal site include two sediment basins, silt fence structures, gabions and undisturbed diversion ditches excluding #UD-3 and #DD-4 which will be retained.

762. ROADS

The "Old Johnson Road" will be utilized to access reclamation activities associated with the Cottonwood Fan Portal. Reclamation of the road will commence immediately after it is no longer needed for reclamation operations (refer to R645-301-400 for details concerning reclamation of the access road). Silt fencing will be placed according to need along the road outslope, base of backfill, to insure sediment control.

762.100

Cut and fill slopes will be reshaped to be compatible with the postmining land use and to complement the drainage pattern of the surrounding area. Ditches DD-4 and UD-3 will be retained in their current configurations to prevent undisturbed/disturbed runoff from affecting the steep slope reclamation project. Additional response to the status of ditch DD-4 is included as an attachment at the end of the section.

763. SILTATION STRUCTURES

During the reclamation process and until vegetation success is achieved, all temporary structures will be retained and maintained. In addition to the operational siltation structures (refer to Map KS1700D - Surface Facilities [sediment basins, ditches, silt fence structures]) silt fence structures will be installed during reclamation above the upper sediment basin and

terrace provides drainage (Ditch DD-4) to the existing south sediment basin. In no case will the structures be removed sooner than two years after the last augmented seeding. When the siltation structures are removed, the land on which the siltation structure is located will be regraded and revegetated in accordance with the reclamation plan. Refer to Plate 3-10 for the final basin site configurations including filling of the sediment basins.

After the sediment basins have been filled, silt fence will be used to control sediment until vegetation is well established.

SEDIMENT CONTROL

Sediment control measures (silt fences) will be installed during Phase II reclamation after removal of the basins. Silt fence will be installed at the lowest point of disturbance at each of the basins.

TOPSOIL AND SUBSOIL PILE SEDIMENT CONTROL

After removal of the topsoil pile and subsoil pile to the extent required, contouring and reseeding will be completed according to the MRP, reclamation plan. Silt fence will be installed at the base of each pile to control sediment until vegetation can be established, when vegetation meets standards as required by the Division the silt fencing will be removed.



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

Michael O. Leavitt
Governor

Ted Stewart
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)

April 27, 1998

Chuck Semborski, Environmental Supervisor
Energy West
P.O. Box 310
Huntington, Utah 84528

Re: Approval of Fan Portal Reclamation Plan, PacifiCorp, Cottonwood/Wilberg Mine,
ACT/015/019-97C, Folder #3, Emery County, Utah

Dear Mr. Semborski:

The Division has completed a review of your April 16, 1998 submittal which addresses the reclamation cost estimate for the Cottonwood Fan Portal at the Cottonwood/Wilberg Mine. With this latest submittal your reclamation plans for the Cottonwood Fan Portal are considered to be complete and accurate and they are hereby approved. Please provide 7 copies of the cost estimate with the redline strikeout removed so that we can complete the transmittal of these plans. These copies must be received by no later than May 12, 1998.

Even though your plans have now been approved, there remains one outstanding issue that still must be resolved. That being the following requirement. PacifiCorp must provide the following in accordance with the requirements of:

R645-301-412.200, a copy of the comments from the land owner concerning the proposed reclamation and the post mining land use of the area, for inclusion in the reclamation plan.

We understand that Pacificorp is negotiating with the land owner to resolve this issue and a resolution is imminent. Please ensure that this issue is resolved by providing the required information to the Division, prior to conducting any construction activities on the site.

If you have any questions regarding the requirements, please don't hesitate to call.

Sincerely,

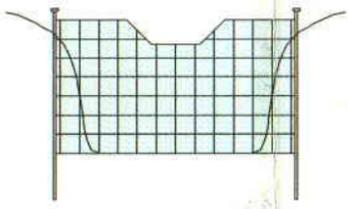
Daron R. Haddock
Permit Supervisor

cc: Joe Helfrich
Price Field Office
O:\015019.CWW\FINAL\APPR97C.LTR

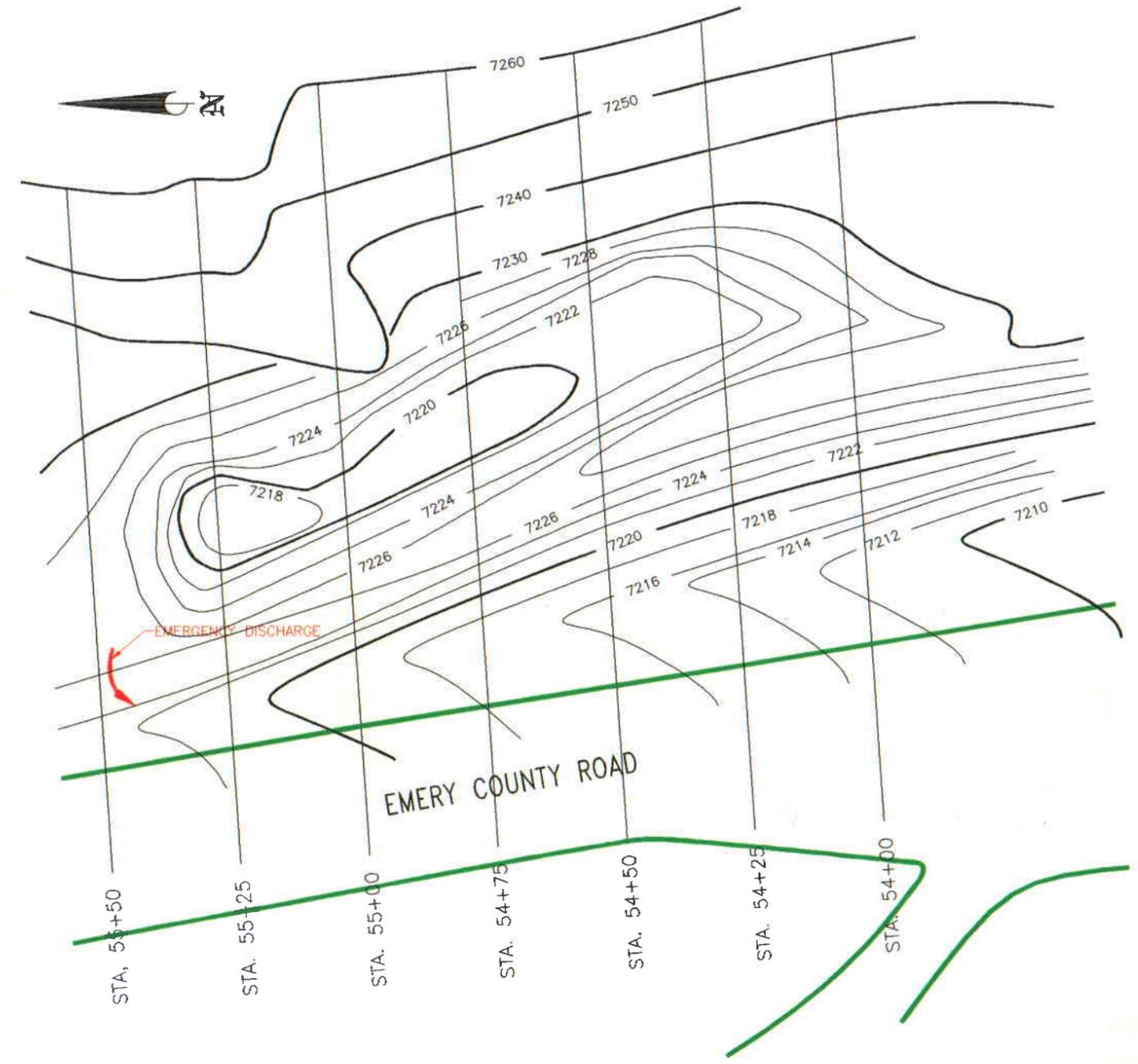


I, JOHN CHRISTENSEN BEING A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF UTAH, DO HEREBY CERTIFY THAT THE INFORMATION CONTAINED ON THIS DRAWING IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

John Christensen 1/6/98
 JOHN CHRISTENSEN NO. 165651 DATE



DISCHARGE DETAIL
 SILT FENCE & MESH WITH NOTCH
 (SEDIMENT CONTROL/RUNOFF CONTROL)
 WIDTH AND HEIGHT VARIES
 SIDES AND BOTTOM KEYED IN
 TO PREVENT BYPASS
 NO SCALE



REFER TO DWG. NO. CM-10501-CP FOR LOCATION

3-10

CAD FILE NAME/DISK#: CM10351

ENERGY WEST MINING COMPANY
 HUNTINGTON, UTAH 84528

COTTONWOOD FAN PORTAL SOUTH SEDIMENT BASIN DETAILS & CROSS SECTIONS

DRAWN BY: **K. LARSEN** **CM-10351-CP**

SCALE: **1"=30'** DRAWING #:

DATE: **JANUARY 9, 1998** SHEET **1** OF **1** REV. **---**

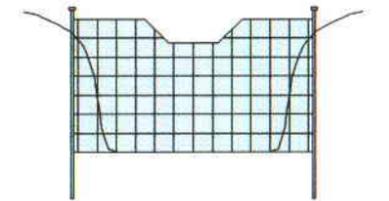
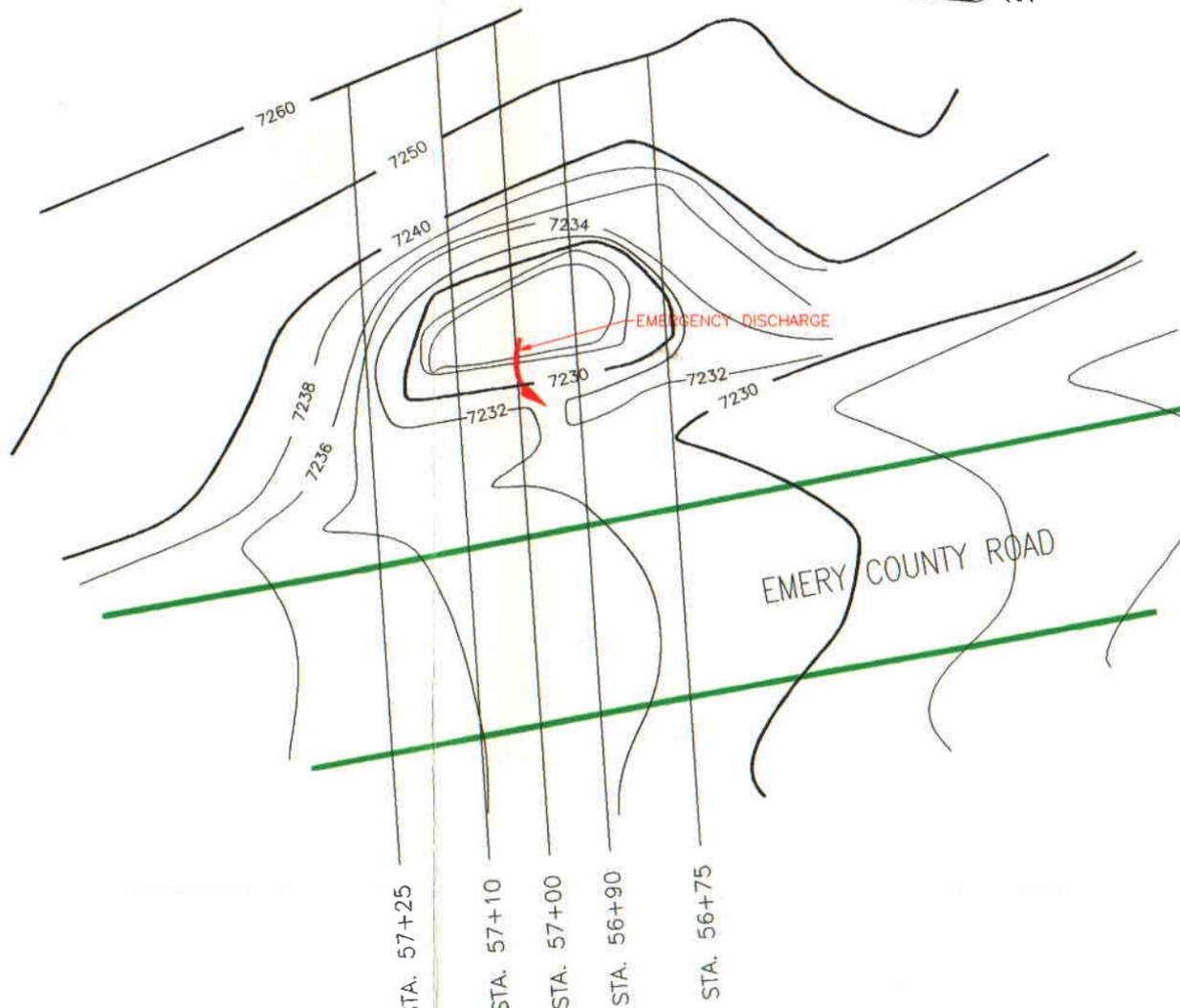
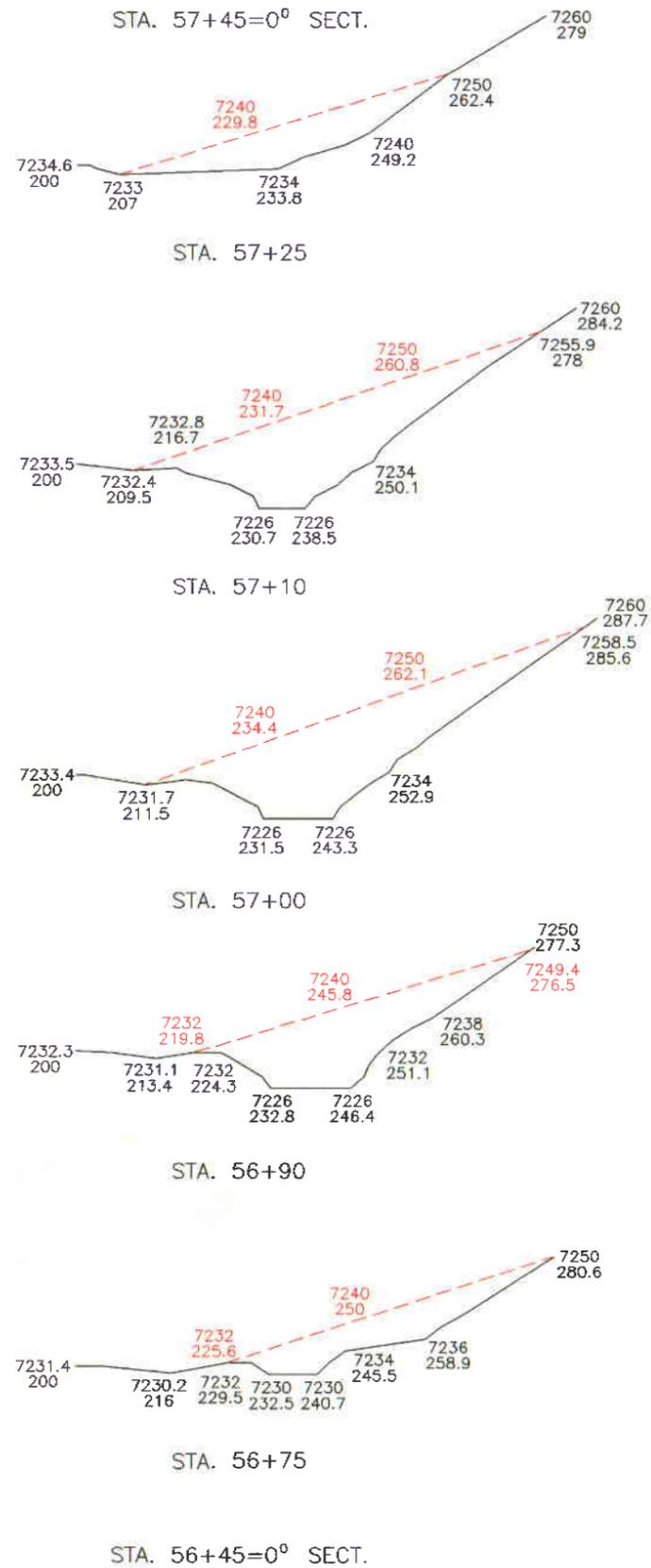
SOUTH SEDIMENT BASIN - QUANTITY TABLE - CUT VOLUME

STATION	TOTAL AREA FT. ²	TOTAL VOLUME YDS. ³
55+25	38.2	17.69
55+00	55.8	43.52
54+75	57.0	52.22
54+50	130.5	86.81
54+25	84.3	99.44
54+00	62.5	67.96
END SECTION		11.57
GRAND TOTAL FT. ² & YDS. ³	428.3	379.21

SOUTH SEDIMENT BASIN - QUANTITY TABLE - FILL VOLUME

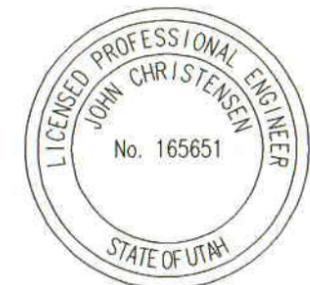
STATION	TOTAL AREA FT. ²	TOTAL VOLUME YDS. ³
55+50	474.7	175.82
55+25	316.5	366.30
55+00	226.2	251.25
54+75	387.2	283.98
54+50	291.5	314.21
54+25	303.4	275.42
54+00	76.7	175.97
END SECTION		14.20
GRAND TOTAL FT. ² & YDS. ³	2,076.2	1,857.15

* SUBSOIL BORROWED FROM EXISTING PILE
 1,857.15 - 379.21 = 1,787.02 YDS.³



DISCHARGE DETAIL
 SILT FENCE & MESH WITH NOTCH
 (SEDIMENT CONTROL/RUNOFF CONTROL
 WIDTH AND HEIGHT VARIES)
 SIDES AND BOTTOM KEYED IN
 TO PREVENT BYPASS
 NO SCALE

RECEIVED
 JAN 16 1998
 DIV. OF OIL, GAS & MINING



I, JOHN CHRISTENSEN BEING A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF UTAH, DO HEREBY CERTIFY THAT THE INFORMATION CONTAINED ON THIS DRAWING IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

John Christensen 1/15/98
 JOHN CHRISTENSEN NO. 165651 DME

REFER TO DWG. NO. CM-10501-CP FOR LOCATION

CAD FILE NAME/DISK#: CM10353

3-10

ENERGY WEST MINING COMPANY
 HUNTINGTON, UTAH 84528

COTTONWOOD FAN PORTAL NORTH SEDIMENT BASIN DETAILS & CROSS SECTIONS

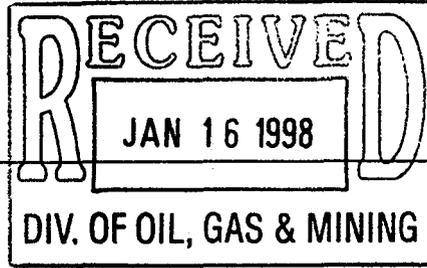
DRAWN BY: **K. LARSEN** **CM-10353-CP**

SCALE: **1"=30'** DRAWING #:

DATE: **JANUARY 9, 1998** SHEET **1** OF **1** REV. _____

NORTH SEDIMENT BASIN - QUANTITY TABLE - FILL VOLUME		
STATION	TOTAL AREA FT. ²	TOTAL VOLUME YDS. ³
57+25	237.7	88.04
57+10	527.2	212.47
57+00	588.7	206.65
56+90	392.1	181.63
56+75	233.7	173.83
END SECTION		129.83
GRAND TOTAL FT. ² & YDS. ³	1,979.4	992.45

* SUBSOIL BORROWED FROM EXISTING PILE = 992.45 YDS³



January 14, 1998

Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801

Attention: Mr. Daron R. Haddock

Re: Response to Deficiencies in Fan Portal Reclamation Plan, (Round 3), PacifiCorp, Cottonwood/Wilberg Mine, ACT/015/019-97C, Folder #8, Emery County, Utah.

PacifiCorp, ("Energy West") has reviewed the Technical Analysis, Findings and Deficiencies as received from the Division, dated December 18, 1997. This is the response from the Energy West deficiency reply dated September 29, 1997.

"Energy West" responds to the deficiencies that remain a concern by the Division and are listed below:

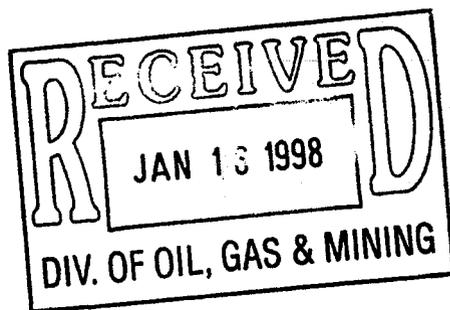
Regulation Cited **Deficiency - Bold** *Response -Italic*

1. R645-301-412.200, The permittee must provide the following in accordance with the requirements of said regulation. No Comments from the land owner concerning "Energy West" intentions to reclaim the Proposed Cottonwood Fan Portal Area and the Postmining Land Use.

Response: *As discussed with the Division previously, the managing agent for Energy West Mining, "Interwest Mining" is currently involved in negotiations with the land owner, L.D.S. Church. When the company and the Church reach final agreement, this deficiency will be addressed. Energy West will provide the Division a letter of consent from the land owner at least 60 days prior to construction. Therefore, a delay in providing this information is requested. Attached is a request letter from "Interwest" to the Church for additional time extension for your review.*

old info

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2. R645-301-512, Provide a map for the final site configuration including filling of the sediment ponds.

Response: During the submittal of deficiencies dated September 29, 1997, a drawing was included that represents final reclamation contours, see drawing KS1710D, Plate 5-5. The sediment basin area contours were not included at that time, as this was considered Phase I reclamation and the ponds were to remain in place. The drawing should have been identified specifically as Phase I Reclamation instead of Final Reclamation, therefore, changes to the title block of Plate 5-5 have been revised and a new drawing will be included to reflect final reclamation contours for the entire site. The new drawing will be identified as drawing # KS1742D, Plate 5-5A. Also, a cross-section drawing, Plate 3-10, was provided in the Round II submittal that reflects final reclamation cross sections of the basin areas with earthwork quantities provided. Plate 3-10 has been revised (cross-sections and contours) based on new cross section data.

3. R645-301-742.313, The plan must include backfilling ditch DD-4, this ditch will no longer be needed to achieve the purpose for which it was authorized. Backfilling and regrading to promote overland flow will approximate AOC for the regraded portion of the site.

Response: "Energy West" reviewed the previous submittal determination concerning the DD-4 ditch. Further inspection and survey work of the site confirms our previous decision to have the ditch remain intact. With this in mind, phone contact with the Division was made and arrangements to have Reclamation Specialist of the Division conduct an onsite field evaluation, specifically the DD-4 ditch situation and the question of final reclamation.

After the field inspection was conducted, it was concluded that the ditch would remain intact. This decision was based on the following parameters.

- 1. To fill in the ditch and try to create overland sheet flow (water) could jeopardized the outslope conditions as they exist at this time. Surface flows, to a certain degree, would still follow the natural slope towards the north. Concentrated flows would create erosion rills in the same path direction as the present DD-4 ditch line.*

(long range concerns)

Division of Oil, Gas and Mining

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2. The area has been proven stable and has not shown signs of deterioration over the past several years.

3. Established vegetation has provided a means of minimizing erosion. To fill in the ditch would cause severe damage to that vegetation growth, during construction efforts.

4. The terrace area that contains the DD-4 ditch is a natural buffer zone for rock falls and could prevent rocks from reaching the County road at the base of the CCFP site.

5. Backfilling the DD-4 ditch would not change the AOC significantly.

Therefore the text found on page 25, Sec. 761-General Comments and 762.100 will remain as submitted in Round II.

DD-4 Ditch Design and surface flow parameters are provided in the original submittal, volume 11, under the Hydrology section, appendix XIII. The ditch as shown on plate 3-10 x-section drawing, and drawing KS1742D, plate 5-5A depict a gradient flow of -3.2% through the pond reclamation area and into the existing County road bar ditch. The original ditch hydraulic designs are reflected on Map 3, (HA&L) and within the text of appendix XIII of volume 11. As defined in the regulations final reclamation structures, in this case a permanent diversion, require parameters to comply with a 100 year/ 6 hour storm event. This storm event will result in 2.2 inches of rainfall according to the NOAA Atlas 2, Precipitation-Frequency charts. Ditch DD-4 was designed utilizing the 10 year/ 24 hour storm event of 2.4 inches which results in peak flow in excess of the 100 year/ 6 hour storm event. Calculations to verify the original designs are located in Energy West's original volume 11, appendix XIII, pages 1 through 8.

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Page Four

The HA&L design for Ditch DD-4 channel indicates water velocities will be 3.09 fps to 3.92 fps for slopes of 6% and 12% respectively. These flows are below the 5 fps non-erodible permissible velocity for a ditch with these characteristics. Final reclamation of the Ditch DD-4 in the sediment basin area will have a slope of 3.2% utilizing the same design criteria as the original ditch design. The design flow of 0.7 cfs will result in a velocity of 2.03 fps and depth of 0.23 feet. As a result of the design criteria rip-rap will not be necessary, however, riprap will be installed at the confluence with County Road bar ditch. Using the SCS riprap design method a D_{50} of less than 1" was estimated. The riprap transition will be constructed with a D_{50} of 0.5 feet (refer to Drawing KS1742D, Plate 5-5A0.

4. R645-301-742.200, Provide a sediment control plan for controlling sediment following sediment pond removal.

Response: Refer to plan submitted in last response dated September 29, 1997, pages 25 and 26 which do in fact indicate "Energy West's" intentions to provide sediment control. Drawing # KS1742D, plate 5-5A will reflect silt fence locations. Page 26 of the previously submitted deficiencies will be revised, and reflect additional information concerning subsoil and topsoil pile sediment control. Attached for your review. The silt fence will be removed when vegetation has been established, with consent and approval by the Division.

5. R645-301-542.800, R645-301-820.100, After the details of the reclamation plan have been worked out and the entire plan is acceptable to the Division, the permittee will submit a overall reclamation cost estimate and, if necessary, revise the reclamation bond in accordance with that estimate.

Response: "Energy West" does commit to follow through with the above stated regulation requirements. When the remaining deficiencies have been resolved and accepted by the Division, a complete amendment to the plan will be provided (seven copies) which will include the latest reclamation cost estimates.

Please review the revisions to drawing KS1715D, Plate 5-4, of Volume 11 which have been made to reflect those contour and x-sections changes required for the pond areas, attached for your review.

Division of Oil, Gas and Mining
Coal Regulatory Program
January 14, 1998
Page Five

When the last of the items have been accepted a time extension of sixty days is requested to allow time to compile the additional copies of the permit amendment, Volume 11.

Thank you for your help and expertise in resolving these issues, if there are any further questions or concerns please call Charles Semborski at 687-4720 or Richard Northrup at 687-4822.

Sincerely,



Charles Semborski
Environmental and Geology Supervisor

cc: Blake Webster
Carl Pollastro
Susan Tuttle (File)
Chuck Semborski

**LICENSES, PERMITS AND APPROVALS OBTAINED BY APPLICANT TO CONDUCT
MINING ACTIVITIES**

<u>NAME AND ADDRESS OF ISSUING AUTHORITY</u>	<u>LICENSE OR PERMIT</u>	<u>ID NO. & DATE OF ISSUE</u>
US Geological Survey Conservation Division 2040 Administration Bldg. 1745 West 1700 South Salt Lake City, Utah 84104	Mining Permit (30CFR211)	Leases - SL-064900 et al 1/23/78
State of Utah Division of Oil, Gas & Mining 355 West North Temple 3 Triad Center, Suite 350 Salt Lake City, Utah 84180-1203	Mining Permit (interim)	ACT/015/018 5/11/78
	Hydrologic Monitoring Plan	10/10/79
	Petition for Bonding Surface Owners	12/28/77
	Mining Permit	ACT/015/019 7/6/84
	4th East Tube Conveyor Approval	9/20/85
	Approval to Mine 6th & 7th East Panels	6/25/86
	Cottonwood Fan Portal Hydrology Approval	10/8/86
Modify East Mountain Spring Monitoring Plan (Conditional Approval)	4/28/87	

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AMENDMENT TO
APPROVED Mining & Reclamation Plan
Approved, Division of Oil, Gas & Mining

by SW 92B date 8-27-92

C

Depth varies but consists mainly of bedded cobbles and rocks.

The hydrology of the site is limited to surface water. The natural drainages in the area trend NW/SE terminating into Grimes Wash. Rainfall projections for this area predict a 3.0 inch rainfall for the 100 year/24 hour precipitation event.

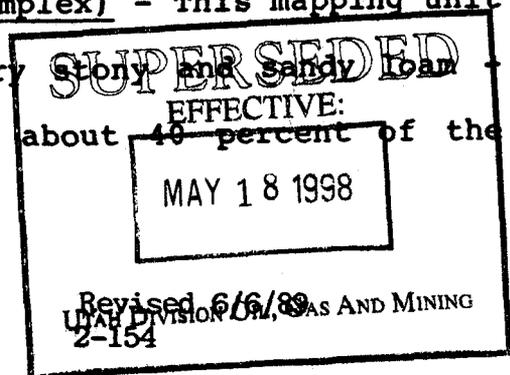
Geologic studies of the area (Hintze) identify the Ferron Sandstone as the first possible water bearing member of the Mancos Shale Formation. Oil and gas wells drilled in the area report no water when drilling through the Mancos Shale Formation. One well drilled on the proposed site encountered no water down to 4,900 feet from the surface. Another well drilled three miles south of the site encountered no water drilling through the Mancos Shale down to 11,500 feet from the surface (GR elev. 6,023'). These wells are the nearest to the proposed site on record. Records are on file at the DOGM.

Cottonwood Fan Portal

Soils Information (See page 2-157.1, for mapped areas).

A detailed soil survey of the proposed Cottonwood portal and surrounding area was carried out during late July 1979. The results, in part, are as follows:

Map Symbol AbG (Bb-Aa Complex) - This mapping unit is a complex consisting of Bb very stony and sandy loam 70 to 80 percent slopes. It is about 40 percent of the landscape.



It is on hillside slopes and ridges. Aa very stony sandy loam, 70 to 80 percent slopes is about 30 percent of the landscape and is on hillside slopes. Rock outcrops are about 30 percent.

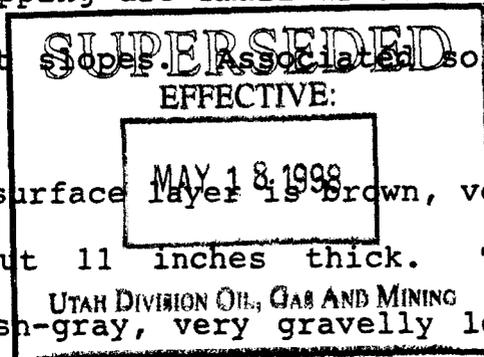
The general location and extent of this mapping unit is mainly on east and west facing slopes in the canyon bottom near the mine portal. It is moderately extensive.

Included with this unit in mapping are small areas of Cc stony sandy loam, 50 to 70 percent slopes.

Aa (abG) Very Stony Sandy Loam - This Aa soil is deep and well drained. It occurs on very steep hillside slopes (70-80%) at elevations of 7,200 to 7,800 feet. This soil formed in colluvium derived mainly from sandstone and shale.

The average annual precipitation is 12 to 15 inches. Mean annual air temperature is 44 to 46 degrees F and the average frost-free season is 80 to 90 days. This soil occurs on the lower mainly west facing slopes in the mine area. Slopes are 70 to 80 percent and are east and west facing. They are medium in length and convex in shape. Vegetation is dominantly pinyon, bullgrass, ephedra, juniper, rabbitbrush and serviceberry. Included in mapping are small areas of Cc stony sand loam, 50 to 70 percent slopes. Associated soils are Cc, Dd, and De soils.

In a typical profile the surface layer is brown, very stony sandy loam and loam about 11 inches thick. The underlying layer is light brownish-gray, very gravelly loam about 2.4 inches thick. The next layer is pale brown, very



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are located in steep rocky canyons on the south and east slopes of the mountain. The Cottonwood fan portal is located adjacent to Cottonwood Creek at the base of a steep rock southwest facing slope of East Mountain.

Methods

The mine plan was submitted to D.O.G.M. who, in turn, consulted the respected wildlife agencies for recommendations. Based on the Board's guidelines most of the wildlife information was obtained from existing records and publications. A field survey was conducted in 1981 to assess the occurrence of raptors and migratory birds nesting at the Cottonwood fan portal construction site. This survey is included in this report.

Wildlife habitats were coordinated with the designations used in the vegetative survey. With the vegetative map and the species list for the Wasatch Plateau a list of species likely to occur in the mine area was developed (Table 1).

Wildlife Habitats

The habitats within the mine plan area are rated as 1 and 2 by Bob Scott and others for coal lands of Utah (Scott, 1977). Around the mines the cliffs are considered raptor nesting habitat with the slopes below and the flat lands above the cliffs as raptor feeding areas. The lower slopes and alluvial fans below the mines are rated as deer winter range. This also includes the Cottonwood fan portal site.

All elk

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range is shown on Figure 1 in Map Packet 2-20.

The habitats at the Cottonwood fan portal, Cottonwood/Wilberg Mine and Des-Bee-Dove Mines are designated as pinyon-juniper with many open rock and cliff areas. At the Deer Creek Mine some riparian habitat exists along Deer Creek below the mine. The south facing slopes of this steep canyon are covered with pinyon-juniper and the north facing slopes are covered with a mixed conifer stand.

The habitat designations are listed below:

S - Sagebrush
G - Grassland
SD - Salt Desert Shrubs
R - Riparian
P-J - Pinyon-Juniper
MC - Mixed Conifer (includes Aspen Groves)

- a. Sagebrush - All the sagebrush communities are situated between 8,000 and 10,000 foot elevations along the top of the East Mountain plateau. They exist as short sage communities generally on ridge tops and flats. Aspen groves are scattered through the sagebrush communities on the flats and along the edges. A few areas around springs still harbor small wet meadows.
- b. Grassland - Two small areas on ridges in tributaries of Cottonwood Creek.
- c. Salt Desert Shrub - This plant community is located on the lower slopes adjacent to the access road to the Des-Bee-Dove Mines.

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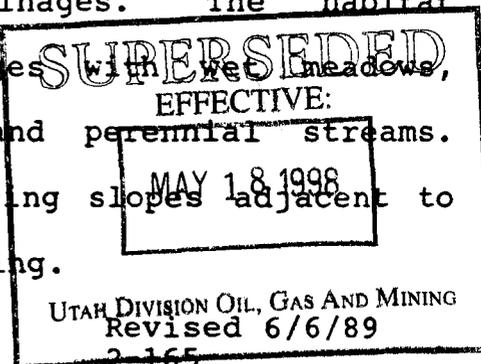
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vehicle traffic and human presence appears not to have disrupted the natural hunting patterns. Data from the period prior to mining lacking to evaluate the present situation.

The traffic on the mine access roads kills approximately eight (8) deer each year. This is not considered significant by DWR (personal communication with Larry Dalton). Mining impacts on golden eagles have been studied since 1986 in Newberry Canyon. No significant impacts have been identified to date. Nesting and production of young has continued uninterrupted (see Annual Monitoring Reports and Assessment of Mining Related Impacts in Newberry Canyon).

The construction of the Cottonwood fan portal will disturb about two acres of pinyon-juniper habitat on a steep rocky southwest facing slope. Some species of migratory birds of high federal interest could nest at this site. The most likely would be the western bluebird. This southwest facing slope also has the potential for snake dens. Below is listed a summary of certain reptile and amphibian species referred to in Utah Division of Oil, Gas and Mining letter to Utah Power and Light dated December 5, 1980.

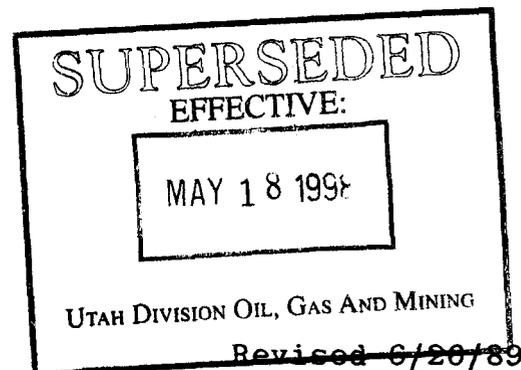
- a. Utah Mountain Kingsnake - These snakes are widely distributed throughout the mountains of Utah in specific localized drainages. The habitat requirements are drainages with wet meadows, brushy riparian areas and perennial streams. They use rocky south facing slopes adjacent to riparian habitat for denning.



The drainages around East Mountain lack these components for a preferred environment because many of the streams are eroded and lack meadows. Thus it is doubtful these snakes inhabit any of the disturbed areas other than below Cottonwood Fan Portal.

- b. Utah Milksnake - This snake could occur in the riparian areas and in the mixed conifer habitat. Most likely place would be in that portion of the drainages with mixed conifer vegetation.
- c. Tiger Salamander - These salamanders prefer quiet pools, ponds, or springholes. Most of these water types occur on top of East Mountain.

An assessment of deer use on the BLM portion of the permit area was initiated by the BLM in 1989. This investigation will be continued as part of the Cottonwood Mine Escarpment study. Data collection and analysis will be done in accordance with Interagency (BLM, USFS, DWR) Guidelines.



Fish and Wildlife (Cottonwood Fan Portal)

The Cottonwood portal is in pinyon-juniper habitat. A number of important vertebrate species are typical of this habitat within the region. The sparse vegetation and steep, dry conditions present at the portal are less suitable for wildlife than are densely vegetated portions of pinyon-juniper habitat on gently sloping terrain south and east of the mine property.

The mule deer is the most conspicuous large mammal in pinyon-juniper habitat in the mine vicinity. Other mammal species found in this habitat include black-tailed jackrabbit, mountain cottontail, coyote, badger, striped skunk, deer mouse, pinyon mouse, least chipmunk, hoary bat, and western big-eared bat (Brown et al, 1958).

Typical birds in pinyon-juniper habitat include the mourning dove, pinyon jay, western bluebird, western kingbird, American kestrel, and chipping sparrow (Brown et al, 1958). Chukar partridge inhabit the rocky escarpment areas near the Cottonwood/Wilberg portal area.

Dry surface conditions and the absence of standing water virtually preclude the presence of amphibians from pinyon-juniper habitat in the vicinity of the mine, but several reptile species are common. The side-blotched lizard, eastern fence lizard, sagebrush lizard, racer, gopher snake, and western rattlesnake are representative species in this habitat type throughout the region (Stebbins, 1966).

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Revised 5/2/84

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removed.

Pre-mining use of the land was for livestock grazing and wildlife habitat with some occasional timber cutting on top of East Mountain (see Land Use Map 2-19).

References

Bureau of Land Management August 1988, San Rafael Draft Resource Management Plan. Moab District, Utah.

Emery County, Zoning Plat Books, Castle Dale, Utah

U.S. Forest Service 1986, Land and Resource Management Plan. Manti-LaSal National Forest, Price, Utah.

Utah Division of Wildlife Resources, May 1982, Utah Big Game Investigation and Management Recommendations 1981-1982, Publication #82-3.

Emery County Zoning

- A-1 Agricultural Zone, contains the primary farming areas of the county.
- RA-1 Residential-Agricultural Zone, this is the area with the communities and the adjacent or intermixed agricultural lands.
- M&G-1 Mining and Grazing Zone, all of the county lands outside of the communities, farming areas and forest service boundary.
- I-1 Industrial Zone, specific areas near communities and highways reserved for industrial development.
- Ce-1 Critical Environmental Zone, general designation for all private lands within the forest boundary.
- Ce-2 Critical Environmental Zone, specific designation for certain land parcels especially those adjacent to recreation site in the forest.

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Land Use (Cottonwood Fan Portal)

The portal area has been the site of an earlier coal mining operation, the Johnson Mine. This earlier mine was opened in 1945 and mining methods were conventional for that

1909-1948 (see Part 2)

ventilating air across the longwall faces. The Cottonwood Canyon site located at the western extremity of the mine has proven to be the best location for the fan.

FACILITY DESCRIPTION

The installation of the proposed mine ventilation fan and appurtenances at the Cottonwood Canyon portal area will utilize the existing structures available to develop the facility. This development will utilize only a portion of the area covered in the exploration permit.

Based on present requirements, it is planned to divide the existing area into two separate classifications; the active area, and the reclaimed area. The active area will include the fan portal site, the area above the portal, access road, sedimentation basins, and soil stockpiles. All other areas are classified non-use and reclaimed in accordance with the exploration permit.

Existing Structures

Existing facilities, which include the access road to the Old Johnson Mine and two existing sedimentation basins, would be utilized in connection with the operation of the proposed Cottonwood fan.

The access road which originally served the old Johnson Mine presently extends from the Cottonwood Canyon Road at a point across from the Trail Mountain Mine office road to the old portals at elevation 7,315 feet and for a

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DAMS, EMBANKMENTS AND OTHER IMPOUNDMENTS

Sediment Ponds - Two MSHA ponds provide sediment control for the twenty acre disturbance associated with Cottonwood/Wilberg Mine. Two small sediment basins are used for sediment and water quality at Cottonwood Fan Portal. All structures have UPDES permits (see Existing Structures).

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The original Cottonwood/Wilberg/Des Bee Dove Waste Rock Disposal Site (Cells 1 through 7) requires no separate sedimentation pond as it is an earthen containment structure itself. An approved sedimentation pond was constructed at the current Waste Rock Disposal Site (operation startup 1990). The pond is covered under UPDES Permit No. UT0022896.

MSHA ponds are inspected monthly. All other structures are inspected quarterly by a qualified person and at least yearly by a registered professional engineer. A certified engineering report will be submitted to the regulatory authority annually. See Appendix XI for sediment pond safety factor calculations.

Construction of the ponds and waste rock site is according to the design discussed in Existing Structures. These designs were prepared under the direction of registered professional engineers. Basic construction of the mine site ponds includes: (1) excavation of pond area concurrently with dam construction, (2) emplacement of large boulders in dam for riprap, (3) installation of outlet works, (4) installation of 3 foot thick clay seal in each pond, and (5) establishment of vegetation to control embankment erosion. Specifics of Subchapter K compliance criteria are presented in Existing Structures.

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Revised 8/17/95
JUL -9 1996
3-32
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PRICE FIELD OFFICE

The power supply systems will be maintained by Utah Power & Light Company - Southern Division.

At the end of mine life, the system will be removed by Utah Power & Light Company - Southern Division. The gravel and foundation material at the substation sites will be used for backfill.

Mine Fans

With the division of the original Wilberg Mine into the Cottonwood/Wilberg mining complex there were some changes made in the ventilation systems.

After the Wilberg fire the northern portion of the mine was sealed and the fan removed. Recovery and rehabilitation of Wilberg Mine uses a small 150 HP exhaust fan located immediately north of the original 1000 HP fan which existed at the time of the fire.

Cottonwood Mine fan (not be confused with the proposed Cottonwood Canyon fan portal located in Cottonwood Canyon) is situated as shown on the facilities map (packet 3-16). Actually, this fan is the original fan used at Wilberg (1000 HP). Cottonwood Canyon fan portal as yet is still proposed.

Under normal operation, the fan is driven by a 1,000 hp electric motor as the prime mover. Through a clutch arrangement, a diesel engine is installed to provide backup for the electric motor. The electric motor and the diesel engine are installed in a motor house, separated from the mine ventilation fan and duct by a long shaft-type coupling.

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Revised 12/8/86
Revised 4/24/89

Fuel for the diesel engine is stored in a 1,000 gallon capacity horizontal fuel tank, located on a small earthen embankment approximately 14 feet above the fan house road. A 2-inch fill line permits filling the tank from the fan road. A buried 3/4 inch line supplies fuel to the engine.

The mine fan is inspected daily and greased as needed. The fan motor house and evase' will be painted periodically to maintain their appearance.

At the end of mine life all three fan installations will be dismantled and salvaged. The fan portals will be sealed.

Water Pollution Control Facilities

Drainage System - Two separate drainage systems are provided at the Cottonwood/Wilberg Mine site and are classified as "undisturbed" and "disturbed" collection systems. These systems are illustrated on Drawing MAP 1 "Disturbed Area Runoff Control Facilities". Details of these systems are in Appendix VIII. The "undisturbed" system collects uncontaminated water above the portal site and from side slopes adjacent to the site and conveys it past the disturbed area into the natural channel of Grimes Wash.

Undisturbed runoff is collected by concrete inlet boxes in both the right and left forks of Grimes Wash and conveyed by 72-inch pipes to a junction box in the plant yard area. From the junction box, a 90-inch culvert carries

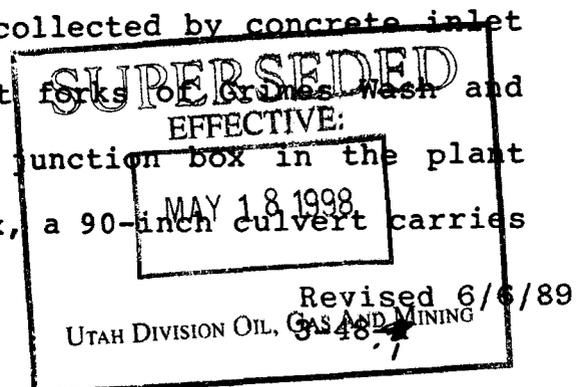
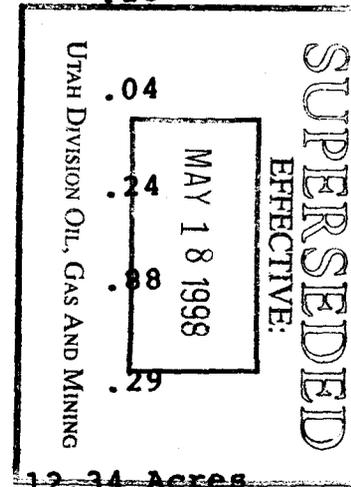


TABLE 5.1

COTTONWOOD/WILBERG MINE
ALTERNATIVE SEDIMENT CONTROL AREA (ASCA)

<u>SITE LOCATION</u>	<u>SEDIMENT CONTROL</u>	<u>ACREAGE</u>	<u>DRAWING</u>
Miller Canyon	Berm	.06 Total (1) 30' x 30' at each portal	Packet 1-3 CM-10370-WB
Sewer Absorption Field	Silt Fence	1.25	Packet 1-3 CM-10370-WB
Cottonwood Fan Portal Areas 3 thru 7	Strawbales, Silt Fence, Sediment Basin, Rock Gabions, Berm	8.1	Packet 3-13 CM-10501-CP
Waste Rock Site (Outslope)	Strawbales	1.3	Appendix VII CM-10361-WB
Guard Station	Silt Fence	.18	Packet 3-16 WS449E
Conveyor Bent Pad	Strawbales	.04	Packet 3-16 WS449E
Tube Conveyor Access Road	Silt Fence/ Strawbales, Berm	.24	Packet 3-16 WS449E
Wilberg Fan	Sediment Trap, Berm	.88	Packet 3-16 WS449E
DC 9th East Breakouts	Silt Fence	.29	Packet 3-16 WS449E
	TOTAL	12.34 Acres	

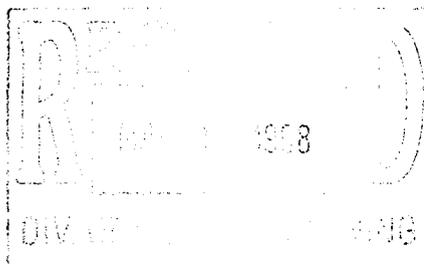




ACT\015\019 #2
Daron

March 11, 1998

Utah Coal Regulatory Program
Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84180-1203



Attention: Mr. Daron Haddock

Re: Amendment to Cottonwood Mine Permit, Proposed Cottonwood Fan Portal Reclamation, Volume 11, PacifiCorp, Cottonwood Mine, ACT\015\019, Emery County, Utah.

PacifiCorp, by and through its wholly-owned subsidiary, Energy West Mining Company ("Energy West") as mine operator, herewith submit for your approval an amendment to the **Cottonwood Mine Permit, Proposed Cottonwood Fan Portal Reclamation, Volume 11.**

GENERAL INTRODUCTION

As "Energy West" submits the final Cottonwood Fan Portal Reclamation Plan, Volume 11 amendment, it would seem prudent to re-aquaint everyone with the past history of this amendment. Listed below is a brief review in chronological order of the dialog between the Division and Energy West concerning revisions to the Cottonwood Fan Portal Reclamation Plan. When approved, Volume 11 will be added to the Cottonwood Mine Mining Reclamation Plan. The compiled information reflects all references from the original MRP and resolutions to deficiencies as outlined by the Division. Volume 11 involves the final reclamation plan of the proposed fan portal site in Cottonwood Canyon and includes revised reclamation cost estimates, both for the site and total MRP (Refer to attachments in the Bonding Section).

Chronology of Volume 11:

November 7, 1996

"Energy West" on November 7, 1996 sent a letter to the Division, announcing that "Energy West" intends on reclaiming the Proposed Cottonwood Fan Portal Site, and would commence work in 1997.

Huntington Office:
(801) 687-9821
Fax (801) 687-2695
Purchasing Fax (801) 687-9092

Deer Creek Mine:
(801) 381-2317
Fax (801) 381-2285

Cottonwood Mine:
(801) 748-2319
Fax (801) 748-2380

February 7, 1997

The Division as part of the regularly scheduled responsibilities under R645-303-211, a midterm permit review of the Cottonwood Mine was to be conducted during January of 1997. On February 7, 1997 "Energy West" was informed that this action was in progress.

March 19, 1997

The Division subsequently, upon finalizing the review, sent a Technical Analysis Report identifying deficiencies to the MRP was sent to Energy West on March 19, 1997. A response deadline to the T/A deficiencies was listed as May 16, 1997. The Division directed their review evaluation mainly towards the Cottonwood Fan Portal Reclamation Plan and Bond calculations.

March 28, 1997

The Division sent a letter on March 28, 1997 establishing a date for an on site visit of the Proposed Cottonwood Fan Portal area. This meeting would give all parties an opportunity to evaluate site conditions and concerns. This meeting was conducted on April 15, 1997.

May 5, 1997

The Division on May 5, 1997, followed up with a report of their evaluation and findings during the on site meeting conducted on April 15, 1997.

May 13, 1997

"Energy West" responded on May 13, 1997, to the Cottonwood Mine bond deficiencies, but request for time extension to allow proper consideration to resolve the deficiencies to Cottonwood Fan Portal Reclamation plan. The time extension request would allow Energy West to re-established survey baselines, recalculation of quantities, and improved mapping and drawings required. This response included a request for an additional on site review, including Office of Surface Mining (OSM).

May 22, 1997

The Division sent a letter of response on May 22, 1997 approving an extension of time until July 1, 1997. Within that letter it was mentioned that an on-site Highwall Study of said area would be conducted with OSM.

June 25, 1997

"Energy West" Environmental Engineering staff met with the Division in Salt Lake on June 25, 1997, for a preliminary review of the draft copy of Volume 11 to be submitted by July 1, 1997. During this review several items were brought into perspective that would require changes and revisions to the draft, Volume 11.

June 30, 1997

"Energy West" responded to the July 1, deadline and submitted Volume 11 on June 30, 1997

August 28, 1997

The Division replied with deficiencies still outstanding, received by "Energy West" on August 28, 1997. A new deadline for response of the deficiencies was set for September 29, 1997.

September 29, 1997

"Energy West" responded to the deficiencies on September 29, 1997.

October 1, 1997

A Highwall survey was conducted on October 1, 1997 at the Proposed Cottonwood Fan Portal site, with members from the Division, OSM and Energy West present. Discussion of the conditions faced with reclamation of the entire site as well as highwall issues were somewhat resolved and acceptance of the approach Energy West was planning seemed in line with all present.

December 18, 1997

The Division returned a letter dated December 18, 1997, indicating that some items were acceptable, but listed several areas which required further refinements. This letter gave a time extension to January 15, 1998.

January 12, 1998 Field Visit

"Energy West" after reviewing the items, made phone contact with the Division requesting a site visit to further evaluate some of the concerns related to hydrology and drainage. Subsequently, a visit was conducted on-site with a member of the Division's interdisciplinary staff, and these concerns were evaluated and decisions were made concerning final reclamation procedures. (DD-4 ditch)

January 14, 1998

"Energy West" responded to the latest deficiencies on January 14, 1998. Within that letter a request for time extension was made, requesting an additional 60 days to compile the seven volumes required as part of the amendment. One issue remains unresolved, the Post Mining Land Use and Reclamation approval by the land owner. This issue was explained in the previous response by Energy West.

February 12, 1998

The Division in response to the submittal dated January 14, 1998, replied with an approval to those deficiencies on February 12, 1998, with the exception to the reclamation cost and owner comments related to reclamation and land use.

March 11., 1998

"Energy West" The two remaining deficiencies have been address as follow:

Bonding: The Cottonwood Mine MRP bond estimate has been revised separating the Fan Portal from the main mine area (see attachment). In the Cottonwood MRP bond estimate, the Fan Portal is indicated as a seperate lump sum line item. A detailed reclamation cost estimate for the Fan Portal area has been developed and is addressed in Volume 11 (refer to the Bonding Section).

Land Owner Approval: **The owner comments related to reclamation and land use are still a concern. As stated previiously, when Interwest and the L.D.S. Church complete lease negotiations, Energy West will submit an owner comment to the Division. In any event, the Cottonwood Fan Portal reclamation will not be initiated until this issue is resolved.**

"Energy West" having addressed and complied with all the regulations from the Division concerning deficiency items per the midterm review, hereby submits the following items to be incorporated as part of the Cottonwood Mine Permit.

VOLUME 11

1. **R645-301-100, GENERAL**
Revised and accepted by the Division during the deficiency correcting procedures of the midterm review. Dated 6/30/97
2. **R645-301-200, SOILS**
Revised and submitted again September 29, 1997, deficiencies satisfied in return letter from the Division on December 18, 1997.
3. **R645-301-300, BIOLOGY**
Revised and submitted again September 29, 1997, deficiencies satisfied in return letter from the Division on December 18, 1997.
4. **R645-301-400, LAND USE**
Revised and approved on Feb.12, 1998 except for approval/comments from the land owner. As explained previously, Interwest Mining is currently involved in negotiations with current land owner, L.D.S. Church. When the negotiations are finalized comments from the land owner will be incorporated in Volume 11.
5. **R645-301-500, ENGINEERING**
Submitted June 30, 1997, deficiencies satisfied by the Division on August 28,

1997.

6. **R645-301-600, GEOLOGY**
Submitted and approved on June 30, 1997.
7. **R645-301-700, HYDROLOGY**
Revised on September 29, 1997, Division responded with further deficiencies.
Re-submitted on January 14, 1998 and approved on February 12, 1998.
8. **R645-301-800, BONDING**
Submitted on May 13, 1997, the bonding section was considered deficient until the reclamation plan was finalized and approved. The Fan Portal reclamation plan was approved on February 12, 1998. Attached is a complete reclamation costs for bonding for the Cottonwood Mine MRP and Fan Portal Area which reflect the revisions and updates necessary to comply with the midterm review deficiencies. The total reclamation cost estimate is included within Volume 11, in the Bonding Section, strictly for ease of transmittal, the pages 4-31.1 to 4-31.36 consisting of the estimated costs should be reviewed and when approved placed in the Cottonwood MRP, Volume 2, Chapter 4, after pages 4-30, and 4-31, which are now designated as blank pages within the permit.

The following items listed reflect the changes, revisions, deletions or additions to the Cottonwood Proposed Fan Portal Volume 11 or to the permit.

Volume 1, Introduction Section of MRP:

- Page 2, added **proposed** at bottom of page,
- Page 4, Removed most of the page and placed in Volume 11, introduction section.
- Page 12, only changes to page are the word **proposed** where fan portal is indicated.
- Page 14, several changes and deletions are indicated as reflected and hi-lighted/strike.
- Page 15, several changes, deletions are indicated and reflected by hi-lite/strike etc.

Volume 1, Chapter 1:

- Page 1-49, added **proposed** last paragraph, hi-lited.
- Page 1-54, " " "

Volume 1, Chapter 2:

- Pages 2-129 - 2-140, removed from MRP and placed in Volume 11, in the Biology section, pages 6 thru 19.
- Pages 2-141 and 2-142 removed from MRP and placed in Volume 11, in the Biology section, pages 20-21.

Archeological Report, copy of sections pertaining to CFP are added to Volume 11. Land Use section.

Volume 2, Chapter 2:

- Page 2-154, removed lower section of page referring to Fan Portal and placed in Volume 11, Soils section, Page 1 of 1979 soil survey.
- Page 2-155 thru 2-158.2, removed from MRP and placed in Volume 11, Soils section as

pages 1 to 6, of the 1979 soils survey.

Pages 2-160, 2-161, 2-165, 2-166, 2-168 revised, mostly added **proposed or deleted** where applicable. Replace with revised pages.

Pages 2-178 thru 2-180, revised, mostly adding **proposed or deleted** where applicable, replace revised pages.

Pages 2-159 thru 2-174, copy of these pages placed in Volume 11, Biology section as reference, some pages as listed above are revised.

CFP Impact Zone Survey of MRP, of Chapter 2, which follows page 2-174, remove and placed in Volume 11, **Biology Section**, pages 22-27.

Volume 2, Chapter 3:

Pages 3-20.1.1 thru 3-26, deleted and remove from MRP and revised in Volume 11, Engineering section as pages 3 and 4.

Page 3-32, revised in MRP, added **proposed** where applicable.

Page 3-48, 3-48.1, revised in MRP, hi-lited.

Page 3-51.2, which is Table 5.1, added **proposed**. Hi-Lited.

Page 3-52, revised in MRP, added **Proposed and deleted** where applicable.

Page 3-68, revised in MRP, added **proposed and changed pond to Basin**.

Volume 2, Chapter 4:

Page 4-1, of MRP revised, added **Proposed** hi-lited.

Volume 2, Chapter 4: Continued

Page 4-4.1 thru 4-4.3, removed from MRP, revised and placed in Volume 11, Soils section of Vol. 11, pages 8-10. Reference sheet labeled **from MRP Pages 8-10**. also page 4-4.1 revised from the MRP was added to the Land Use section of Volume 11. as Page 4.

Page 4-7, revised, removed portion from MRP and included in Volume 11, placed in Soils and Engineering sections, Page 12 and Page 7 respectively.

Page 4-10.2, delete page from MRP, see Volume 11, bonding section.

Page 4-27 thru 4-29, Remove from MRP, place in Volume 11, Biology section, as pages 33-35, revised. For reference of what was incorporated from the 1981 revegetation efforts. See page 31 and 32 for future reclamation plan.

Page 4-38.1, revised in MRP.

Page 4-40, revised in MRP and added to Volume 11, page 3 of Land Use Section.

Page 7, final reclamation section of MRP, item **K**, remove, see Volume 11 in bonding section.

Reclamation schedule is revised, and reclamation costs as described above are revised and are found in Volume 11 in bonding section, review and place in MRP, Volume 2, Chapter 4.

Volume 5, Map Section:

Plate 2-19, copy of Land Use Map placed in Volume 11, for reference.

Plate 3-7, remove from permit, not required, the access road is not required.

Plate 3-8, (4 of 4) remove from permit, replace with plate 5-3, placed in Volume 11.

Volume 6, Map Section:

Plate 3-10, remove from permit, has been revised and placed in Volume 11.

Plate 3-11, remove from permit, access road and portal pad not required.

Plate 3-12, remove from permit, not required, new x-sections are on plate 5-3 in Volume 11.

Plate 3-13, remove from permit, revised and placed in Volume 11, as Plate 3-13.

Plate 3-14, remove from permit, revised and placed in Volume 11, as plate 5-5.

Plate 3-16A, remove from permit, revised and placed in Volume 11, as plate 5-1.

Volume 6, Map Section:

Plate 3-27, copy placed in Volume 11.

Plate 4-6, remove from permit, revised and placed in Volume 11, as plate 5-1.

Plate 4-7, (8 of 8) remove from permit, revised and placed in Volume 11 as plate 5-3.

Plate 4-8, remove from permit, revised and placed in Volume 11 as same plate number.

Plate 4-9, remove from permit, revised and placed in Volume 11 as same plate number.

Volume 11, Maps and Drawings:

KS1691C, Placed in Biology section, raptor nest locations, revised.

Map 3, map section, Hydrology map

Plate 2-19, map section, Land Use Map

Plate 3-10, map section, No. and So. Sediment Basins, revised.

Plate 3-13, map section, Hydrology map, revised.

Plate 3-27, map section, typical drawing of sediment control, copy as reference.

Plate 4-8, map section, diversion ditch #UD3, revised.

Plate 4-9, map section, diversion ditch #UD3, revised.

Plate 5-1, map section, reclamation slope, surface facilities, revised.

Plate 5-2, map section, proposed soil placement, revised.

Plate 5-3, map section, reclamation slope x-sections, revised.

Plate 5-4, map section, sub and top soil x-sections etc. revised

Plate 5-5, map section, phase 1 reclamation map, revised.

Plate 5-5A, map section, phase 11, reclamation map, revised.

Plate 5-7, map section, final reclamation x-sections, revised.

If there any questions or concerns regarding this amendment submittal please call Chuck Semborski at 687-4720 or Richard Northrup at 687-4822.

Thank you again for your assistance and patience of this review and completion of the amendment.

Sincerely,



Charles Semborski

Environmental/ Geology Supervisor

cc: Charles Semborski
Carl Pollastro
Blake Webster
Susan Tuttle (file)
John Christensen

Application for Permit Processing Detailed Schedule of Changes to the MRP

Title of Application: *Amendment: Cottonwood proposed fan Portal*

Permit Number: ACT/015/019

Mine: COTTONWOOD/WILBERG

Permittee: PACIFICORP

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

			DESCRIPTION OF MAP, TEXT, OR MATERIALS TO BE CHANGED
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Vol. 1, Introduction Section, Pages 2, 4, 12, 14, 15, Revised-Hi-lite
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Vol. 1, Chapter 1, Pages 1-49, 1-54 Revised-In MRP-Hi-Lited
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input checked="" type="checkbox"/> REMOVE	Vol. 1, Chapter 2, Pages 2-129 Thru 240 of MRP-Removed + Placed in
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Volume 11, of the Biology Section, now pages 6 thru 19,
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input checked="" type="checkbox"/> REMOVE	Vol. 1, Chapter 2, Pages 2-141 thru 2-142 of MRP, Removed + placed in
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Volume 11, Biology Section, now pages 20, 21,
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Vol. 2, Chapter 2, Page 2-154, of MRP Revised, Placed in soils Section
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Volume 11. Page 1, of 1979 Soil Survey.
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input checked="" type="checkbox"/> REMOVE	Vol. 2. Chapter 2, Pages 2-155 Thru 2-158.2, Removed from MRP, Placed
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	in Volume 11, of Soils Section now page 1 to 6.
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Vol. 2, Chapter 2, Pages 2-160, 2-161, 2-165, 2-166, 2-168 of MRP Revised
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Vol 2, chapter 2, Pages 2-179 thru 2-180 of MRP, Revised
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Vol. 2, chapter 2, Pages 2-159 thru 2-174 of MRP, Revised some pages, ^{copy in} Vol. 11
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input checked="" type="checkbox"/> REMOVE	Vol. 2. chapter 3, Pages 3-20.1.1 thru 3-26, Removed from MRP + placed
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	in Volume 11, Engineering Section Page 3, 4.
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Vol 2, chapter 3, Page 3-32 of MRP, Revised
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Vol. 2, Chapter 3, Pages 3-48, 3-48.1 of MRP, Revised
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Vol. 2, Chapter 3, Page 3-51.2, Table 5.1, of MRP Revised
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Vol. 2, Chapter 3, Page 3-52 of MRP, Revised
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Vol. 2, Chapter 3, Page 3-68 of MRP, Revised
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Vol. 2, Chapter 4, Page 4-1, of MRP, Revised
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input checked="" type="checkbox"/> REMOVE	Vol. 2, Chapter 4, Pages 4-4.1 thru 4-4.3 of MRP, Remove + Place in
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Volume 11, Soils Section, now pages 8-11.

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

APPLICATION FOR PERMIT PROCESSING

Permit Change <input checked="" type="checkbox"/>	New Permit <input type="checkbox"/>	Renewal <input type="checkbox"/>	Transfer <input type="checkbox"/>	Exploration <input type="checkbox"/>	Bond Release <input type="checkbox"/>	Permit Number: ACT/015/019
Title of Proposal: <u>Cottonwood Mine: Cottonwood Canyon Proposed Fan Portal Amendment</u>						Mine: COTTONWOOD/ WILBERG
						Permittee: PACIFICORP

Description, include reason for application and timing required to implement: Amendment to the Cottonwood proposed Fan Portal Reclamation Plan,

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.

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

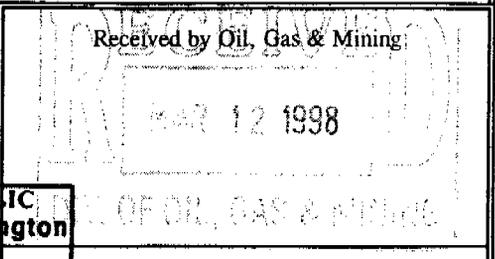
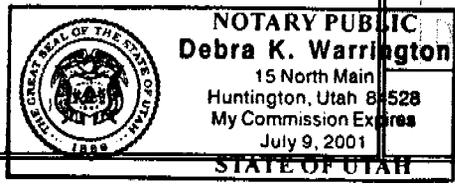
Attach 7 complete copies of the application.

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. (R645-301-123)

Charles A. Semborski Charles A. Semborski - Geology/Permitting Supervisor 2/18/98
Signed - Name - Position - Date

Subscribed and sworn to before me this 18th day of February, 1998

Debra K. Warrington
Notary Public 7-9 1991
My Commission Expires: STATE OF Utah COUNTY OF Emery



ASSIGNED TRACKING NUMBER

Application for Permit Processing Detailed Schedule of Changes to the MRP

Title of Application: *Amendment: Cottonwood Proposal for Portal*

Permit Number: ACT/015/019

Mine: COTTONWOOD/WILBERG

Permittee: PACIFICORP

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

			DESCRIPTION OF MAP, TEXT, OR MATERIALS TO BE CHANGED
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Vol. 2, chapter 4, Page 4-4.1 of MRP was added to Vol. 11, in the</i>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Land Use Section, new page 4.</i>
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Vol. 2, Chapter 4, Page 4-7 of MRP, Revised, Part has been included</i>
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>in Volume 11, Soils Sect. Page 15 12. + To Eng. Sect. now Page 7</i>
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Vol. 2, Chapter 4, Page 4-10.2, Page Revised in MRP. (Delete)</i>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input checked="" type="checkbox"/> REMOVE	<i>Vol. 2, Chapter 4, Page 4-27 thru 4-29, Remove from MAP and place in Vol.</i>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>11, Biology Sect. pages 33-35. (Revised)</i>
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Vol. 2, Chapter 4, Page 4-35.1, of MRP, Revised</i>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Vol 2, Chapter 4, Page 4-40 of MRP, Revised, and added to Vol. 11,</i>
<input checked="" type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Page 3 of Land Use Section.</i>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Copy of Archeological Report from MRP Chapter 2, Sections pertaining to</i>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>CFP added to Volume 11, Land Use Section.</i>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input checked="" type="checkbox"/> REMOVE	<i>CFP Impact Zone Survey of MRP, chapter 2, following page 2-174 of MRP</i>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>removed + placed in Volume 11, Biology Section, now pages 22 to 27</i>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input checked="" type="checkbox"/> REMOVE	<i>Reclamation Schedule - MRP following page 4-32 of Chapt. 4.</i>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Placed copy in Vol. 11, (Schedule will be Pages 4-31.1 + 4-31.2 of MRP</i>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Reclamation Cost + Procedures 4-31.3 to 4-31.36</i>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input checked="" type="checkbox"/> REMOVE	<i>Reclamation Costs, Chapter 4, Page 7, of MRP, Removed</i>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Reclam. Breakdown Chapter 4, Item 3-K, of MRP Revised,</i>

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

reclamation are described in the Reclamation Section. Existing runoff and stream channel diversion are described in Operation Plan.

TRANSPORTATION FACILITIES (R645-301-527)

The Cottonwood/Wilberg Mine operation utilizes roads and conveyors in association with facilities described in Operation Plan. All portal facilities are shown on Drawing 3-16. A description of the construction, maintenance, and removal of each transportation facility at the Cottonwood/Wilberg area follows.

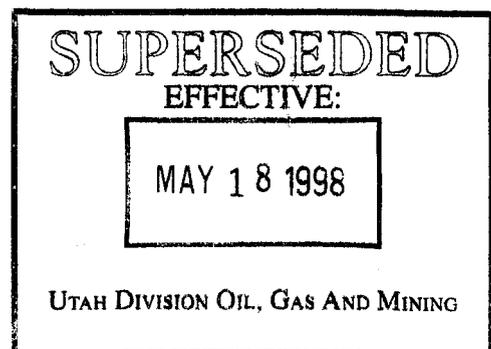
Cottonwood Canyon fan portal facilities associated with the Cottonwood/Wilberg Mine will utilize an access road. The access road description, specifications, and plans are incorporated in the Cottonwood Canyon fan portal section of the Mine Operation section, also see Map Packet 3-11.

Cottonwood/Wilberg facility plans were reviewed and approved prior to construction by the regulatory agencies. Agencies participating were the USFS, EPA, BLM, DOGM, and Utah State Department of Social Services.

Roads

There are five facility roads at the Cottonwood/Wilberg portal, identified as follows:

- a. Haul Road
- b. Truck Turn-Around
- c. Service Road
- d. Portal Road
- e. Fan Access Road

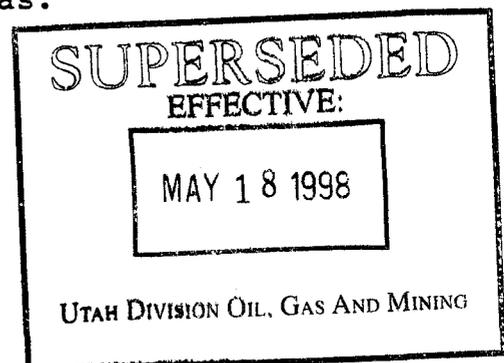


- 001 Wilberg Mine water discharge,
- 003 Wilberg portal sedimentation pond discharge,
- 002 Cottonwood portal sedimentation pond discharge,
- 004 Miller Canyon ventilation portal discharge.

Approval of the sedimentation ponds by the appropriate state and federal agencies has been given for the Wilberg portal ponds. Sedimentation ponds associated with the Cottonwood exploration work has received D.O.G.M. approval. Company states that the ponds meet the performance standards of Subchapter "K" and require no modification.

Lower Service Area

This area is at the confluence of Grimes Wash and a tributary (right fork) that enters from the northeast. Three terraced areas have been constructed for disposition of coal which is received from the mine entries. The silo area, at 7,428' elevation, lies astride the gulch, 300' north-south and 100' east-west, with a storage yard at the north end. The crusher-breaker area is on the west side of the gulch at an elevation of 7,396' running 420' north-south and averaging 70' wide. the load-out area is at 7,387' elevation and occupies about 300' diagonally across the gulch including the haul road and irregularly shaped storage areas.



Revised 11/21/83

RECLAMATION PLAN

Structure Removal

Once mining has ceased, estimated ~~2022~~, the surface facilities will be dismantled and removed from the permit area.

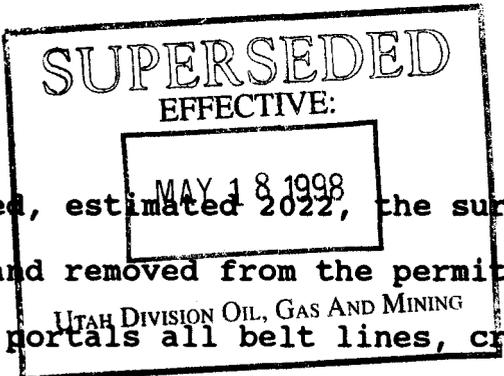
Starting at the mine portals all belt lines, crushing and screening systems, electrical systems, truck loadout surface building and fan installations will be torn down and hauled from the permit area.

The concrete silo will be torn down, broken up and buried against the east highway cut in the lower parking lot. All other concrete foundations that would be above final grade will be removed and buried with the silo material.

Portal Sealing

Final stages of mining (second mining), as pillars are extracted near the portal entrances inside office and warehouse facilities, will be dismantled and portal sealing will begin. Wilberg's portal entries are all updip of the extracted seam and require no drains or special hydrological containment seals except the Cottonwood fan portal drainage. (see Protection of the Hydrological Balance section). Seals are proposed as shown on Figure 1.

Because of their remote and inaccessible location from the surface, the following portals and breakouts will have to be completed from inside the mine: Channel Canyon, 7th West "Miller Canyon", Cottonwood Mine belt portal. The Channel Canyon escape ladder will remain to allow mine personnel access to portals for



AMENDMENT TO

APPROVED Mining & Reclamation Plan
Approved, Division of Oil, Gas & Mining

4-1

REVISED 7/20/92

BY JK QD date 8/24/92

The Cottonwood Canyon fan portal was originally intended for ventilation of the Wilberg Mine as it developed westward. The portal site was excavated in 1980 to expose the coal seam and build a soil pad to support the fan house and other structures. During excavation all loose materials (dirt and rocks) were removed down to the solid rock ledges which are present now. Topsoil and Subsoil from the area was stockpiled for the eventual reclamation. Due to changes in the mine plan the fan portal has not been required as of this writing but remains a viable possibility for future development.

The original contour map was used to determine the pre-mining configuration and to establish the basis for how the disturbed area should be recontoured. The original slopes ranged from 20 percent to over 100 percent with the most common ranging from 50 to 80 percent. A stability analysis performed by Rollins, Brown and Gunnell, Inc. in 1980 determined that the disturbed area had an operating safety factor of 1.5 on a slope of 36 degrees (73%) (Letters dated May 13, 1980 and September 23, 1980, Rollins, Brown and Gunnell, Inc., Appendix XVIII). Therefore all backfilled slopes will be constructed with a 67% grade which will be well within the stability requirements for final reclamation and closely match the original contours.

Only the coal seam will be completely backfilled with the subsoil material and covered with topsoil to a depth of one foot. The exposed rock layers above the coal seam will

SUPERSEDED
EFFECTIVE:
MAY 18 1998
UTAH DIVISION OF OIL, GAS AND MINING

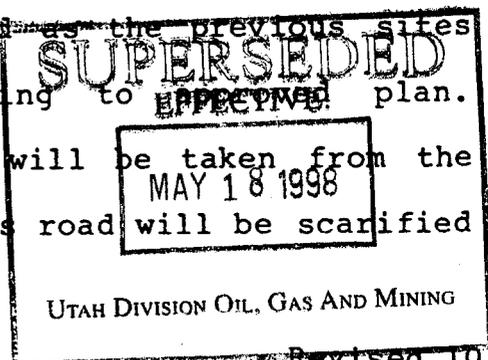
remain as they are. The height of each of the rock layers and the corresponding slopes are representative of the naturally occurring slopes in the surrounding area and the geomorphic processes of the area. Backfilling activities on these rock layers would produce a less stable slope and should be avoided.

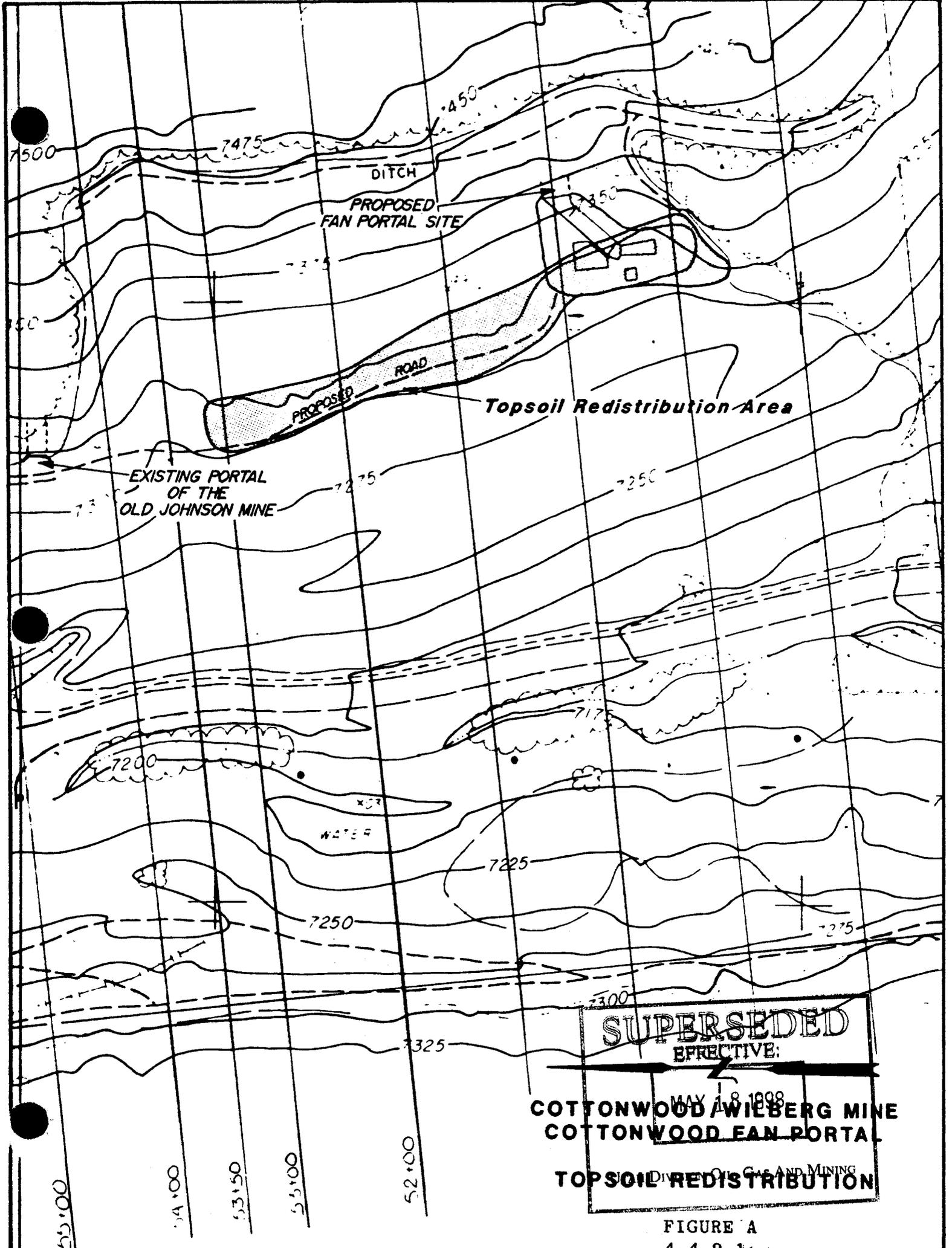
Backfilling of the coal seam will require 5930 cubic yards of subsoil and 930 cubic yards of topsoil to accomplish the design goals. The existing subsoil stockpile contains 7960 cubic yards and the topsoil pile contains 990 cubic yards. Excess subsoil materials will be used to restore the pre-existing Johnson Mine access road in accordance with UMC 817.176. This will require an additional 1750 cubic yards of material. Any remaining soil will be distributed over the areas where the soil stockpiles were located and reclaimed according to the revegetation plan, page 4-27.

Refer to Utah Power and Light Mining Division Drawings Cottonwood Fan Portal Topography Cross-Section, CM-10406-CP and Reclamation Cross-Sections, CM-10813-CP, (Maps 4-6 and 4-7), and Figure A page 4-4.2.1, for details.

Item 3-L Waste Rock Storage Site:

At final reclamation of the site Cell #7 will be the only area left to be reclaimed ~~as the previous sites~~ will have been completed according to ~~approved~~ plan. material to cover the waste rock will be taken from the perimeter berms. The unpaved access road will be scarified prior to revegetation.





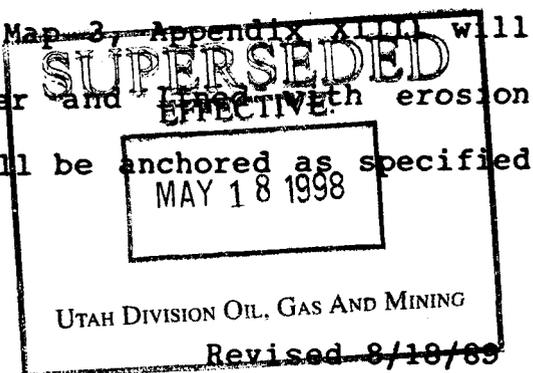
Equipment and materials will be transported to the site with a helicopter.

The diversion ditch will be backfilled using the material present in the outer shoulder and berm (see Map CM-10827-CP, Packet 4-9). This will require 176.6 cubic yards of material. Approximately 117.4 cubic yards are available in the shoulder and berm area. Additional material required for backfilling and water bar construction will be obtained during sediment pond removal and transported to the site by helicopter. Water bars will be constructed at locations indicated on Drawing CM-10828-CP, Packet 4-8. Approximately 15 cubic yards of material will be required for the nine (9) water bars.

The water bars will be installed diagonally across the backfilled ditch and bench. They will extend from the up-hill slope to the brow of the down-hill slopes. Rip-rap will be placed as indicated on Drawing CM-10828-CP to prevent erosion. The water bars will direct the overland across the reclaimed ditch and down the face of the slope.

Areas of potential overland flow concentrations will be protected with erosion control matting placed beneath rock rip-rap.

During removal of the sediment basins, the disturbed drainage ditch (DD-4, Map 3, Appendix A) will be recontoured with a D-6 Dozer and ~~EFFECTIVE~~ erosion control matting. The matting will be anchored as specified

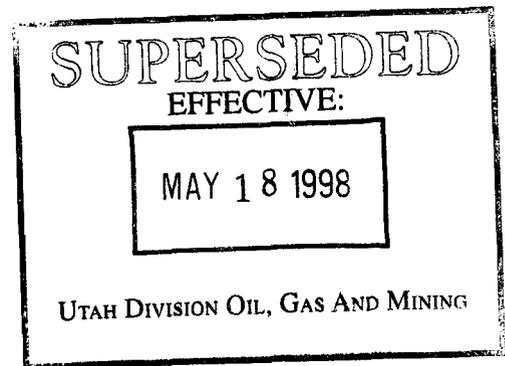


by the manufacturer.

~~Following backfilling, grading and contouring, the areas disturbed during final reclamation will be revegetated as described on Pages 4-27 thru 4-29 (Revised 4/24/89). Sediment control (i.e. silt fence, straw bales, etc.) will be installed to control sediment until bond release is achieved.~~

Item 3-L Waste Rock Storage Site:

Final reclamation of the site Cell #7 ~~will be the only area left to be reclaimed~~ has been completed as along with the previous sites ~~will have been~~ which were completed according to the approved plan. Material to cover the waste rock ~~will be~~ was taken from the perimeter berms. The unpaved access road ~~will be scarified prior to revegetation~~ has been relinquished to the BLM for use by Texaco to serve drill site #35-14.



Revised 8/18/89
Revised 7/25/97
4-4.4

Sediment Control Structure Removal

Once the bonding period is complete and revegetation is satisfactory the sediment ponds at Cottonwood/Wilberg and Cottonwood Canyon Fan Portal will be backfilled and graded.

Material in the embankments will be used as backfill.

Final Reclamation Slope Stability

The final contours and slopes will be reconstructed to approximate original contour. No reconstruction slopes are greater than 1.5h:lv.

Cottonwood/Wilberg Facilities Area

Slope stability and mass balance analyses were performed by Johansen and Tuttle Engineering in 1989 (See Appendix IV). The following is a summary of the results of these.

Maximum Height of Fill (H) = 60'

C = 0

γ = 120 pcf

Slope = 1.5h:lv

ϕ = 40° (min) SF = 1.3

Cottonwood Canyon Fan Portal Area

Using the same format and information as was used for stability analysis of the existing structures, calculations were made for the final slopes.

Maximum Height of Fill (H) = 90'

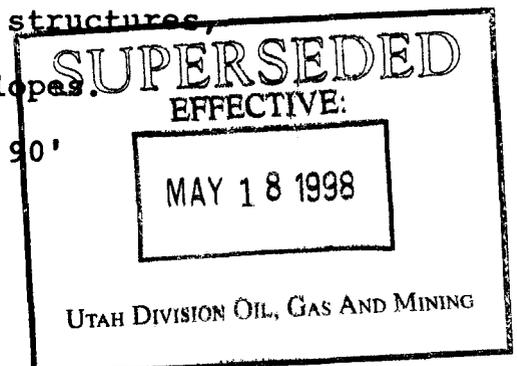
C = 1872

γ = 108 pcf

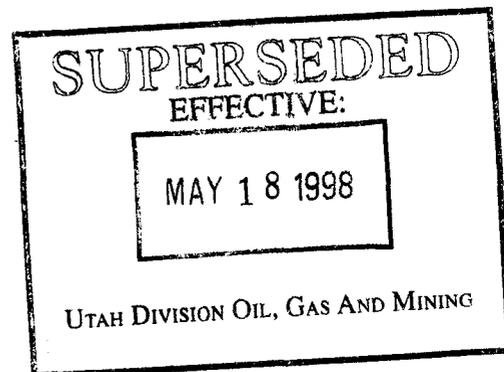
Slope = 1.5h:lv

ϕ = 27.3° SF = 1.5

Roberts & Schaefer specifications for Class C fills will be used. (See information following page 3-73.)



UP&L commits to submitting a complete reclamation plan for the Cottonwood fan portal area within thirty (30) days of permit renewal. This will include a grading and drainage plan.



Revegetation Plan for Cottonwood Fan Portal Area

Disturbed areas and soil piles of the Cottonwood portal area total about seven acres. Elevation is approximately 7,200 feet with a west and southwest exposure. On the steeper portion of the disturbed area, slope varies from 35-40°. The native plant community is dominated by Utah juniper and pinyon pine. However, both Douglas fir and White fir also occur. Common grasses are Salina Wildrye, Western Wheatgrass and Indian Ricegrass. Total aerial plant cover is about 40 percent. Soils are probably moderately alkaline and saline (results of soil analyses are given in Table 1). Surface soil texture is a silt loam. Topsoil is shallow and rocky.

Table 1: Soil Analysis

<u>Log No.</u>	<u>Site</u>	<u>pH</u>	<u>ECe</u>
1876	Topsoil	8.1	1.85
77	Topsoil	7.8	6.4
78	Subsoil	7.8	8.4
79	Subsoil	7.7	6.0

Revegetation of the Cottonwood Fan Portal soil piles and disturbed slope was implemented in 1981. The techniques outlined on page 4-29 were utilized with the exception of Items 6 and 8. An irrigation system was installed at the time of initial seeding and the area was irrigated for several growing seasons. The seed mixture and plantings listed in Table 2 were used, with the addition of shadscale, Ephedra and Pinyon Pine container stock. The shrub plantings were randomly placed along the terraces rather than clumped as described in Item 6.

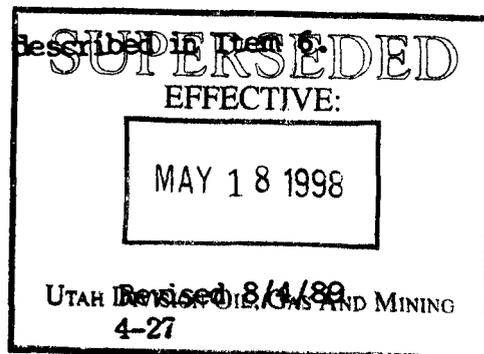


Table 2: Cottonwood Fan Portal Seeding and Planting Rates

Seed Mixture:

<u>Common Name</u>	<u>Scientific Name</u>	<u>Lbs/Acre</u> PLS
<u>Grasses</u>		
Western Wheatgrass	<u>Agropyron smithii</u> var. Rosanna	6
Great Basin Wildrye	<u>Elymus salinus</u> var. Magnar	2
Indian Ricegrass	<u>Oryzopsis hymenoides</u> var. Paloma	4
<u>Forbs</u>		
Pacific Aster	<u>Aster chilensis</u>	0.2
Yellow Sweetclover	<u>Melilotus officinalis</u>	2
Northern Sweetvetch	<u>Hedysarum boreale</u>	10
	Seed Total	24.2
<u>Plantings</u>		
Four-wing Saltbush	<u>Atriplex canescens</u>	250
Big Sagebrush	<u>Artemisia tridentata</u>	250
Little Rabbitbrush	<u>Chrysothamnus viscidiflorus</u>	250
Utah Serviceberry	<u>Amelanchier utahensis</u>	250
	Total	1,000

During backfilling and grading, all acid and toxic materials will be covered with at least four (4) feet of non-toxic material. When feasible, this will occur within 30 days after the material is first exposed. Temporary storage of the material, beyond 30 days must be approved by the Division.

Following backfilling and grading, the surface of the backfilled material will be in an uncompacted rough condition. If areas develop where the surface is not in such condition, the material will be ripped and roughened using track-hoes, dozers and/or hand tools to eliminate slippage surfaces and promote root penetration.

Topsoil material will be redistributed on the regraded areas using backhoes, excavators and dozers to achieve redistribution to an average depth of one foot over the regraded area.

Following redistribution the topsoil will be sampled and analyzed as described on page 4-15 for fertility and other parameters as listed.

Recent vegetation monitoring indicates the revegetation efforts at the Cottonwood Fan Portal can be successful (see 1987 and 1988 Vegetation Monitoring Reports). Therefore, the soil material, species and methods, discussed on pages 4-4.1, 4-4.2 and 4-18.2 thru 4-20.1, are expected to be appropriate for final reclamation at this site.

Maintenance, monitoring and revegetation success will be the same as detailed on pages 4-20.1 thru 4-21.

WILBERG COAL MINE RECLAMATION SCHEDULE

#	1st YEAR RECLAMATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1	STRUCTURE REMOVAL												
	Wilberg Mine												
	Cottonwood Fan Portal												
2	CLOSURES-PORTALS & VENTILATION												
	Wilberg Mine												
	Cottonwood Fan Portal												
3	HAULING, BACKFILLING, COMPACTION, & GRADING												
	Wilberg Mine												
	Cottonwood Fan Portal												
	Waste Rock Storage Site												
4	ACID & TOXIC MATERIAL HANDLING												
	Wilberg Mine												
	Cottonwood Fan Portal												
	Waste Rock Storage Site												

SUPPLEMENTED
 DATE: _____
 M 1998
 UTAH DIVISION OF MINES AND MINING

**WILBERG COAL MINE
RECLAMATION SCHEDULE
(cont.)**

#	1st YEAR RECLAMATION (cont.)	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
5	INSTALL RIP RAP DRAINAGE CHANNELS												
	Wilberg Mine												
	TEMPORARY SEDIMENTATION CONTROL FACILITIES												
6	Wilberg Mine												
	Cottonwood Fan Portal												
	Waste Rock Storage Site												
7	SOIL SAMPLING & SEED BED PREPARATION												
	Wilberg Mine												
	Cottonwood Fan Portal												
8	Waste Rock Storage Site												
	FERTILIZING & MULCHING												
	Wilberg Mine												
	Cottonwood Fan Portal												
	Waste Rock Storage Site												

SUPERSEDED
 EFFECTIVE
 MAY 1 1985
 UTAH DIVISION OF OIL, GAS AND MINING

**WILBERG COAL MINE
RECLAMATION SCHEDULE
(cont.)**

#	1st YEAR RECLAMATION (cont.)	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
9	SEEDING & PLANTING												
	Wilberg Mine			■							■		
	Cottonwood Fan Portal			■							■		
	Waste Rock Storage Site										■		
10	10 YEAR REVEGETATION & MONITORING												
	PLANT MONITORING- DISEASE & PEST CONTROL												
	Wilberg Mine		■	■	■	■	■	■	■	■	■	■	■
	Cottonwood Fan Portal		■	■	■	■	■	■	■	■	■	■	■
Waste Rock Storage Site		■	■	■	■	■	■	■	■	■	■	■	
11	SOIL STABILIZATION - RILLS & GULLIES												
	Wilberg Mine		■	■	■	■	■	■	■	■	■	■	■
	Cottonwood Fan Portal		■	■	■	■	■	■	■	■	■	■	■
	Waste Rock Storage Site		■	■	■	■	■	■	■	■	■	■	■

SUPERSEDED
EFFECTIVE
MAY 18 1993
UTAH DIVISION OF OIL, GAS AND MINING

**WILBERG COAL MINE
RECLAMATION SCHEDULE
(cont.)**

#	10 YEAR REVEGETATION & MONITORING (cont.)	1st YEAR	2nd YEAR	3rd YEAR	4th YEAR	5th YEAR	6th YEAR	7th YEAR	8th YEAR	9th YEAR	10th YEAR
	CONTINGENT SEEDING & PLANTING										
12	Wilberg Mine		■			■					
	Cottonwood Fan Portal		■			■					
	Waste Rock Storage Site		■			■					
	REVEGETATION INVENTORY FOR BOND RELEASE										
13	Wilberg Mine										■
	Cottonwood Fan Portal										■
	Waste Rock Storage Site										■
	SEDIMENT CONTROL STRUCTURE REMOVAL										
14	Wilberg Mine										■
	Cottonwood Fan Portal										■
	Waste Rock Storage Site										■

**SUPERSEDED
EFFECTIVE
MAY 18 1998
UTAH DIVISION OIL, GAS AND MINING**

<u>Item #</u>	<u>Description</u>	<u>Equipment</u>	<u>Hours</u>	<u>Labor</u>	<u>Hours</u>	<u>Total Hours</u>	<u>Construction Days</u>	
3-K	Cottonwood Canyon Fan Pad & Access Road	826B D8K 988B 769D - 2 ea.	68.0 68.0 68.0 68.0	5 Operators	68.0	7,571.00	3	
3-L	Waste Rock Site	621B - 2 ea. D8K	12.3 12.3	3 Operators	12.3	4,627.00	1.6	
TOTALS							\$264,824.00	77.7

INSTALL RIPRAP DRAINAGE CHANNELS

<u>Item #</u>	<u>Description</u>	<u>Equipment</u>	<u>Hours</u>	<u>Labor</u>	<u>Hours</u>	<u>Total Hours</u>	<u>Construction Days</u>	
4-A	Toxic materials are handled under Item 3. Materials will be tested prior to final reclamation.							
5-A	Place Riprap Remove Culvert	988B 235 769B - 2 ea.	141.0 141.0 141.0	4 Operators 2 Laborers	141.0 141.0	\$70,974.00	12.5	
6-A	Temporary Sedimentation Wilberg	D6	24.0	1 Operator 1 Laborer	24.0	2,377.00	3.0	
6-B	Temporary Sedimentation Cottonwood	D6	8.0	1 Operator 1 Laborer	8.0	792.00	1.0	
TOTAL							\$ 3,169.00	4.0

SUPERSEDED
EFFECTIVE:
MAY 18 1998

TEMPORARY SEDIMENTATION CONTROL FACILITIES

UTAH DIVISION OF OIL, GAS AND MINING

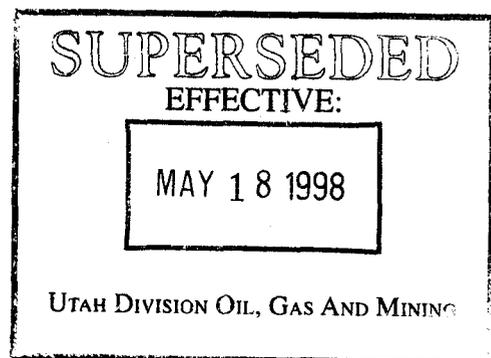
SEEDING AND PLANTING

9-A	Seeding 42.5 Acres	Flatbed	85.0	1 Supervisor 3 Laborers	85.0	\$10,151.00	11 Days
9-B	Transplanting	Flatbed Truck	180.0	1 Supervisor 3 Laborers	180.0	21,496.00	22 Days
9-C	Seed, Mulch, Fertilizer, Plants and Netting	None - Material 17 Acres @ \$2460/AC. 25.5 Acres @ \$1460/AC.		None - Material		79,050.00	Material
9-D	Temporary Fence at Waste Rock Site	Material & Labor				5,000.00	
	TOTAL					<u>\$115,697.00</u>	<u>33 Days</u>

SUPERSEDED
EFFECTIVE:
MAY 18 1998
UTAH DIVISION OIL, GAS AND MINING

rehabilitation to allow for vegetation success.

The Cottonwood Fan Portal site is located on fee land within Forest Service grazing allotments and will be rehabilitated to meet its premining land use of grazing and wildlife habitat.



PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES (784.17)

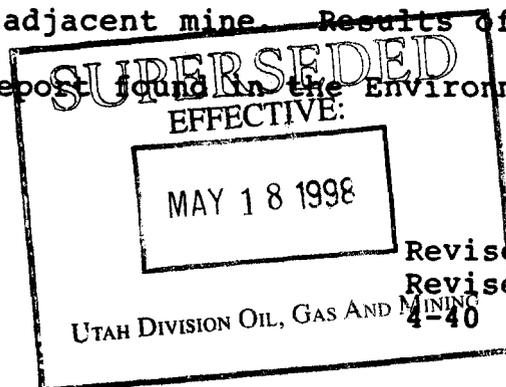
No public parks are located in or adjacent to the permit area.

Cultural resource information contained in this application was based on field surveys contracted to A.E.R.C. (Archeological Environmental Research Corporation) and conducted under the auspices of Richard Hauck.

Several separate surveys were conducted. Prior to the construction of the Wilberg Mine portal site and associated offsite facilities, archeological surveys were conducted. Results of these surveys disclosed several sites adjacent to Grimes Wash. These reports are included in the Environment section

During the planning of the Cottonwood fan portal site and utility corridor, an archeological survey was conducted. It also identified several sites. Although this project has since been reduced to only the fan portal, this report is also included.

For lands within the permit area not covered by planned surface disturbances, but yet could be affected by subsidence, a general 15 percent random survey was conducted. Basis of this survey was extrapolated from requirements mandated by OSM for authorization to mine coal from the Des-Bee-Dove Mine, an adjacent mine. Results of this survey are contained in the report found in the Environment section.



Revised 11/21/83
Revised 3/1/89

UTAH DIVISION OIL, GAS AND MINING
4-40



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

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801-538-7223 (TDD)

Michael O. Leavitt
Governor

Lowell P. Braxton
Division Director

June 22, 1998

Chuck Semborski, Environmental Supervisor
Energy West
P.O. Box 310
Huntington, Utah 84528

Re: Copies of Approved Fan Portal Reclamation Plan, PacifiCorp, Cottonwood/Wilberg Mine, ACT/015/019-97C, Folder #3, Emery County, Utah.

Dear Mr. Semborski:

The Division approved amended plans for reclamation of the Cottonwood Fan Portal at the Cottonwood/Wilberg Mine on May 18, 1998. At that time, a copy of the changes were sent to you, however, it was later brought to our attention that some of the approved information did not get transmitted. We are now enclosing that approved information for your records. This should complete the amendment process for the Cottonwood Fan Portal amendment.

If you have any questions regarding the amended plans, please don't hesitate to call.

Sincerely,

Daron R. Haddock
Permit Supervisor

tam
Enclosure

cc: Ranvir Singh, OSM
Richard Manus, BLM
Janette S. Kaiser, USFS, 2 copies
Mark Page, Water Rights, w/o
Dave Ariotti, DEQ, w/o
Bill Bates, DWR, w/o
Price Field Office

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

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
Lowell P. Braxton
Division Director

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801-538-7223 (TDD)

May 18, 1998

Chuck Semborski, Environmental Supervisor
Energy West
P.O. Box 310
Huntington, Utah 84528

Re: Copies of Approved Fan Portal Reclamation Plan, PacifiCorp, Cottonwood/Wilberg Mine, ACT/015/019-97C, Folder #3, Emery County, Utah

Dear Mr. Semborski:

The Division has reviewed and approved amended plans for reclamation of the Cottonwood Fan Portal at the Cottonwood/Wilberg Mine. A stamped "incorporated" copy of the changes are enclosed for your information and files.

If you have any questions regarding the amended plans, please don't hesitate to call.

Sincerely,

Daron R. Haddock
Permit Supervisor

tat
Enclosure

cc: Ranvir Singh, OSM
Richard Manus, BLM
Janette S. Kaiser, USFS, 2 copies
Mark Page, Water Rights, w/o
Dave Ariotti, DEQ, w/o
Bill Bates, DWR, w/o
Price Field Office
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State of Utah
 DEPARTMENT OF NATURAL RESOURCES
 DIVISION OF OIL, GAS AND MINING

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 801-538-5340
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 801-538-7223 (TDD)

April 20, 1998

TO: File

THRU: Daron Haddock, Permit Supervisor *DAH*

FROM: Jess Kelley, Reclamation Specialist *JK*

RE: Cottonwood Fan Portal Reclamation Cost Estimate, PacifiCorp, Cottonwood/Wilberg Mine, ACT/015/019-SR97C, File #2, Emery County, Utah

SUMMARY:

When the permittee decided, in 1997, to revise the reclamation plan for the Cottonwood Fan Portal area, it became necessary also to update the reclamation cost estimate for that area and, hence, for the entire Cottonwood/Wilberg mine site. The permittee submitted the revised reclamation cost estimate in April of 1998. This memorandum constitutes this writer's review and approval of that submittal.

TECHNICAL ANALYSIS:

The permittee estimated the cost of reclaiming the Cottonwood Fan Portal area to be \$104,045, in 1998 dollars. This cost was added to the overall reclamation cost and the overall reclamation cost was revised and escalated through the year 1999, as shown in the following table.

YEAR	ESCALATION FACTOR*	ESCALATED TOTAL
1989	----	\$1,061,589
1990	0.77%	\$1,069,763
1991	1.27%	\$1,083,349
1992	2.21%	\$1,107,291
1993	2.54%	\$1,135,416
1994	3.21%	\$1,171,863
1995	1.93%	\$1,194,480

1996	2.42%	\$1,223,387
1997	2.36%	\$1,252,259
	2.24%	\$1,280,309 + \$104,044 (Cottonwood Fan Portal, 1998 dollars) + \$138,435 (10% Contingency) + \$10,000 (Mobilization) \$1,532,789 (Subtotal) + \$52,115 (3.4% Reclamation Management) \$1,584,903 (Total, 1998 dollars)
1998		
1999	2.24%	\$1,620,405

TOTAL (1999 DOLLARS) \$1,620,405

*Escalation factors taken from Means©.

Thus, the adjusted total reclamation cost estimate, in 1999 dollars, is \$1,620,405. The present reclamation bond is in the amount of \$2,071,405.

RECOMMENDATION:

Since the bond currently held is greater than the adjusted total reclamation cost estimate, no adjustment in the bond is needed. The submittal should be approved.

One Utah Center, Suite 2000
Salt Lake City, Utah 84140-0020
(801) 220-4618 • FAX (801) 220-4725

January 12, 1998



A Subsidiary of PacifiCorp

Mr. Terry F. Roylance
Manager of Natural Resources
The Church of Jesus Christ of Latter-Day Saints
Real Estate Division
Twelfth Floor East
50 East North Temple Street
Salt Lake City, Utah 84150-0001

Re: Executed Agreement to Extend Lease - Coal Mining Lease and Sublease Dated December 30, 1970 -- Further Extension

Dear Terry:

PacifiCorp and the Corporation of the Presiding Bishop have previously executed an "Agreement to Extend Lease" providing for an extension of the 1970 Coal Mining Lease and Sublease Agreement beyond its original termination date. By my letter of November 24, 1997, we agreed to a further extension to and including January 15, 1998. As you aware, this matter is still being discussed in connection with various other matters presently pending between PacifiCorp and the Corporation of the Presiding Bishop. Because of these ongoing discussions, we are proposing that the extension continue for an additional forty-six (46) days or until March 2, 1998 under the same terms and conditions as contained in the "Agreement to Extend Lease." If this additional extension is acceptable, would you please so indicate by having an appropriate representative sign and return a copy of this letter?

We are optimistic that we will be able to resolve this matter in the near future and appreciate your consideration of this extension request.

Sincerely,

Scott M. Child
Property Management Administrator

SMC:dr
Enclosure

ACCEPTED AND AGREED

Corporation of the Presiding Bishop
of The Church of Jesus Christ of
Latter-day Saints, a Utah
corporation sole, Lessor,

By: _____
Name _____
Title _____
Dated this ___ day of January, 1998

Post-It® Fax Note	7671	Date	1-12-98	P. of Pages	1
To	CHUCK SEMBROSKI	From	SCOTT CHILD		
Co./Dept.		Co.			
Phone #		Phone #			
Fax #		Fax #			



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

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
Lowell P. Braxton
Division Director

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Salt Lake City, Utah 84114-5801
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801-359-3940 (Fax)
801-538-7223 (TDD)

February 12, 1998

Chuck Semborski, Environmental Supervisor
Energy West
P.O. Box 310
Huntington, Utah 84528

Re: Fan Portal Reclamation Plan Remaining Issues (Round 4), PacifiCorp, Cottonwood/Wilberg Mine, ACT/015/019-97C, Folder #3, Emery County, Utah

Dear Mr. Semborski:

The Division has completed a review of your January 14, 1998 submittal which addresses reclamation of the Cottonwood Fan Portal at the Cottonwood/Wilberg Mine and was submitted in response to our Round 3 review. The plans that have been submitted, meet the regulatory requirements and are considered approvable. While the maps and plans that have now been submitted, comply with the regulatory requirements, there still remain two items that must be submitted before the Division can give final approval of this amendment. PacifiCorp must provide the following in accordance with the requirements of:

R645-301-412.200, a copy of the comments from the land owner concerning the proposed reclamation and the post mining land use of the area, for inclusion in the reclamation plan.

R645-501-542.800, R645-301-820.100, a revised overall reclamation cost estimate and, if necessary, a revised reclamation bond in accordance with that estimate.

It is imperative that these two items be submitted. Please provide a response by no later than March 11, 1998.

If you have any questions regarding the requirements, please don't hesitate to call.

Sincerely,

Daron R. Haddock
Permit Supervisor

tat
Enclosure
cc: Price Field Office
O:\015019.CWW\FINAL\RD4\FAN.LTR



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

Michael O. Leavitt
Governor
Ted Stewart
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)

December 17, 1997

TO: File

THRU: Joe Helfrich, Permit Supervisor 

FROM: Robert Davidson, Soils Reclamation Specialist 

RE: Cottonwood Fan Portal, PacifiCorp, Cottonwood Wilburg Mine, ACT\015\019-97C, Folder #2, Emery County, Utah

SUMMARY:

The Cottonwood Fan Portal area was initially disturbed in the early 1980s. It was the intention of the permittee to construct a fan portal and a facility pad. However, the fan portal project was never completed beyond the surface disturbance for constructing the pad area. The salvaged topsoil, subsoil, and fill material remained where they had been stockpiled and the cuts for the planned facilities remained. Nevertheless, no facilities were built and nothing further was done with the area.

The reclamation plan for the Cottonwood Fan Portal was reviewed as part of the mid-term in early 1997. The Operator responded to that review with an MRP amendment dated July 1, 1997. The soils Technical Analysis, dated August 8, 1997, reviewed the July 1 submittal and found several deficiencies within the plan. Lack of continuity of information, both in text and mapping was found. The plan has again been resubmitted on October 1, 1997 with assembled information having been assimilated from the original MRP. This Technical Analysis reviews this latest submittal.

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.21, 817.200(c); R645-301-220, -301-411.

Analysis:

The MRP amendment contains adequate information for the following:

- Soil Survey
- Soil Characterization

Soil Survey

Soil Surveys presented in the "Proposed Cottonwood Fan Portal Area, Cottonwood Canyon" submittal include the following:

- 1979 Cottonwood Fan Portal Soil Survey
- 1993 Cottonwood/Trail Mountain Portal Area Order I Soil Survey

Both of these soil surveys are presented for representation of the soils that were affected during the initial surface disturbance of the Cottonwood Fan Portal hillside.

1979 Cottonwood Fan Portal Soil Survey. The original 1079 Soil Survey (MRP pages 2-154 thru 2-158) contains soil information for the immediate area of the Cottonwood Fan Portal. Soils in this area are represented by AbG map symbol and includes both Bb, Very Stony Sandy Loam, and Aa, Very Stony Sandy Loam, both on 70 to 80 degree slopes. These mapping symbols are outside the Carbon-Emry Area, Utah, Soil Conservation Service 1970 Soil Survey. Both Aa and Bb soil Typifying Pedons are located near the Old Johnson Mine Portal entry on the upper road, Section 25, T17S, R6E. According to the soils map, map symbol AbG, these pedons represent the entire slope of the proposed Cottonwood Fan Portal. Only the A1 and A11 horizons, 0 to 4 inches, are described in detail by the soil survey. Soils are moderately alkaline (pH 8.0) and strongly calcareous weak platy and granular structures. General typical profile descriptions are given for both soils. The Aa soil extends down to 5 feet; the Bb soil is 20 inches deep over sandstone bedrock.

1993 Cottonwood/Trail Mountain Portal Area Order I Soil Survey. To supply additional adequate soil survey information, PacifiCorp substituted the Order-I survey that was completed in 1993 for the Cottonwood tube-conveyor system. The Order-I soil survey provides

an on-site investigation and soil map for the land that lies just north and adjacent of the proposed fan portal. This soil survey represents soils of similar depth and quality. Comparing soil maps and soil descriptions from both the original 1979 and the 1993 surveys, soils within the fan portal area are most likely similar to the "Map Unit A, Lithic Ustorthents" as described in the Order-I survey.

Soil Characterization

Soil characterization is provided by several series of soil samples, as described in this submittal, Section 220, page 2 through page 3, and include:

- 1997 Soil Samples Cottonwood Fan Portal Area
- 1995 Soil Samples Tube Conveyor Disturbance
- Order-I, 1993 Soil Survey Soil Samples
- Biology Section, page 34, Soil Samples

1997 Soil Samples Cottonwood Fan Portal Area. During June 1997, soil samples were taken of the topsoil, subsoil, reclaimed slope, base of the Hiawatha coal seam, and the seams comprising various bench levels. Results of these samples are contained in the 97C submittal on pages 17 through 23. Sample locations are presented on Plate 5-5, Drawing KS1710D. As represented by the laboratory results, sample materials meet the criteria of the Division's guidelines for topsoil and overburden¹ and present no toxic or acid forming characteristics.

1995 Soil Samples Tube Conveyor Disturbance. Soil samples were taken in 1995 of soils removed from the immediate area where the tube conveyor was to be placed. These soils were removed and stored separately at the old waste rock site, Figure 5 of this 97C submittal. Piles A and C are native soils to be used during reclamation of the overland conveyor while Pile B is Cottonwood Fan Portal subsoil. Soil samples were taken from these piles and results are shown on pages 14 thru 16 of this 97C submittal.

Order-I, 1993 Soil Survey Soil Samples. The Order-I soil survey, prepared by Mt. Nebo Scientific, included six soil samples collected from three soil profiles during the field study. Results are contained in Appendix C of the survey report. These soils represent slopes that are north and adjacent to the Cottonwood Fan Portal area. Results indicate the soils are moderately alkaline (pH 7.9 to 8.2), have low salinity, except for depths below 30 inches in the Pathead soil, have low sodicity with SAR values below 6.7, have acceptable saturation percent values, have gravelly sandy loam textures over sandstone and silty clay textures over shale, and have moderate to high calcium carbonate contents.

Biology Section, page 34, Soil Samples. During 1981, soil samples were collected

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and results are referenced in the Biology Section, page 34. Samples were taken of the Cottonwood Fan Portal topsoil and subsoil piles prior to seeding of the piles and the steep slope at the base of the proposed fan portal. Data are not presented in this 97C submittal since sample locations and explanation how the samples were taken could not be found in the original MRP.

Findings:

The information provided meets the regulatory requirements of this section.

OPERATION PLAN

TOPSOIL AND SUBSOIL

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

Analysis:

The amended MRP submittal contains adequate information as follows:

- Soil Salvage
- Topsoil and Subsoil Stockpiles

Soil Salvage

The 97C amendment states that topsoil and subsoil were salvaged from the Cottonwood fan-portal area and stockpiled during 1980. After salvage of the topsoil and subsoil, the remaining native material was stripped to hard rock base and pushed towards the county road. When construction procedures in 1981 were completed, the subsoil pile, topsoil pile, and the slope below the fan portal area received interim reclamation and were subsequently revegetated .

Topsoil and Subsoil Stockpiles

Plate 5-5, Drawing KS1710D, delineates the total disturbed area of the proposed fan portal area which includes the slope embankment below the site and the topsoil and subsoil stockpiles. Both the topsoil and subsoil piles are shown and are depicted by baseline x-section stations. Plate 5-4 uses these cross sections to determine the quantities of subsoil and topsoil in the stockpiles. The salvaged topsoil pile contains approximately 1,061 cubic yards while the subsoil pile contains approximately 8,733 cubic yards of soil.

In addition, a portion of subsoil from the Cottonwood Fan Portal subsoil stockpile was relocated, transported and stockpiled at the old waste rock site (see Figure 5, Pile B at the end of the 97C submittal). The subsoil was removed prior to installation of the Cottonwood-Trail

Mountain overland tube conveyor. Approximately 200 cubic yards of subsoil is stored in Pile B.

A Mass Diagram Table is provided on Plate 5-5, Drawing KS1710D which depicts the actual disturbance area for the Cottonwood Fan Portal.

Findings:

The information provided meets the regulatory requirements of this section.

RECLAMATION PLAN

TOPSOIL AND SUBSOIL

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

Analysis:

The MRP 97C amendment contains adequate information concerning soil redistribution as follows:

- Soil Redistribution
- Soil Stabilization and Erosion Control
- Slope Beneath Fan Portal Area
- Remaining Subsoil Topsoil Piles

Soil Redistribution

Plate 5-5, Drawing KS1710D, shows and depicts where topsoil and subsoil will be used in the reclamation of the terraces of the Cottonwood Fan Portal and the Old Johnson Mine Site road. Quantities for soil distribution on each terrace are provide in Mass Balance tables. Plate 5-3 shows the Cottonwood Fan Portal reclamation slope cross sections. A total of 1030 cubic yards of topsoil and 1550 cubic yards of subsoil will be used to reclaim the terraces. The plan does not state the volume of subsoil expected to reclaim the Old Johnson road.

Soil Stabilization and Erosion Control

Soil will be compacted in lifts while rock and boulders will be positioned along the front face of the benches to help control slope sloughing. Mid-sized rocks and boulders will be placed on the prepared slopes and nested into the soil. Rock distribution and placement from the stockpiles and existing slope will be positioned to help provide slope containment and natural esthetic appearance.

Slopes will be between 1½:1 to 2:1. A minimum 1.0 foot topsoil placement will occur on the bench area beyond the fill slope. Six inches of topsoil will be placed on the 1½:1 slopes. Subsoil placement is shown on Plate 5-3. Subsoil is used to backfill against the cut slopes and highball with subsoil placement depth varying depending on location.

An erosion control blanket will be used to cover all slopes and benches that receive redistributed soils. Silt fence will be placed at the base of the main slope area, above the embankment terrace and reclaimed lower slope.

Slope Beneath Fan Portal Area

The slope at the base of the fan portal area has been reclaimed and revegetated. This slope will not be disturbed during the reclamation of the Cottonwood Fan Portal terraces and will therefore remain as final reclamation.

Remaining Subsoil Topsoil Piles

If all soil materials are removed from the stockpiles, then the pile locations will be regraded to approximate original contour. It is projected that soil will remain in the subsoil pile at the conclusion of reclaiming the Cottonwood Fan Portal and Old Johnson Road areas. The disturbed portion of the pile will be contoured and revegetated. The remaining subsoil will be used to reclaim Trail Mountain if needed. If soil is not needed, the pile will be left as final reclamation.

Findings:

The information provided meets the regulatory requirements of this section.



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

Michael O. Leavitt
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Ted Stewart
Executive Director
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February 4, 1998

TO: File

THRU: Daron Haddock, Permit Supervisor *DH*

FROM: Sharon Falvey, Senior Reclamation Hydrologist *SF*

RE: Fan Portal Reclamation Round III, PacifiCorp, Cottonwood/Wilburg Mine, ACT\015\019-97MT(3), Folder #2, Emery County, Utah.

SUMMARY:

As part of a midterm permit review, information contained in the existing MRP was examined to determine whether the plan meets the requirements of the R645 regulations for reclamation at the Cottonwood Wilburg Mine, Cottonwood Fan Portal Site. This submittal responds to the deficiencies noted in the September 1997, and the December 1997 Technical Analyses that followed the response to the Midterm Review. The operators response is determined to meet the minimum regulatory requirements.

RECLAMATION PLAN

HYDROLOGIC RECLAMATION 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.

Ground-water Monitoring

No ground water monitoring plan is specified for the fan portal reclamation area. A number of seeps along the contact between the Blackhawk and Star Point formations occur but, none are at a rate sufficient to collect water samples based on the seepage rates observed in 1997. The source of this water is stated to be from local snowmelt that is transported through vertical fractures. No ground water monitoring is specifically tied to reclamation of this area.

The Hiawatha coal seam near the fan portal area dips 2 degrees to the northwest. The disturbance is along the west face of the coal out crop. This suggests, that changes in

Page 2

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February 4, 1998

seepage following mining may occur. However, the dip of the strata in the central portion of East Mountain dips into the Straight Canyon Syncline, generally 2 to 3 degrees plunging to the northeast. The axis of this syncline lies north of the cottonwood fan portal area and would flow away from the fan portal outcrop. A major portion of the mined area to the north would not drain toward this outcrop location. Future observations should be made to determine if increases in seepage does occur at the Blackhawk/Star Point contact zones.

Surface-water Monitoring

The monitoring plan states that water monitoring will be conducted at the Cottonwood Fan Portal above and below the mine. The surface water monitoring program will be conducted quarterly through the reclamation period according to the monitoring schedule in Appendix A.

Drainage from the Cottonwood Fan Portal area will be monitored at the sedimentation pond outfall according to the UPDES permit. The UPDES permit only measures treated outflow; therefore, no monitoring is presented which will demonstrate that vegetation is adequate to control erosion on this site. Information that demonstrates that adequate erosion control exists is required prior to removal of the pond and prior to bond release.

Acid And Toxic-forming Materials

The plan states that all acid and toxic forming materials will be buried with at least four feet of material. No sites were identified as acid and toxic in this location.

Transfer Of Wells

No transfer of wells are proposed associated with the reclamation of the Cottonwood Fan Portal area.

Discharges Into An Underground Mine

No mine opening was developed at this site. No discharges into the mine will occur associated with the reclamation activity.

Gravity Discharges

No surface entries or access was developed at this site. Gravity discharge could occur from flow accumulated in mine and reaching the out crop. See the discussion under "Ground Water Monitoring" in this T.A.

Water Quality Standards And Effluent Limitations

The permittee will be required to show that ground and surface water at the site meet the requirements of the R645 regulations prior to bond release.

Diversions

The diversion ditch, UD-3, located above the disturbed area is proposed to remain as a permanent structure. Contour map CM-10828-CP "Cottonwood Fan Portal Diversion Ditch #UD-3" and, cross-section detail on CM-10827-CP provides the ditch design information as it existed on the 1989 survey map. The plan states that some modifications would be necessary to provide and maintain the drainage along the terrace. R645-301-761 requires that all permanent diversions meet the requirements of the approved reclamation plan. Existing ditch designs were not reviewed. **It is recommended the applicant be sure the drainage configuration designs can be met by modifying the existing site configuration.**

The applicant has proposed to change the existing drainage at the south end of the permit area. This proposal will decrease the gradient at the junction of a natural drainage. Natural rock outcrops at this location should aid in decreasing the erosion which is occurring in the existing drainage location. An earlier recommendation by this hydrologist suggested a grading plan that distributes the flow over the slopes and concentrates water beneath areas of upstream concentration points be proposed. However, during a site visit company representatives stated that flow over the face could jeopardize the revegetated embankment that lies below and is adjacent to the road. With that concern in mind the proposal to retain this ditch is reasonable.

The diversion DD-4, at the top of the reclaimed bank adjacent to the road, is constructed to drain to the sedimentation pond. The plan states that county official request the ditch be retained so that the ditch would continue to provide a buffer zone to absorb rock fall and, to minimize impacts to the road. This statement does not adequately justify retention of the ditch for the following reasons:

- If this slope has a significant increased potential for rock fall beyond the rock fall potential of other road cuts in this region, it probably does not meet stability requirements of the R645-301 regulations.
- If the ditch is to function as a rock catch then the ditch is not able to function as designed.
- The base width of the slope provides a rock fall barrier.

In conversations with Bill Malnencik, DOGM inspector no rock falls have been observed in this ditch in his experience inspecting this site. However, any rock fall or debris that may fall into this ditch during reclamation construction activities should be cleared so the ditch can function as designed.

This drainage can be re-established to promote flow over the slope and would continue to provide a buffer for rock fall. However, the permittee is concerned that promoting overland flow will encourage rill and gully formation over the well vegetated slope below the existing ditch (discussion during site visit on December 16, 1998). Although, re-grading and promoting overland flow has been completed successfully in other steep slope sites with small drainage areas in Utah, the regrading of this ditch would not greatly increase visual appearance of the site. The trade-off in erosion occurring across the ditch v.s. what may occur due to overland flows is probably minimal. Therefore, because little would be gained by regrading this ditch, the cost benefit ratio is low, and due to the economics this design is considered BTCA for this area. Existing ditch designs were not reviewed and are assumed to meet minimum requirements. Calculations to verify the original designs we located in volume 11, appendix XIII, pages 1 through 8.

The final configuration and ditch location following removal of the pond is presented on the Phase II reclamation map 5-5A.

The applicant has committed to provide a french rock drain at the seep locations the size and design is dependent on topographic constraints and seep size.

Stream Buffer Zones

The Cottonwood Fan Portal is within 100 feet of the Cottonwood Canyon Creek stream channel. The adjacent Trail Mountain Mine diverted the Cottonwood Canyon Creek into a culvert thus, diverting the stream. The reclamation of this site is expected to be completed prior to reclamation at the Trail Mountain Mine. Based on this information, a specific buffer zone variance is not necessary.

Sediment Control Measures

The plan states that final grading and preparation of overburden will be conducted along the contour to minimize erosion. If grading along the contour is hazardous to equipment operators, grading will be conducted in a direction other than parallel to the contours.

Disturbed areas are presently proposed to drain to the sedimentation ponds. Additional measures such as; a silt fence along DD-4 and rock gabions are also used.

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February 4, 1998

Siltation Structures

Other than the Alternate Sediment Control Measure in place in Area 3-7, the sedimentation ponds will be retained to treat runoff from the site during Phase I reclamation. Measures used following sediment pond removal include silt fence controls in conjunction with the roughening and mulching techniques.

Sedimentation Ponds

Under section 500 the Engineering section, the plan states "Once the bonding period is complete and revegetation is satisfactory the sedimentation ponds/basins at Cottonwood/Wilberg and Proposed Cottonwood Canyon Fan Portal will be back filled and graded". This meets the requirements for removal of siltation structures.

Other Treatment Facilities

No other treatment facilities are associated with the Cottonwood Fan Portal area.

Siltation Structure Exemptions

No exemption from using siltation structures were granted associated with reclamation of the cottonwood fan portal area.

Discharge Structures

No discharge structures are proposed for retention as permanent structures.

Impoundments

No impoundments are proposed to be retained as permanent structures at the reclaimed cottonwood fan portal site.

Casing And Sealing Of Wells

No casing and sealing of wells are directly associated with the cottonwood mine portal reclamation.

Findings:

The permittee has met the minimum requirements of this section.

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February 4, 1998

Recommendations:

This amendment can be approved as it meets the minimum regulatory requirements.

tt:

cc: Bill Malencik

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

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December 18, 1997

Chuck Semborski, Environmental Supervisor
Energy West
P.O. Box 310
Huntington, Utah 84528

Re: Deficiencies in Fan Portal Reclamation Plan (Round 3), PacifiCorp,
Cottonwood/Wilberg Mine, ACT/015/019-97C, Folder #3, Emery County, Utah

Dear Mr. Semborski:

The Division has conducted a review of your October submittal which addressed reclamation of the Cottonwood Fan Portal at the Cottonwood/Wilberg Mine and was submitted in response to our Round 2 review. While improvements have been made in the reclamation plan there are still a few remaining deficiencies.

The enclosed Technical Analysis and Findings document discusses the review and outlines the deficiencies that still need to be corrected. Please review the document carefully. It is imperative that the deficiencies be corrected by no later than January 15, 1997.

If you have any questions regarding the requirements or the analysis, please don't hesitate to call.

Sincerely,

Daron R. Haddock
Permit Supervisor

tat
Enclosure
cc: W. Malencik
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State of Utah
Division of Oil, Gas and Mining
Utah Coal Regulatory Program



Technical Analysis and Findings
Cottonwood Fan Portal Reclamation
Round 3
December 18, 1997

TECHNICAL ANALYSIS

Last revised - December 18, 1997

INTRODUCTION

This Technical Analysis (TA) is written as part of the permit review process. It documents the Findings that the Division has made to date regarding the application for a permit and is the basis for permitting decisions with regard to the application. The TA is broken down into logical section headings which comprise the necessary components of an application. Each section is analyzed and specific findings are then provided which indicate whether or not the application is in compliance with the requirements.

Often the first technical review of an application finds that the application contains some deficiencies. The deficiencies are discussed in the body of the TA and are identified by a regulatory reference which describes the minimum requirements. In this Technical Analysis we have summarized the deficiencies at the beginning of the document to aid in responding to them. Once all of the deficiencies have been adequately addressed, the TA will be considered final for the permitting action.

It may be that not every topic or regulatory requirement is discussed in this version of the TA. Generally only those sections are analyzed that pertain to a particular permitting action. TA's may have been completed previously and the revised information has not altered the original findings. Those sections that are not discussed in this document are generally considered to be in compliance.

TECHNICAL ANALYSIS

Last revised - December 18, 1997

SUMMARY OF DEFICIENCIES

The permittee must provide the following in accordance with the requirements of:

R645-301-412.200, a copy of the comments from the land owner concerning the proposed reclamation and the post mining land use must be included in the permit.

R645-301-512, Provide a map for the final site configuration including filling of sedimentation ponds.

R645-301-742.313, The plan must include backfilling ditch DD-4 (the sediment control ditch is depicted in figure KS1709D). This ditch will no longer be needed to achieve the purpose for which it was authorized. Backfilling and regrading to promote overland flow will approximate AOC for the regraded portion of the site.

R645-301-742.200, Provide a sediment control plan for controlling sediment following sediment pond removal.

R645-301-542.800, R645-301-820.100, After the details of the reclamation plan have been worked out and the entire plan is acceptable to the Division, the permittee will submit a revised overall reclamation cost estimate and, if necessary, revise the reclamation bond in accordance with that estimate.

ENVIRONMENTAL RESOURCE INFORMATION

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.21, 817.200(c); R645-301-220, -301-411.

Analysis:

The MRP amendment contains adequate information for the following:

- Soil Survey
- Soil Characterization

Soil Survey

Soil Surveys presented in the "Proposed Cottonwood Fan Portal Area, Cottonwood Canyon" submittal include the following:

- 1979 Cottonwood Fan Portal Soil Survey
- 1993 Cottonwood/Trail Mountain Portal Area Order I Soil Survey

Both of these soil surveys are presented for representation of the soils that were affected during the initial surface disturbance of the Cottonwood Fan Portal hillside.

1979 Cottonwood Fan Portal Soil Survey. The original 1079 Soil Survey (MRP pages 2-154 thru 2-158) contains soil information for the immediate area of the Cottonwood Fan Portal. Soils in this area are represented by AbG map symbol and includes both Bb, Very Stony Sandy Loam, and Aa, Very Stony Sandy Loam, both on 70 to 80 degree slopes. These mapping symbols are outside the Carbon-Emry Area, Utah, Soil Conservation Service 1970 Soil Survey. Both Aa and Bb soil Typifying Pedons are located near the Old Johnson Mine Portal entry on the upper road, Section 25, T17S, R6E. According to the soils map, map symbol AbG, these pedons represent the entire slope of the proposed Cottonwood Fan Portal. Only the A1 and A11 horizons, 0 to 4 inches, are described in detail by the soil survey. Soils are moderately alkaline (pH 8.0) and strongly calcareous weak platy and granular structures. General typical profile descriptions are given for both soils. The Aa soil extends down to 5 feet; the Bb soil is 20 inches deep over sandstone bedrock.

1993 Cottonwood/Trail Mountain Portal Area Order I Soil Survey. To supply additional adequate soil survey information, PacifiCorp substituted the Order-I survey that was completed in 1993 for the Cottonwood tube-conveyor system. The Order-I soil survey provides an on-site investigation and soil map for the land that lies just north and adjacent of the proposed

TECHNICAL ANALYSIS

Last revised - December 18, 1997

fan portal. This soil survey represents soils of similar depth and quality. Comparing soil maps and soil descriptions from both the original 1979 and the 1993 surveys, soils within the fan portal area are most likely similar to the "Map Unit A, Lithic Ustorthents" as described in the Order-I survey.

Soil Characterization

Soil characterization is provided by several series of soil samples, as described in this submittal, Section 220, page 2 through page 3, and include:

- 1997 Soil Samples Cottonwood Fan Portal Area
- 1995 Soil Samples Tube Conveyor Disturbance
- Order-I, 1993 Soil Survey Soil Samples
- Biology Section, page 34, Soil Samples

1997 Soil Samples Cottonwood Fan Portal Area. During June 1997, soil samples were taken of the topsoil, subsoil, reclaimed slope, base of the Hiawatha coal seam, and the seams comprising various bench levels. Results of these samples are contained in the 97C submittal on pages 17 through 23. Sample locations are presented on Plate 5-5, Drawing KS1710D. As represented by the laboratory results, sample materials meet the criteria of the Division's guidelines for topsoil and overburden¹ and present no toxic or acid forming characteristics.

1995 Soil Samples Tube Conveyor Disturbance. Soil samples were taken in 1995 of soils removed from the immediate area where the tube conveyor was to be placed. These soils were removed and stored separately at the old waste rock site, Figure 5 of this 97C submittal. Piles A and C are native soils to be used during reclamation of the overland conveyor while Pile B is Cottonwood Fan Portal subsoil. Soil samples were taken from these piles and results are shown on pages 14 thru 16 of this 97C submittal.

Order-I, 1993 Soil Survey Soil Samples. The Order-I soil survey, prepared by Mt. Nebo Scientific, included six soil samples collected from three soil profiles during the field study. Results are contained in Appendix C of the survey report. These soils represent slopes that are north and adjacent to the Cottonwood Fan Portal area. Results indicate the soils are moderately alkaline (pH 7.9 to 8.2), have low salinity, except for depths below 30 inches in the Pathead soil, have low sodicity with SAR values below 6.7, have acceptable saturation percent values, have gravelly sandy loam textures over sandstone and silty clay textures over shale, and have moderate to high calcium carbonate contents.

Biology Section, page 34, Soil Samples. During 1981, soil samples were collected and results are referenced in the Biology Section, page 34. Samples were taken of the

¹Leatherwood, J., and Duce, D., 1988. Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining. State of Utah Department of Natural Resources, Division of Oil, Gas and Mining.

TECHNICAL ANALYSIS

Last revised - December 18, 1997

Cottonwood Fan Portal topsoil and subsoil piles prior to seeding of the piles and the steep slope at the base of the proposed fan portal. Data are not presented in this 97C submittal since sample locations and explanation how the samples were taken could not be found in the original MRP.

Findings:

The information provided meets the regulatory requirements of this section.

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference R645-301-411.

Analysis:

The Old Johnson Mine is located directly across the canyon from the Trail Mountain Mine surface facilities and directly adjacent to the Cottonwood Fan Portal area (Appendix III, page 5 and Plate 3-16A). The Old Johnson Mine site has been recorded as a historic resource and provided with the Smithsonian registration number 42Em1633. An analysis of the site by F.R. Hauck of AERC concluded that this mine is of historic significance and has the potential for nomination to the National Register. The Johnson Mine site includes two walled-in portals, a mine terrace associated with the portals, road, the remnants of a coal slide or chute, a storage area under a rock walled boulder, an outhouse, and the old weigh house structure. The site is justified to the National Register Status as significant because it is an integral unit.

A rough sketch of the Old Johnson Mine is given in the original 1983 site survey in Chapter 2 Attachment 6. Plate 5-1 delineates the site in conjunction with the other surface facilities of the Cottonwood Mine and Trial Mountain Mine. An e-mail received from Jim Dykman, SHPO, (received August 5, 1997) states: "the road has been updated and changed over, our office believes that the road no longer has integrity and would not be an eligible part of the historic mine". The permit states that the road will be reclaimed.

In section Protection of Public Parks and Historic Places (page 4-40) of the permit a discussion is provided for methods used to protect the Johnson Mine site during reclamation activities. Methods used will include establishing a berm along the roadway, flagging and ribbon barrier zones and educating construction works about the old mine site.

Findings:

The permit meets the minimum regulatory requirements of this section.

TECHNICAL ANALYSIS

Last revised - December 18, 1997

FISH AND WILDLIFE RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 784.21; R645-301-322.

Analysis:

Drawing #KS1691C, Cottonwood Fan Portal Raptor Nest Location Map, identifies raptor nests and activity sites, bat activity, and big game use areas in the Cottonwood Canyon Area. Several raptor nests are located within a mile radius of the fan portal, however these nests have not been found to be active in recent years. A Peregrine Falcon pair were observed approximately two miles south of the fan portal area 1996 displaying courtship activities. The reclamation work is not expected to have any impacts on raptors or bats. The permit states that no threatened or endangered species occur on the site property (1976) (page 2-172). The USFWS concerns for the project are habitat for the bald eagle and peregrine falcon and water depletion to the Colorado River. The permit states that no additional water will be used in conjunction with the reclamation of this site. The permit commits to an annual raptor monitoring program which should identify the presence of Peregrine falcons prior to site activity.

Findings:

The minimum requirements of this section have been met.

LAND-USE RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.22; R645-301-411.

Analysis:

The stated premining land use for the general area is range forage and wildlife habitat. The land in the Cottonwood Canyon area is used primarily for spring and winter range forage, wildlife habitat and mineral mining. The area specific to the portal area is to steep for cattle grazing, therefore, the stated postmining land use is wildlife habitat.

No comments could be found in the permit from the surface land owner concerning the proposed reclamation and post mining land use. The L.D.S. Church is shown as the land owner.

TECHNICAL ANALYSIS

Last revised - December 18, 1997

Findings:

The permittee must provide the following in accordance with the requirements of:

R645-301-412.200, a copy of the comments from the land owner concerning the proposed reclamation and the post mining land use must be included in the permit.

VEGETATION RESOURCE INFORMATION

Regulatory Reference: R645-301-320.

Analysis:

The Cottonwood Fan Portal Reference area was measured for vegetative cover and shrub density. Average total living cover was estimated to be 42 percent and 762 individual tree and/or shrubs per acre in 1994 and 1996. Productivity was estimated at 1800 pounds forage per acre based on the reference area in October 1989 (page 2-158.1).

Findings:

The permit is in compliance with the requirements of this section.

OPERATION PLAN

TOPSOIL AND SUBSOIL

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

Analysis:

The amended MRP submittal contains adequate information as follows:

- Soil Salvage
- Topsoil and Subsoil Stockpiles

Soil Salvage

TECHNICAL ANALYSIS

Last revised - December 18, 1997

The 97C amendment states that topsoil and subsoil were salvaged from the Cottonwood fan-portal area and stockpiled during 1980. After salvage of the topsoil and subsoil, the remaining native material was stripped to hard rock base and pushed towards the county road. When construction procedures in 1981 were completed, the subsoil pile, topsoil pile, and the slope below the fan portal area received interim reclamation and were subsequently revegetated .

Topsoil and Subsoil Stockpiles

Plate 5-5, Drawing KS1710D, delineates the total disturbed area of the proposed fan portal area which includes the slope embankment below the site and the topsoil and subsoil stockpiles. Both the topsoil and subsoil piles are shown and are depicted by baseline x-section stations. Plate 5-4 uses these cross sections to determine the quantities of subsoil and topsoil in the stockpiles. The salvaged topsoil pile contains approximately 1,061 cubic yards while the subsoil pile contains approximately 8,733 cubic yards of soil.

In addition, a portion of subsoil from the Cottonwood Fan Portal subsoil stockpile was relocated, transported and stockpiled at the old waste rock site (see Figure 5, Pile B at the end of the 97C submittal). The subsoil was removed prior to installation of the Cottonwood-Trail Mountain overland tube conveyor. Approximately 200 cubic yards of subsoil is stored in Pile B.

A Mass Diagram Table is provided on Plate 5-5, Drawing KS1710D which depicts the actual disturbance area for the Cottonwood Fan Portal.

Findings:

The information provided meets the regulatory requirements of this section.

RECLAMATION PLAN

TOPSOIL AND SUBSOIL

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

Analysis:

The MRP 97C amendment contains adequate information concerning soil redistribution as follows:

- Soil Redistribution
- Soil Stabilization and Erosion Control

TECHNICAL ANALYSIS

Last revised - December 18, 1997

- Slope Beneath Fan Portal Area
- Remaining Subsoil Topsoil Piles

Soil Redistribution

Plate 5-5, Drawing KS1710D, shows and depicts where topsoil and subsoil will be used in the reclamation of the terraces of the Cottonwood Fan Portal and the Old Johnson Mine Site road. Quantities for soil distribution on each terrace are provide in Mass Balance tables. Plate 5-3 shows the Cottonwood Fan Portal reclamation slope cross sections. A total of 1030 cubic yards of topsoil and 1550 cubic yards of subsoil will be used to reclaim the terraces. The plan does not state the volume of subsoil expected to reclaim the Old Johnson road.

Soil Stabilization and Erosion Control

Soil will be compacted in lifts while rock and boulders will be positioned along the front face of the benches to help control slope sloughing. Mid-sized rocks and boulders will be placed on the prepared slopes and nested into the soil. Rock distribution and placement from the stockpiles and existing slope will be positioned to help provide slope containment and natural esthetic appearance.

Slopes will be between 1½:1 to 2:1. A minimum 1.0 foot topsoil placement will occur on the bench area beyond the fill slope. Six inches of topsoil will be place on the 1½:1 slopes. Subsoil placement is shown on Plate 5-3. Subsoil is used to backfill against the cut slopes and highball with subsoil placement depth varying depending on location.

An erosion control blanket will be used to cover all slopes and benches that receive redistributed soils. Silt fence will be place at the base of the main slope area, above the embankment terrace and reclaimed lower slope.

Slope Beneath Fan Portal Area

The slope at the base of the fan portal area has been reclaimed and revegetated. This slope will not be disturbed during the reclamation of the Cottonwood Fan Portal terraces and will therefore remain as final reclamation.

Remaining Subsoil Topsoil Piles

If all soil materials are removed from the stockpiles, then the pile locations will be regraded to approximate original contour. It is projected that soil will remain in the subsoil pile at the conclusion of reclaiming the Cottonwood Fan Portal and Old Johnson Road areas. The disturbed portion of the pile will be contoured and revegetated. The remaining subsoil will be used to reclaim Trail Mountain if needed. If soil is not needed, the pile will be left as final reclamation.

TECHNICAL ANALYSIS

Last revised - December 18, 1997

Findings:

The information provided meets the regulatory requirements of this section.

REVEGETATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

General Requirements

The seed mixture to be used for final revegetation on the disturbance associated with the Cottonwood Fan Portal (page 32) will be broadcast seeded by hand. (The seed mixture and revegetation techniques used to seed the lower slopes of the fan portal in the 1980's are discussed on pages 33 thru 35.) Slopes 1:1 or steeper will be hydroseeded. All native species have been used in the seed mixture. The seed mixture selection is based on the results of reclamation seeding on the lower fan portal area, the Trail Mountain Mine test plots (across the street) and the surrounding area.

Mulching and Other Soil Stabilizing Practices

Seeded areas will be covered with a curlex blanket. Only slopes 1:1 or steeper will be hydromulched. Curlex blanket has shown to provide excellent soil protection.

Standards for Success.

An area designated in Drawing KS1709D was seeded in 1981. This area is approximately 2.32 acres in size. The remaining portion of the fan portal area will be seeded in 1998. It is assumed that the period of extended responsibility is be the same for both portions of the fan site. Vegetation cover and shrub density of the reclaimed fan portal will be compared to the reference area prior to bond release.

Findings:

The information provided meets the minimum regulatory requirements of this section.

TECHNICAL ANALYSIS

Last revised - December 18, 1997

HYDROLOGIC RECLAMATION 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.

Ground-water Monitoring

No ground water monitoring plan is planned for the fan portal reclamation area. A number of seeps along the contact between the Blackhawk and Star Point formations occur but, none are at a rate sufficient to collect water samples based on the seepage rates observed in 1997. The source of this water is stated to be from local snowmelt that is transported through vertical fractures. No ground water monitoring is specifically tied to reclamation of this area.

The Hiawatha coal seam near the fan portal area dips 2 degrees to the northwest. The disturbance is along the west face of the coal out crop. This suggests, that changes in seepage following mining may occur. The dip of the strata in the central portion of East Mountain dips into the Straight Canyon Syncline, generally 2 to 3 degrees plunging to the northeast. The axis of this syncline lies north of the cottonwood fan portal area and would flow away from the fan portal outcrop. This suggests, that although changes in seepage following mining may occur, a large portion of the mined area to the north would not be a source of recharge/discharge to this outcrop location. Future observations should be made to determine if increases in seepage does occur at the Blackhawk/Star Point contact zones.

Surface-water Monitoring

The monitoring plan states that water monitoring will be conducted at the Cottonwood Fan Portal above and below the mine. The surface water monitoring program will be conducted quarterly through the reclamation period according to the monitoring schedule in Appendix A.

Drainage from the Cottonwood Fan Portal area will be monitored at the sedimentation pond outfall according to the UPDES permit. The UPDES permit only measures treated outflow; therefore, no monitoring is presented which will demonstrate that vegetation is adequate to control erosion on this site. Information that demonstrates that adequate erosion control exists is required prior to removal of the pond and prior to bond release.

Acid And Toxic-forming Materials

TECHNICAL ANALYSIS

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The plan states that all acid and toxic forming materials will be buried with at least four feet of material. No location was identified in the text as needing four feet of cover material.

Transfer Of Wells

No transfer of wells are proposed associated with the reclamation of the Cottonwood Fan Portal area.

Discharges Into An Underground Mine

No mine opening was developed at this site. No discharges into the mine will occur associated with the reclamation activity.

Gravity Discharges

No surface entries or access was developed at this site. Gravity discharge could occur from flow accumulated in mine and reaching the out crop. See the discussion under "Ground Water Monitoring" in this T.A.

Water Quality Standards And Effluent Limitations

The permittee will be required to show that ground and surface water at the site meet the requirements of the R645 regulations prior to bond release.

Diversions

The diversion ditch, UD-3, located above the disturbed area is proposed to remain as a permanent structure. Contour map CM-10828-CP "Cottonwood Fan Portal Diversion Ditch #UD-3" and, cross-section detail on CM-10827-CP provides the ditch design information as it existed on the 1989 survey map. The plan states that some modifications would be necessary to provide and maintain the drainage along the terrace. R645-301-761 requires that all permanent diversions meet the requirements of the approved reclamation plan. **It is recommended the applicant be sure the drainage configuration designs can be met by modifying the existing site configuration.**

The applicant has proposed to change the existing drainage at the south end of the permit area. This proposal will decrease the gradient at the junction of a natural drainage. Natural rock outcrops at this location should aid in decreasing the erosion which is occurring in the existing drainage location. An earlier recommendation by the division hydrologist suggested a grading plan that distributes the flow over the slopes and concentrates water beneath areas of upstream concentration points be proposed. However, during a site visit

TECHNICAL ANALYSIS

Last revised - December 18, 1997

company representatives stated that flow over the face could jeopardize the revegetated embankment that lies below and is adjacent to the road. With that concern in mind the proposal to retain this ditch is reasonable.

The diversion DD-4, at the top of the reclaimed bank adjacent to the road, is constructed to drain to the sedimentation pond. The plan states that county official as requesting the ditch be retained so that the ditch would continue to provide a buffer zone to absorb rock fall and, to minimize impacts to the road. This statement does not adequately justify retention of the ditch for the following reasons:

- If this slope has a significant increased potential for rock fall beyond the rock fall potential of other road cuts in this region, it probably does not meet stability requirements of the R645-301 regulations.
- If the ditch is to function as a rock catch then the ditch is not able to function as designed.
- The base width of the slope provides a rock fall barrier.

The retention of this ditch can not be approved as proposed. The drainage can be re-established over the slope and continue to provide a buffer. This type of re-grading has been completed successfully in other steep slope sites in Utah.

There would be some logistic problems in coordinating the drainage discharged from DD-4 and the final reclamation of the site. The resulting configuration would not approximate the premining characteristics (R645-301-742.313). Final reclamation configuration and plans for the sedimentation ponds and the ditch must be presented. In order to meet AOC, the plan must include backfilling DD-4 to promote overland flow. The road, bypass culverts and ditch configuration should account for runoff from the final reclaimed site configuration.

The applicant has committed to provide a french rock drain at the seep locations the size and design is dependent on topographic constraints and seep size.

Stream Buffer Zones

The Cottonwood Fan Portal is within 100 feet of the Cottonwood Canyon Creek stream channel. The adjacent Trail Mountain Mine diverted the Cottonwood Canyon Creek into a culvert thus, diverting the stream. The reclamation of this site is expected to be completed prior to reclamation at the Trail Mountain Mine. Based on this information, a specific buffer zone variance is not necessary.

TECHNICAL ANALYSIS

Last revised - December 18, 1997

Sediment Control Measures

The plan states that final grading and preparation of overburden will be conducted along the contour to minimize erosion. If grading along the contour is hazardous to equipment operators, grading will be conducted in a direction other than parallel to the contours.

Disturbed areas are presently proposed to drain to the sedimentation ponds. Additional measures such as; a silt fence along DD-4 and rock gabions are also used.

Siltation Structures

Other than the Alternate Sediment Control Measure in place in Area 3-7, the sedimentation ponds will be retained to treat runoff from the site during the reclamation phase. The plan provides information which shows how disturbed areas will be treated during initial reclamation but, measures used following sediment pond removal were not identified.

Sedimentation Ponds

Under section 500 the Engineering section, the plan states "Once the bonding period is complete and revegetation is satisfactory the sedimentation ponds/basins at Cottonwood/Wilberg and Proposed Cottonwood Canyon Fan Portal will be back filled and graded". Once the bonding period is complete and revegetation is satisfactory the sedimentation ponds will be backfilled and graded. This determination is made by the Division following a request from the permittee at Phase II bond release.

Other Treatment Facilities

No other treatment facilities are associated with the Cottonwood Fan Portal area.

Siltation Structure Exemptions

No exemption from using siltation structures were granted associated with reclamation of the cottonwood fan portal area.

Discharge Structures

No discharge structures are proposed for retention as permanent structures.

Impoundments

TECHNICAL ANALYSIS

Last revised - December 18, 1997

No impoundments are proposed to be retained as permanent structures at the reclaimed cottonwood fan portal site.

Casing And Sealing Of Wells

No casing and sealing of wells are directly associated with the cottonwood mine portal reclamation.

Findings:

The permittee has not met all requirements of this section. The permittee must provide the following in accordance with:

R645-301-512, Provide a map for the final site configuration including filling of sedimentation ponds.

R645-301-742.313, The plan must include backfilling ditch DD-4 (the sediment control ditch is depicted in figure KS1709D). This ditch will no longer be needed to achieve the purpose for which it was authorized. Backfilling and regrading to promote overland flow will approximate AOC for the regraded portion of the site.

R645-301-742.200, Provide a sediment control plan for controlling sediment following sediment pond removal.

Because the UPDES permit only measures treated outflow no monitoring is presented to demonstrate that vegetation is adequate to control erosion on this site. This information is required for bond release. Prior to removal of the sedimentation pond the permittee will need to demonstrate that these requirements have been met.

R645-301-761 requires that all permanent diversions have been maintained and the operator will renovate such structures to conform to the approved plan. Therefore, it is recommended the applicant be sure the drainage configuration designs can be met with the proposed modification of the existing site configuration.

BONDING AND INSURANCE REQUIREMENTS

Analysis:

Determination of bond amount.

TECHNICAL ANALYSIS

Last revised - December 18, 1997

Since the plan has not yet been determined to be acceptable in all respects to the Division, this writer's stipulation to the plan, as set forth in his review of the July 1997 submittal, still stands. That is, after the details of the reclamation plan have been worked out and the entire plan is acceptable to the Division, the permittee shall submit a revised overall reclamation cost estimate and, if necessary, revise the reclamation bond in accordance with that estimate.

Findings:

The plan does not fulfill the requirements of this section.

As stipulated in the Division review of the July 1997 submittal, the permittee must provide the following, prior to approval, in accordance with the requirements of:

R645-301-542.800, R645-301-820.100

After the details of the reclamation plan have been worked out and the entire plan is acceptable to the Division, the permittee will submit a revised overall reclamation cost estimate and, if necessary, revise the reclamation bond in accordance with that estimate.



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

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
Lowell P. Braxton
Division Director

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PO Box 145801
Salt Lake City, Utah 84114-5801
801-538-5340
801-359-3940 (Fax)
801-538-7223 (TDD)

December 2, 1997

TO: File

THRU: Daron Haddock, Permit Supervisor 

FROM: Susan M. White, Senior Reclamation Biologist 

RE: Fan Portal Reclamation Review Round III, PacifiCorp, Cottonwood Wilburg Mine, ACT\015\019-97C, Folder #2, Emery County, Utah

SUMMARY:

The reclamation plan for the Cottonwood Fan Portal was reviewed as part of the mid-term in early 1997. The Operator responded to that review with a permit change dated July 1, 1997. My Technical Analysis dated August 8, 1997 reviews the July 1 submittal. The plan was again resubmitted October 1, 1997 and this Technical Analysis reviews this plan. How the permit change fits into the current approved plan was confusing and therefore not reviewed. The amendment should not be approved until the deficiency associated with the land owner is resolved.

TECHNICAL ANALYSIS

ENVIRONMENTAL RESOURCE INFORMATION

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

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference R645-301-411.

Analysis:

The Old Johnson Mine is located directly across the canyon from the Trail Mountain Mine surface facilities and directly adjacent to the Cottonwood Fan Portal area (Appendix III, page 5 and Plate 3-16A). The Old Johnson Mine site has been recorded as a historic resource and provided with the Smithsonian registration number 42Em1633. An

analysis of the site by F.R. Hauck of AERC concluded that this mine is of historic significance and has the potential for nomination to the National Register. The Johnson Mine site includes two walled-in portals, a mine terrace associated with the portals, road, the remnants of a coal slide or shute, a storage area under a rock walled boulder, an outhouse, and the old weigh house structure. The site is justified to the National Register Status as significant because it is an integral unit.

A rough sketch of the Old Johnson Mine is given in the original 1983 site survey in Chapter 2 Attachment 6. Plate 5-1 delineates the site in conjunction with the other surface facilities of the Cottonwood Mine and Trial Mountain Mine. An e-mail received from Jim Dykman, SHPO, (received August 5, 1997) states: "the road has been updated and changed over, our office believes that the road no longer has integrity and would not be an eligible part of the historic mine". The permit states that the road will be reclaimed.

In section Protection of Public Parks and Historic Places (page 4-40) of the permit a discussion is provided for methods used to protect the Johnson Mine site during reclamation activities. Methods used will include establishing a berm along the roadway, flagging and ribbon barrier zones and educating construction works about the old mine site.

Findings:

The permit meets the minimum regulatory requirements of this section.

FISH AND WILDLIFE RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 784.21; R645-301-322.

Analysis:

Drawing #KS1691C, Cottonwood Fan Portal Raptor Nest Location Map, identifies raptor nests and activity sites, bat activity, and big game use areas in the Cottonwood Canyon Area. Several raptor nests are located within a mile radius of the fan portal, however these nests have not been found to be active in recent years. A Peregrine Falcon pair were observed approximately two miles south of the fan portal area 1996 displaying courtship activities. The reclamation work is not expected to have any impacts on raptors or bats. The permit states that no threatened or endangered species occur on the site property (1976) (page 2-172). The USFWS concerns for the project are habitat for the bald eagle and peregrine falcon and water depletion to the Colorado River. The permit states that no additional water will be used in conjunction with the reclamation of this site. The permit commits to an annual raptor

monitoring program which should identify the presence of Peregrine falcons prior to site activity.

Findings:

The minimum requirements of this section have been met.

LAND-USE RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.22; R645-301-411.

Analysis:

The stated premining land use for the general area is range forage and wildlife habitat. The land in the Cottonwood Canyon area is used primarily for spring and winter range forage, wildlife habitat and mineral mining. The area specific to the portal area is to steep for cattle grazing, therefore, the stated postmining land use is wildlife habitat.

No comments could be found in the permit from the surface land owner concerning the proposed reclamation and post mining land use. The L.D.S. Church is shown as the land owner.

Findings:

The permittee must provide the following in accordance with the requirements of:

R645-301-412.200, a copy of the comments from the land owner concerning the proposed reclamation and the post mining land use must be included in the permit.

VEGETATION RESOURCE INFORMATION

Regulatory Reference: R645-301-320.

Analysis:

The Cottonwood Fan Portal Reference area was measured for vegetative cover and shrub density. Average total living cover was estimated to be 42 percent and 762 individual

tree and/or shrubs per acre in 1994 and 1996. Productivity was estimated at 1800 pounds forage per acre based on the reference area in October 1989 (page 2-158.1).

Findings:

The permit is in compliance with the requirements of this section.

RECLAMATION PLAN

REVEGETATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

General Requirements

The seed mixture to be used for final revegetation on the disturbance associated with the Cottonwood Fan Portal (page 32) will be broadcast seeded by hand. (The seed mixture and revegetation techniques used to seed the lower slopes of the fan portal in the 1980's are discussed on pages 33 thru 35.) Slopes 1:1 or steeper will be hydroseeded. All native species have been used in the seed mixture. The seed mixture selection is based on the results of reclamation seeding on the lower fan portal area, the Trail Mountain Mine test plots (across the street) and the surrounding area.

Mulching and Other Soil Stabilizing Practices

Seeded areas will be covered with a curlex blanket. Only slopes 1:1 or steeper will be hydromulched. Curlex blanket has shown to provide excellent soil protection.

Standards for Success.

An area designated in Drawing KS1709D was seeded in 1981. This area is approximately 2.32 acres in size. The remaining portion of the fan portal area will be seeded in 1998. It is assumed that the period of extended responsibility is be the same for both portions of the fan site. Vegetation cover and shrub density of the reclaimed fan portal will be compared to the reference area prior to bond release.

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ACT/015/019-97C
December 2, 1997

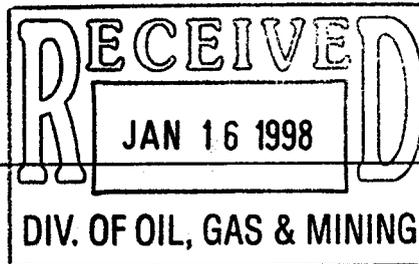
Findings:

The information provided meets the minimum regulatory requirements of this section.

RECOMMENDATION:

Prior to approval the requirement of R645-301-412.200 must be provided as outlined above. Discrepancies and contradicting information may exist when this permit amendment is added to the approved plan. Clarification may be needed that Volume 11 supersedes any other information on the fan portal in other volumes of the approved permit.

O:\015019.CWW\FINAL\COTTONFA.SW3



January 14, 1998

Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801

Attention: Mr. Daron R. Haddock

Re: Response to Deficiencies in Fan Portal Reclamation Plan, (Round 3), PacifiCorp, Cottonwood/Wilberg Mine, ACT/015/019-97C, Folder #6, Emery County, Utah.

PacifiCorp, ("Energy West") has reviewed the Technical Analysis, Findings and Deficiencies as received from the Division, dated December 18, 1997. This is the response from the Energy West deficiency reply dated September 29, 1997.

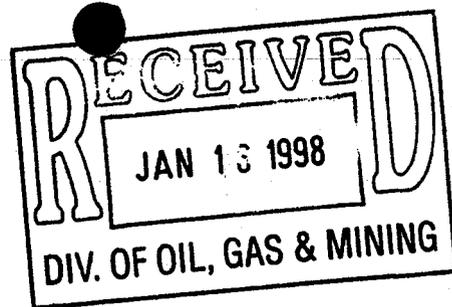
"Energy West" responds to the deficiencies that remain a concern by the Division and are listed below:

Regulation Cited Deficiency - **Bold** Response - *Italic*

1. R645-301-412.200, The permittee must provide the following in accordance with the requirements of said regulation. No Comments from the land owner concerning "Energy West" intentions to reclaim the Proposed Cottonwood Fan Portal Area and the Postmining Land Use.

Response: *As discussed with the Division previously, the managing agent for Energy West Mining, "Interwest Mining" is currently involved in negotiations with the land owner, L.D.S. Church. When the company and the Church reach final agreement, this deficiency will be addressed. Energy West will provide the Division a letter of consent from the land owner at least 60 days prior to construction. Therefore, a delay in providing this information is requested.. Attached is a request letter from "Interwest" to the Church for additional time extension for your review.*

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2. R645-301-512, Provide a map for the final site configuration including filling of the sediment ponds.

Response: During the submittal of deficiencies dated September 29, 1997, a drawing was included that represents final reclamation contours, see drawing KS1710D, Plate 5-5. The sediment basin area contours were not included at that time, as this was considered Phase I reclamation and the ponds were to remain in place. The drawing should have been identified specifically as Phase I Reclamation instead of Final Reclamation, therefore, changes to the title block of Plate 5-5 have been revised and a new drawing will be included to reflect final reclamation contours for the entire site. The new drawing will be identified as drawing # KS1742D, Plate 5-5A. Also, a cross-section drawing, Plate 3-10, was provided in the Round II submittal that reflects final reclamation cross sections of the basin areas with earthwork quantities provided. Plate 3-10 has been revised (cross-sections and contours) based on new cross section data.

3. R645-301-742.313, The plan must include backfilling ditch DD-4, this ditch will no longer be needed to achieve the purpose for which it was authorized. Backfilling and regrading to promote overland flow will approximate AOC for the regraded portion of the site.

Response: "Energy West" reviewed the previous submittal determination concerning the DD-4 ditch. Further inspection and survey work of the site confirms our previous decision to have the ditch remain intact. With this in mind, phone contact with the Division was made and arrangements to have Reclamation Specialist of the Division conduct an onsite field evaluation, specifically the DD-4 ditch situation and the question of final reclamation.

After the field inspection was conducted, it was concluded that the ditch would remain intact. This decision was based on the following parameters.

- 1. To fill in the ditch and try to create overland sheet flow (water) could jeopardized the outslope conditions as they exist at this time. Surface flows, to a certain degree, would still follow the natural slope towards the north. Concentrated flows would create erosion rills in the same path direction as the present DD-4 ditch line.*

(long range concerns)

Division of Oil, Gas and Mining

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Page Three

2. The area has been proven stable and has not shown signs of deterioration over the past several years.

3. Established vegetation has provided a means of minimizing erosion. To fill in the ditch would cause severe damage to that vegetation growth, during construction efforts.

4. The terrace area that contains the DD-4 ditch is a natural buffer zone for rock falls and could prevent rocks from reaching the County road at the base of the CCFP site.

5. Backfilling the DD-4 ditch would not change the AOC significantly.

Therefore the text found on page 25, Sec. 761-General Comments and 762.100 will remain as submitted in Round II.

DD-4 Ditch Design and surface flow parameters are provided in the original submittal, volume 11, under the Hydrology section, appendix XIII. The ditch as shown on plate 3-10 x-section drawing, and drawing KS1742D, plate 5-5A depict a gradient flow of -3.2% through the pond reclamation area and into the existing County road bar ditch. The original ditch hydraulic designs are reflected on Map 3, (HA&L) and within the text of appendix XIII of volume 11. As defined in the regulations final reclamation structures, in this case a permanent diversion, require parameters to comply with a 100 year/ 6 hour storm event. This storm event will result in 2.2 inches of rainfall according to the NOAA Atlas 2, Precipitation-Frequency charts. Ditch DD-4 was designed utilizing the 10 year/ 24 hour storm event of 2.4 inches which results in peak flow in excess of the 100 year/ 6 hour storm event. Calculations to verify the original designs are located in Energy West's original volume 11, appendix XIII, pages 1 through 8.

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The HA&L design for Ditch DD-4 channel indicates water velocities will be 3.09 fps to 3.92 fps for slopes of 6% and 12% respectively. These flows are below the 5 fps non-erodible permissible velocity for a ditch with these characteristics. Final reclamation of the Ditch DD-4 in the sediment basin area will have a slope of 3.2% utilizing the same design criteria as the original ditch design. The design flow of 0.7 cfs will result in a velocity of 2.03 fps and depth of 0.23 feet. As a result of the design criteria rip-rap will not be necessary, however, riprap will be installed at the confluence with County Road bar ditch. Using the SCS riprap design method a D_{50} of less than 1" was estimated. The riprap transition will be constructed with a D_{50} of 0.5 feet (refer to Drawing KS1742D, Plate 5-5A0.

4. R645-301-742.200, Provide a sediment control plan for controlling sediment following sediment pond removal.

Response: Refer to plan submitted in last response dated September 29, 1997, pages 25 and 26 which do in fact indicate "Energy West's" intentions to provide sediment control. Drawing # KS1742D, plate 5-5A will reflect silt fence locations. Page 26 of the previously submitted deficiencies will be revised, and reflect additional information concerning subsoil and topsoil pile sediment control. Attached for your review. The silt fence will be removed when vegetation has been established, with consent and approval by the Division.

5. R645-301-542.800, R645-301-820.100, After the details of the reclamation plan have been worked out and the entire plan is acceptable to the Division, the permittee will submit a overall reclamation cost estimate and, if necessary, revise the reclamation bond in accordance with that estimate.

Response: "Energy West" does commit to follow through with the above stated regulation requirements. When the remaining deficiencies have been resolved and accepted by the Division, a complete amendment to the plan will be provided (seven copies) which will include the latest reclamation cost estimates.

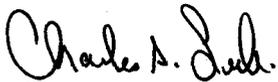
Please review the revisions to drawing KS1715D, Plate 5-4, of Volume 11 which have been made to reflect those contour and x-sections changes required for the pond areas, attached for your review.

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Page Five

When the last of the items have been accepted a time extension of sixty days is requested to allow time to compile the additional copies of the permit amendment, Volume 11.

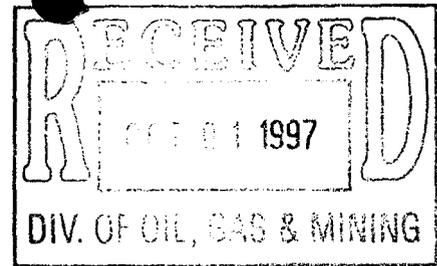
Thank you for your help and expertise in resolving these issues, if there are any further questions or concerns please call Charles Semborski at 687-4720 or Richard Northrup at 687-4822.

Sincerely,



Charles Semborski
Environmental and Geology Supervisor

cc: Blake Webster
Carl Pollastro
Susan Tuttle (File)
Chuck Semborski



September 29, 1997

ACT/015/019 #2
ACT 1015/019-97C
Daron

Utah Coal Regulatory Program
Division of Oil, Gas and Mining
1594 North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801

Attention: Mr. Darron Haddock
Permit Supervisor

Re: Fan Portal Reclamation, PacifiCorp, Cottonwood/Wilberg Mine, ACT/015/019, Folder #3, Emery County, Utah

PacifiCorp, by and through its wholly-owned subsidiary, Energy West Mining Company ("Energy West") as mine operator, herewith submits the response to the technical deficiencies dated August 28, 1997 (refer to the attached *Summary of Deficiencies*). One copy is enclosed of each of the text sections to be replaced in Volume 11. Upon approval, 7 additional copies of the text sections to be replace will be sent to your office.

The following is a summary of the sections and maps to be replaced:

<i>R645-301-200 SOILS</i>	⇒ <i>Replace entire section</i>
<i>R645-301-300 BIOLOGY</i>	⇒ <i>Replace pages 28 and 31.</i>
<i>R645-301-400 LAND USE and AIR QUALITY</i>	⇒ <i>Replace entire section</i>
<i>R645-301-700 HYDROLOGY</i>	⇒ <i>Replace entire section</i>

Huntington Office:
(801) 687-9821
Fax (801) 687-2695
Purchasing Fax (801) 687-9092

Deer Creek Mine:
(801) 381-2317
Fax (801) 381-2285

Cottonwood Mine:
(801) 748-2319
Fax (801) 748-2380

Division of Oil, Gas and Mining
September 29, 1997
Page two

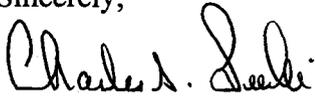
MAPS

<i>Plate 3-10 - CM-10353-CP</i>	<i>↻ Replace map</i>
<i>CM-10351-CP</i>	<i>↻ Replace map</i>
<i>Plate 3-13 - CM-10501-CP</i>	<i>↻ Replace map</i>
<i>Plate 5-1 - KS1700D</i>	<i>↻ Replace map</i>
<i>Plate 5-2 - KS1713D</i>	<i>↻ Replace map</i>
<i>Plate 5-4 - KS1715C</i>	<i>↻ Replace map</i>
<i>* Plate 5-5 - KS1710D</i>	<i>↻ Replace map</i>
<i>* Plate 5-6 - KS1709D</i>	<i>↻ Delete map</i>
<i>Plate 5-7 - KS1729C</i>	<i>↻ Add map</i>

** Plate 5-5 and Plate 5-6 have been combined on Plate 5-5*

Thank you again for your assistance and quick response on finalizing this revision. If there are any questions or concerns please call Chuck Semborski at 687-4720 or Bob Willey 687-4722.

Sincerely,



Charles A. Semborski
Geology and Environmental Supervisor
enclosures:

CC: Blake Webster
Carl Pollastro
Chuck Semborski
Barbara Adams (File)



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

Michael O. Leavitt
Governor
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801-538-7223 (TDD)

August 27, 1997

TO: File

THRU: Daron Haddock, Permit Supervisor *DRH*

FROM: Jess Kelley, Reclamation Engineer *JK*

RE: Cottonwood Fan Portal Reclamation, PacifiCorp, Cottonwood/Wilberg Mine, ACT/015/019-97C, Folder #2, Emery County, Utah

SUMMARY:

The Cottonwood Fan Portal area was initially disturbed in the early 1980s. At that time, it was the intention of the permittee to construct a fan portal and a facilities pad there. However, conditions changed and this plan was never carried out. The salvaged topsoil and subsoil material remained where they had been stockpiled and the cuts for the planned facilities remained, but no facilities were built and nothing further was done with the area.

In 1995, the permittee notified the Division that it planned to reclaim the area sometime in the spring and summer of 1997. The Division then decided to review the reclamation plan, which it had approved in the 1980s, for technical adequacy and regulatory compliance. The Division found the reclamation plan to be technically and regulatorily deficient and remanded it to the permittee for revision. The permittee then resubmitted the reclamation plan, for Division review, in July of 1997.

This memorandum constitutes this writer's review of the revised reclamation plan which was submitted in July of 1997. It is written in a form in which it can be incorporated directly into the current technical analysis (TA) for this site.

TECHNICAL ANALYSIS:

RECLAMATION PLAN

APPROXIMATE ORIGINAL CONTOUR RESTORATION

Analysis:

Information regarding the restoration of the Cottonwood Fan Portal area to its approximate original contour are found on pages 5 through 7 of Section 500, in Appendix A, and on Plates 5-1, 5-2, 5-3 and 5-5. See also **BACKFILLING AND GRADING** below.

On April 15, 1997, Division personnel and representatives of the permittee visited the Cottonwood Fan Portal site in order to determine the best way to reclaim the site. During that visit, it became obvious that the site could not be restored to its exact original contour. The excessive slope length, subsurface seeps, and rock strata which slope outward would make the resulting slope unstable.

However, the area will be restored to a configuration which both approximates the original contour and attains the necessary stability. Exposed coal seams will be covered. Ledges and cutslopes will be backfilled. Seeps which might jeopardize fill stability will be drained through gravel underdrains. Vegetation will be reestablished. These reclamation measures will serve to blend the site into the surrounding topography and make it aesthetically and geomorphically compatible with the surrounding area. The net result is shown by computer-assisted photographic reconstructions in Appendix A.

Findings:

The plan fulfills the requirements of this section.

BACKFILLING AND GRADING

Analysis:

Information regarding the final backfilling and grading of the Cottonwood Fan Portal area is found on pages 5 through 8 of Section 500 and on Plates 5-1, 5-2, 5-3 and 5-5. See also **APPROXIMATE ORIGINAL CONTOUR RESTORATION** above.

For purposes of backfilling and grading, 5 main terraces have been identified on the hillside of the Cottonwood Fan Portal area. These have been designated, from lowest to highest, Terrace 1, Terrace 2, Terrace 3, Terrace 4 and Terrace 4A. Terraces 1 and 2, the lowest terraces, are the areas of most concern. Both contain sizable ledges and Terrace 1 contains an exposed coal seam which must and will be covered.

Fill material for the reclamation of the Cottonwood Fan Portal area will be taken from the 2 adjacent stockpiles shown on Plates 5-2 and 5-5. Plate 5-2 shows the extent of fill placement on the 5 main terraces. Subsoil will be taken from the subsoil stockpile which lies near the Diesel roadway portal and topsoil will be taken from the topsoil stockpile near the lower sediment pond. The subsoil pile contains approximately 7960 cubic yards and the topsoil pile contains approximately 990 cubic yards. According to the soil placement tables on Plate 5-5, 1551 cubic yards of subsoil and 1031 cubic yards of topsoil will be required.

The values of soil material properties determined for the rest of the site were also used to evaluate the stability of the fills at the Cottonwood Fan Portal site. These are:

Cohesion c = 1872 psf
Density (W) = 120 pcf
Friction Angle (ϕ) = 27.3 degrees

An analysis done using these properties yields the following slope parameters:

Maximum Fill Height (H) = 90 feet
Maximum Slope = 1.5h:1v
Safety Factor (SF) = 1.3

Terrace 1 will receive enough fill material to completely cover the exposed coal seam and backfill most of the overlying ledge. The fill will be placed at a maximum slope of 1.5h:1v, which will provide a static stability safety factor of 1.3. Gravel drains will be incorporated into the fill to drain water from seeps. Boulder-size rocks from nearby will be placed along the toe of this fill to further enhance its stability. This is important because the fill will be placed on a solid rock stratum which slopes away from the face of the ledge.

Terrace 2 will receive enough material to backfill all but the upper 1 or 2 feet of the overlying ledge. This fill will also be placed at a maximum slope of 1.5h:1v in order to provide a static stability safety factor of 1.3.

Terraces 3, 4 and 4A will each receive 1 to 2 feet of material. This material will be used to fill the voids at the base of the cuts and will also provide a layer of suitable plant

growth medium for revegetation.

A diversion along the entire length of the upper boundary of the site collects undisturbed runoff and discharges it into a nearby natural drainage. At its lower end, it makes a right-angle turn on unconsolidated material in order to reach that natural drainage. This diversion has been stable for many years and will thus be left in place. However, it will be modified at its lower end to eliminate the right-angle turn and thus take a straight route to the natural drainage.

Findings:

The plan fulfills the requirements of this section.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Analysis:

Affected area boundary maps.

In 1997, the reclamation plan for the Cottonwood Fan Portal area was modified. As part of the modified plan, the reclamation maps were also modified. The affected area remained unchanged except for a small addition which was made to its southeast corner to accommodate the rerouting of the main undisturbed drainage in that area.

The affected area boundary of the Cottonwood Fan Portal area, as modified in 1997, is shown on Plates 5-1--Cottonwood Fan Portal Reclamation Slope, 5-2--Cottonwood Fan Portal Proposed Soil Placement, and 5-5--Cottonwood Fan Portal Final Reclamation. These maps were certified by John Christensen, a professional engineer licensed and registered in the state of Utah.

Bonded area map.

In 1997, the reclamation plan for the Cottonwood Fan Portal area was modified. As part of the modified plan, the reclamation maps were also modified. The bonded area remained unchanged except for a small addition which was made to its southeast corner to accommodate the rerouting of the main undisturbed drainage in that area.

The bonded area boundary of the Cottonwood Fan Portal area, as modified in 1997, is shown on Plates 5-1--Cottonwood Fan Portal Reclamation Slope, 5-2--Cottonwood Fan Portal Proposed Soil Placement, and 5-5--Cottonwood Fan Portal Final Reclamation. These maps were certified by John Christensen, a professional engineer licensed and registered in the state of Utah.

Reclamation backfilling and grading maps.

In 1997, the reclamation plan for the Cottonwood Fan Portal area was modified. As part of the modified plan, the reclamation maps were also modified. Maps 5-2--Cottonwood Fan Portal Proposed Soil Placement and 5-5--Cottonwood Fan Portal Final Reclamation show the details of reclamation backfilling and grading in plan view. Map 5-3--Cottonwood Fan Portal Reclamation Slope Cross Sections, which actually consists of 2 plates, shows the backfilling and grading plan in cross section. These maps were certified by John Christensen, a professional engineer licensed and registered in the state of Utah.

Reclamation facilities maps.

In 1997, the reclamation plan for the Cottonwood Fan Portal area was modified. As part of the modified plan, the reclamation maps were also modified. Map 5-5--Cottonwood Fan Portal Final Reclamation shows the reclamation facilities, which consist only of diversion ditches and 2 sediment ponds, in plan view. This map was certified by John Christensen, a professional engineer licensed and registered in the state of Utah.

Final surface configuration maps.

In 1997, the reclamation plan for the Cottonwood Fan Portal area was modified. As part of the modified plan, the reclamation maps were also modified. Map 5-5--Cottonwood Fan Portal Final Reclamation shows the final surface configuration in plan view. Map 5-3--Cottonwood Fan Portal Reclamation Slope Cross Sections, which actually consists of 2 plates, shows the final surface configuration in cross section. These maps were certified by John Christensen, a professional engineer licensed and registered in the state of Utah.

Reclamation treatments maps.

In 1997, the reclamation plan for the Cottonwood Fan Portal area was modified.

As part of the modified plan, the reclamation maps were also modified. Map 5-2--Cottonwood Fan Portal Proposed Soil Placement shows the extent of topsoil placement. Map 5-6--Cottonwood Fan Portal Revegetated Areas shows the revegetation plan. Map 3-13--Cottonwood Fan Portal Hydrological Map shows the drainage control plan, including water monitoring points and UPDES discharge points. These maps were certified by John Christensen, a professional engineer licensed and registered in the state of Utah.

Findings:

The plan fulfills the requirements of this section.

BONDING AND INSURANCE REQUIREMENTS

Analysis:

Determination of bond amount.

In 1995, the permittee notified the Division that it planned to reclaim the Cottonwood Fan Portal area sometime in 1997. The Division then decided to review the reclamation plan, which it had approved in the 1980s, for technical adequacy and regulatory compliance. The Division found the reclamation plan to be technically and regulatorily deficient and remanded it to the permittee for revision. The permittee then resubmitted the reclamation plan, for Division review, in July of 1997.

A cover letter from the permittee which accompanies the July, 1997 submittal explains that the reclamation cost estimate for the Cottonwood Fan Portal area has not been changed from what it is in the approved plan. This is because it would make no sense to repeatedly redo the entire reclamation cost estimate with each interim revision of the reclamation plan before the entire plan is approved by the Division. Thus, after the details of the reclamation plan have been worked out and the entire plan is acceptable to the Division, the permittee will submit a revised overall reclamation cost estimate and, if necessary, revise the reclamation bond in accordance with that estimate.

Findings:

The plan does not fulfill the requirements of this section.

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August 27, 1997

The permittee must provide the following, prior to approval, in accordance with the requirements of:

R645-301-542.800, R645-301-820.100

After the details of the reclamation plan have been worked out and the entire plan is acceptable to the Division, the permittee will submit a revised overall reclamation cost estimate and, if necessary, revise the reclamation bond in accordance with that estimate.

RECOMMENDATION:

It is recommended that the revised reclamation plan for the Cottonwood Fan Portal area, except the reclamation cost estimate, be approved. It is further recommended that, after the Division finds the plan acceptable, but before it formally approves the plan, the permittee submit a revised overall reclamation cost estimate and, if necessary, revise the reclamation bond in accordance with that estimate.



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

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Governor
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Division Director

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August 8, 1997

TO: File

THRU: Daron Haddock, Permit Supervisor *DH*

FROM: Susan M. White, Senior Reclamation Biologist *SMW*

RE: Fan Portal Reclamation Review Round II, PacifiCorp, Cottonwood Wilburg Mine, ACT\015\019-97C, Folder #2, Emery County, Utah

SUMMARY:

The reclamation plan for the Cottonwood Fan Portal was reviewed as part of the mid-term in early 1997. The Operator responded to that review with a permit change dated July 1, 1997. The below Technical Analysis reviews this latest submittal. How the permit change fits into the current approved plan was somewhat confusing and therefore not reviewed. The amendment should not be approved since some minor deficiencies still remain.

TECHNICAL ANALYSIS

ENVIRONMENTAL RESOURCE INFORMATION

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

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference R645-301-411.

Analysis:

The Old Johnson Mine is located directly across the canyon from the Trail Mountain Mine surface facilities and directly adjacent to the Cottonwood Fan Portal area (Appendix III, page 5 and Plate 3-16A). The Old Johnson Mine site has been recorded as a historic resource and provided with the Smithsonian registration number 42Em1633. An analysis of the site by F.R. Hauck of AERC concluded that this mine is of historic significance and has the potential for nomination to the National Register. The Johnson Mine site includes two walled-in portals, a mine terrace associated with the portals, road, the remnants of a coal slide or chute, a storage area under a rock walled boulder, an outhouse, and the old weigh house structure. The site is justified to the National Register Status as significant because it is an integral unit.

A rough sketch of the Old Johnson Mine is given in the original 1983 site survey in Chapter 2 Attachment 6. Plate 5-1 delineates the site in conjunction with the other surface facilities of the Cottonwood Mine and Trial Mountain Mine. An e-mail received from Jim Dykman, SHIPO, (received August 5, 1997) states: "the road has been updated and changed over, our office believes that the road no longer has integrity and would not be an eligible part of the historic mine". The permit must be updated to reflect this determination.

In section Protection of Public Parks and Historic Places (page 4-40) of the permit a discussion is provided for methods used to protect the Johnson Mine site during reclamation activities. Methods used will include establishing a berm along the roadway, flagging and ribbon barrier zones and educating construction works about the old mine site.

Findings:

The permittee must provide the following in accordance with the requirements of:

R645-301-411.143, the permit must update the evaluation of the Old Johnson Mine Site and the road associated with the site according to SHIPO's determination. This determination will require the reclamation of the road.

FISH AND WILDLIFE RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 784.21; R645-301-322.

Analysis:

Drawing #KS1691C, Cottonwood Fan Portal Raptor Nest Location Map, identifies raptor nests and activity sites, bat activity, and big game use areas in the Cottonwood Canyon Area. Several raptor nests are located within a mile radius of the fan portal, however these nests have not been found to be active in recent years. A Peregrine Falcon pair were observed approximately two miles south of the fan portal area 1996 displaying courtship activities. The reclamation work is not expected to have any impacts on raptors or bats. The permit states that no threatened or endangered species occur on the site property (1976) (page 2-172). The USFWS concerns for the project are habitat for the bald eagle and peregrine falcon and water depletion to the Colorado River. The permit states that no additional water will be used in conjunction with the reclamation of this site. The permit commits to an annual raptor monitoring program which should identify the presence of Peregrine falcons prior to site activity.

Findings:

The minimum requirements of this section have been met.

LAND-USE RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.22; R645-301-411.

Analysis:

The stated premining land use is range forage and wildlife habitat. The land in the Cottonwood portal area is used primarily for spring and winter range forage, wildlife habitat and mineral mining. This submittal has changed the post mining land use to wildlife only. It seems doubtful that cattle have in the past or will in the future use the steep slopes in the Cottonwood fan portal area for grazing. The requirement to return the site to a grazing land use may be revised, if the stated premining land use was incorrect. If revised, the permit should justify this revision by discussing the terrain and other factors that inhibit cattle use on this slope although the surrounding lands (canyon bottoms and top of plateau) may be used for grazing. By eliminating this land use the requirement for a production success standard is also eliminated.

No comments could be found in the permit from the surface land owner concerning the proposed reclamation and post mining land use. The L.D.S. Church is shown as the land owner.

Findings:

The permittee must provide the following in accordance with the requirements of :

R645-301-412.130, the permit must discuss the criteria for higher and better uses for the proposed alternative postmining land use.

R645-301-412.200, a copy of the comments from the land owner concerning the proposed reclamation and the post mining land use must be included in the permit.

VEGETATION RESOURCE INFORMATION

Regulatory Reference: R645-301-320.

Analysis:

The Cottonwood Fan Portal Reference area was measured for vegetative cover

and shrub density. Average total living cover was estimated to be 42 percent and 762 individual tree and/or shrubs per acre in 1994 and 1996. Productivity was estimated at 1800 pounds forage per acre based on the reference area in October 1989 (page 2-158.1).

Findings:

The permit is in compliance with the requirements of this section.

RECLAMATION PLAN

REVEGETATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

General Requirements

The seed mixture to be used for final revegetation on the disturbance associated with the Cottonwood Fan Portal (page 34) will be broadcast seeded by hand. Slopes 1:1 or steeper will be hydroseeded. All native species have been used in the seed mixture. The seed mixture selection is based on the results of reclamation seeding on the lower fan portal area, the Trail Mountain Mine test plots (across the street) and the surrounding area.

Mulching and Other Soil Stabilizing Practices

Seeded areas will be covered with a curlex blanket. Only slopes 1:1 or steeper will be hydromulched. Curlex blanket has shown to provide excellent soil protection.

Standards for Success.

An area designated in Drawing KS1709D was seeded in 1981. This area is approximately 2.32 acres in size. The remaining portion of the fan portal area will be seeded in 1998. It is assumed that the period of extended responsibility is be the same for both portions of

Page 6
ACT/015/019-97C
August 8, 1997

the fan site. Vegetation cover, shrub density and production of the reclaimed fan portal will be compared to the reference area prior to bond release.

Findings:

The information provided meets the minimum regulatory requirements of this section.

RECOMMENDATION:

Prior to approval the requirements of R645-301-411.143, R645-301-412.130, and R645-301-412.200 must be provided as outlined above.



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

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James W. Carter
Division Director

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801-538-7223 (TDD)

August 28, 1997

Chuck Semborski, Environmental Supervisor
Energy West
P. O. Box 310
Huntington, Utah 84528

Re: Deficiencies in Fan Portal Reclamation Plan (Midterm Review), PacifiCorp,
Cottonwood/Wilberg Mine, ACT/015/019-97C, Folder #3, Emery County, Utah

Dear Mr. Semborski:

The Division has conducted a review of your July submittal which addressed reclamation of the Cottonwood Fan Portal at the Cottonwood/Wilberg Mine and was submitted as a result of the mid term review. While improvements have been made in the reclamation plan there are still a few remaining deficiencies.

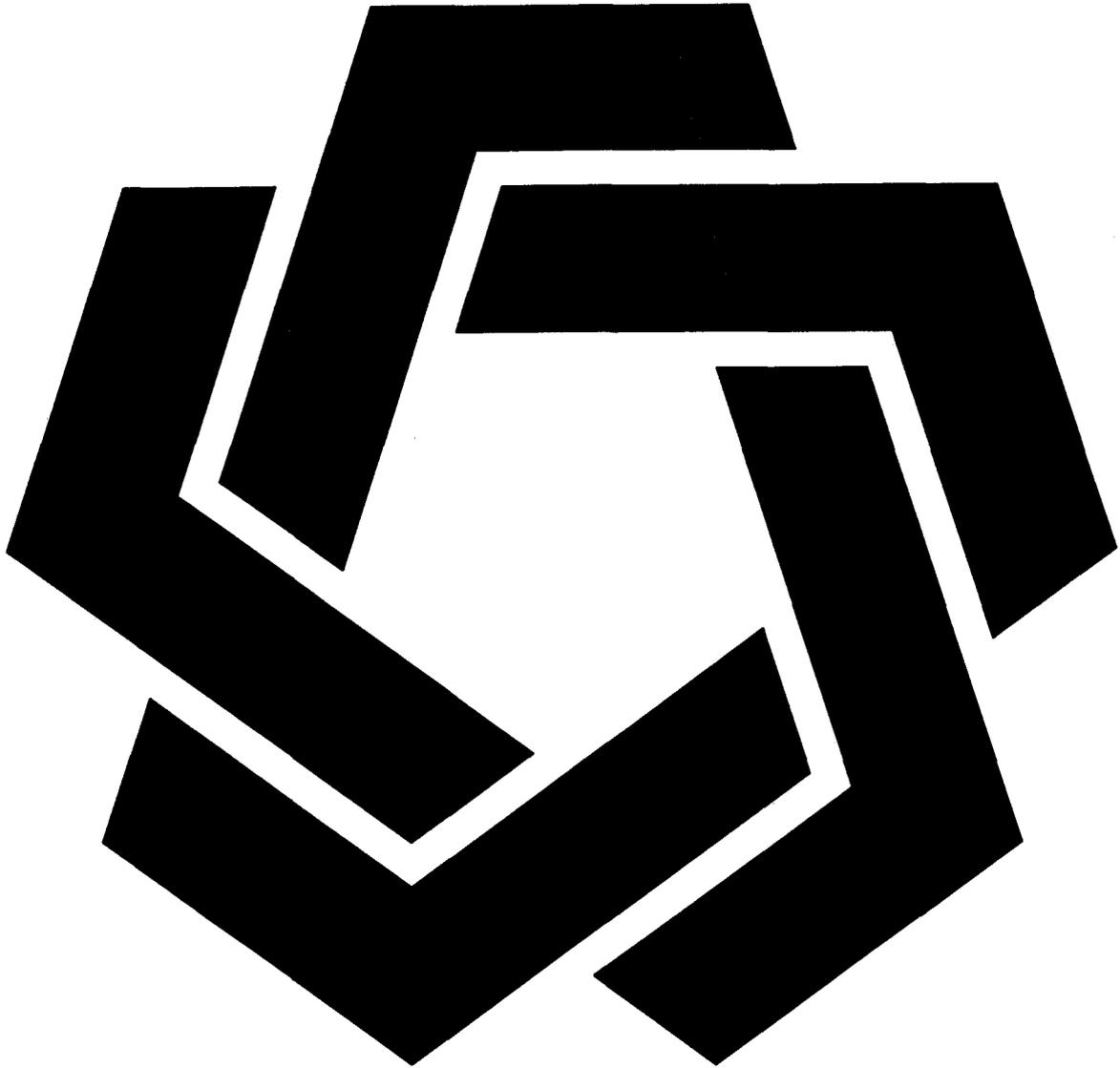
The enclosed Technical Analysis and Findings document discusses the review and outlines the deficiencies that still need to be corrected. Please review the document carefully. It is imperative that the deficiencies be corrected by no later than September 29, 1997. If you have any questions regarding the requirements or the analysis, please don't hesitate to call.

Sincerely,

Daron R. Haddock
Permit Supervisor

tat
Enclosure
cc: W. Malencik
O:\015019.CWWW\FINAL\ARND2COV.LTR

State of Utah
Division of Oil, Gas and Mining
Utah Coal Regulatory Program



Technical Analysis and Findings
Cottonwood Fan Portal Reclamation
Round 2
August 27, 1997

INTRODUCTION

This Technical Analysis (TA) is written as part of the permit review process. It documents the Findings that the Division has made to date regarding the application for a permit and is the basis for permitting decisions with regard to the application. The TA is broken down into logical section headings which comprise the necessary components of an application. Each section is analyzed and specific findings are then provided which indicate whether or not the application is in compliance with the requirements.

Often the first technical review of an application finds that the application contains some deficiencies. The deficiencies are discussed in the body of the TA and are identified by a regulatory reference which describes the minimum requirements. In this Technical Analysis we have summarized the deficiencies at the beginning of the document to aid in responding to them. Once all of the deficiencies have been adequately addressed, the TA will be considered final for the permitting action.

It may be that not every topic or regulatory requirement is discussed in this version of the TA. Generally only those sections are analyzed that pertain to a particular permitting action. TA's may have been completed previously and the revised information has not altered the original findings. Those sections that are not discussed in this document are generally considered to be in compliance.

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ENVIRONMENTAL RESOURCE INFORMATION

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

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference R645-301-411.

Analysis:

The Old Johnson Mine is located directly across the canyon from the Trail Mountain Mine surface facilities and directly adjacent to the Cottonwood Fan Portal area (Appendix III, page 5 and Plate 3-16A). The Old Johnson Mine site has been recorded as a historic resource and provided with the Smithsonian registration number 42Em1633. An analysis of the site by F.R. Hauck of AERC concluded that this mine is of historic significance and has the potential for nomination to the National Register. The Johnson Mine site includes two walled-in portals, a mine terrace associated with the portals, road, the remnants of a coal slide or shute, a storage area under a rock walled boulder, an outhouse, and the old weigh house structure. The site is justified to the National Register Status as significant because it is an integral unit.

A rough sketch of the Old Johnson Mine is given in the original 1983 site survey in Chapter 2 Attachment 6. Plate 5-1 delineates the site in conjunction with the other surface facilities of the Cottonwood Mine and Trial Mountain Mine. An e-mail received from Jim Dykman, SHIPO, (received August 5, 1997) states: "the road has been updated and changed over, our office believes that the road no longer has integrity and would not be an eligible part of the historic mine". The permit must be updated to reflect this determination.

In section Protection of Public Parks and Historic Places (page 4-40) of the permit a discussion is provided for methods used to protect the Johnson Mine site during reclamation activities. Methods used will include establishing a berm along the roadway, flagging and ribbon barrier zones and educating construction works about the old mine site.

TECHNICAL ANALYSIS

Last revised - August 28, 1997

Findings:

The permittee must provide the following in accordance with the requirements of:

R645-301-411.143, the permit must update the evaluation of the Old Johnson Mine Site and the road associated with the site according to SHIPO's determination. This determination will require the reclamation of the road.

FISH AND WILDLIFE RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 784.21; R645-301-322.

Analysis:

Drawing #KS1691C, Cottonwood Fan Portal Raptor Nest Location Map, identifies raptor nests and activity sites, bat activity, and big game use areas in the Cottonwood Canyon Area. Several raptor nests are located within a mile radius of the fan portal, however these nests have not been found to be active in recent years. A Peregrine Falcon pair were observed approximately two miles south of the fan portal area 1996 displaying courtship activities. The reclamation work is not expected to have any impacts on raptors or bats. The permit states that no threatened or endangered species occur on the site property (1976) (page 2-172). The USFWS concerns for the project are habitat for the bald eagle and peregrine falcon and water depletion to the Colorado River. The permit states that no additional water will be used in conjunction with the reclamation of this site. The permit commits to an annual raptor monitoring program which should identify the presence of Peregrine falcons prior to site activity.

Findings:

The minimum requirements of this section have been met.

TECHNICAL ANALYSIS

Last revised - August 28, 1997

LAND-USE RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.22; R645-301-411.

Analysis:

The stated premining land use is range forage and wildlife habitat. The land in the Cottonwood portal area is used primarily for spring and winter range forage, wildlife habitat and mineral mining. This submittal has changed the post mining land use to wildlife only. It seems doubtful that cattle have in the past or will in the future use the steep slopes in the Cottonwood fan portal area for grazing. The requirement to return the site to a grazing land use may be revised, if the stated premining land use was incorrect. If revised, the permit should justify this revision by discussing the terrain and other factors that inhibit cattle use on this slope although the surrounding lands (canyon bottoms and top of plateau) may be used for grazing. By eliminating this land use the requirement for a production success standard is also eliminated.

No comments could be found in the permit from the surface land owner concerning the proposed reclamation and post mining land use. The L.D.S. Church is shown as the land owner.

Findings:

The permittee must provide the following in accordance with the requirements of :

R645-301-412.130, the permit must discuss the criteria for higher and better uses for the proposed alternative postmining land use.

R645-301-412.200, a copy of the comments from the land owner concerning the proposed reclamation and the post mining land use must be included in the permit.

TECHNICAL ANALYSIS

Last revised - August 28, 1997

VEGETATION RESOURCE INFORMATION

Regulatory Reference: R645-301-320.

Analysis:

The Cottonwood Fan Portal Reference area was measured for vegetative cover and shrub density. Average total living cover was estimated to be 42 percent and 762 individual tree and/or shrubs per acre in 1994 and 1996. Productivity was estimated at 1800 pounds forage per acre based on the reference area in October 1989 (page 2-158.1).

Findings:

The permit is in compliance with the requirements of this section.

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.21, 817.200(c); R645-301-220, -301-411.

Analysis:

The MRP amendment contains the following information:

- Soil Survey - adequate information provided
- Soil Sampling - confusion between sample sets

Soil Survey - Adequate Information Provided

The original MRP (pages 2-154 thru 2-158) contains Order-III soil survey information for large tracts of land. In other words, no specific soil pit or on-site investigation was made for the fan-portal soils. Therefore, the Order-III soil survey is inadequate to determine the depth and quality of soil that was salvaged from the fan portal area.

To supply adequate soil survey information, PacifiCorp substituted an Order-I survey that was completed in 1993 for the Cottonwood tube-conveyor system. The Order-I soil survey provides an on-site investigation and soil map for the land that is north and adjacent of the proposed fan portal. The assumption for using this survey is that it adequately represents soils that are similar in depth and quality. According to the original Order-III survey, soils fall within map unit AbG for both the fan portal and tube conveyor areas. Therefore, soils within the fan portal area are most likely similar to the "Map Unit A, Lithic Ustorthents" as described in the Order-I survey.

TECHNICAL ANALYSIS

Last revised - August 28, 1997

Soil Sampling - Confusion Between Sample Sets

Confusion exists between soil sample data sets. These sample sets as referenced by the amendment include the 1997 samples, tube-conveyor samples on pages 14-16, Appendix-C Order-I soil survey samples, and the Biology Section referenced sample set. Primarily, how do they relate to each other and how do they pertain to the reclamation of the fan portal? In addition, there appears to be discrepancies with certain parameter results between sample sets (e.g., parameters that appear to have the largest discrepancies are pH, EC, and SAR). These discrepancies need to be addressed and how they relate to reclamation of the fan portal.

Please locate all sample sets and references on a map. Provide discussion concerning the map and each sample set succinctly within the amendment.

What are the Biology Section soil samples? Why, where, when, and how were these samples taken?

Findings:

The permittee must provide the following, prior to approval, in accordance with the requirements of:

R645-301-223, R645-301-120 and R645-301-130, Please provide soil sampling information as discussed above.

OPERATION PLAN

TOPSOIL AND SUBSOIL

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

Analysis:

The amended MRP submittal needs to address and clarify the following:

- Soil Salvage - information is incomplete
- Stockpile Locations - conflicting information

TECHNICAL ANALYSIS

Last revised - August 28, 1997

Soil Salvage - Information Incomplete

The amendment states mentions the fact that topsoil and subsoil were salvaged from the Cottonwood fan-portal area. The mass-balance tables provided on the reclamation map provide soil-placement volumes during fan-portal reclamation. These tables do not provide information concerning salvaged-soil volumes for either the topsoil or subsoil. Please provide salvaged-soil volumes on the mass-balance tables.

In addition, the soil and fill materials that are stockpiled beneath the fan-portal area needs clarification. The amendment references this "soil" material as being "reclaimed." How does this material differ from the stockpiled topsoil and subsoils? What volume of this material is stockpiled and will any of this material be used for reclaiming the fan-portal area?

Stockpile Locations - Conflicting Information

The Mt. Nebo soil survey report, Appendix III states that the Cottonwood Fan Portal topsoil and subsoil piles will be transported to the reclaimed Cottonwood Waste Rock site. However, Plate 5-5 show stockpiles labeled CFP. Did any CFP-stockpiled soil get transported to the Waste Rock site during construction of the Cottonwood Belt and Diesel-Roadway Portals? Did any soil from the Portal construction get stockpiled with the CFP soil? If so, how much and which pile?

Findings:

The permittee must provide the following, prior to approval, in accordance with the requirements of:

R645-301-231 and R645-301-120, Please provide soil salvage and stockpile information as discussed above.

RECLAMATION PLAN

TOPSOIL AND SUBSOIL

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

Analysis:

Conflicting information exists within the MRP amendment concerning soil redistribution. Please address the following to clarify soil redistribution:

- The amendment states different amounts of topsoil and subsoil for reclamation than those shown in the mass-balance tables as referenced on the reclamation map.
- In addition to the mass-balance tables, provide a table and discussion for all soil redistribution. The information should identify where topsoil and subsoil will be placed, what areas, how thick and what volumes.
- Any remaining soil left in the stockpiles needs to be identified and discussed. Identify interim reclamation of the remaining soil and stockpiles. How will the remaining soil be used?

Findings:

The permittee must provide the following, prior to approval, in accordance with the requirements of:

R645-301-241 and R645-301-120, Please provide soil redistribution information as discussed above.

TECHNICAL ANALYSIS

Last revised - August 28, 1997

REVEGETATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116;
R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282,
-302-283, -302-284.

Analysis:

General Requirements

The seed mixture to be used for final revegetation on the disturbance associated with the Cottonwood Fan Portal (page 34) will be broadcast seeded by hand. Slopes 1:1 or steeper will be hydroseeded. All native species have been used in the seed mixture. The seed mixture selection is based on the results of reclamation seeding on the lower fan portal area, the Trail Mountain Mine test plots (across the street) and the surrounding area.

Mulching and Other Soil Stabilizing Practices

Seeded areas will be covered with a curlex blanket. Only slopes 1:1 or steeper will be hydromulched. Curlex blanket has shown to provide excellent soil protection.

Standards for Success

An area designated in Drawing KS1709D was seeded in 1981. This area is approximately 2.32 acres in size. The remaining portion of the fan portal area will be seeded in 1998. It is assumed that the period of extended responsibility is be the same for both portions of the fan site. Vegetation cover, shrub density and production of the reclaimed fan portal will be compared to the reference area prior to bond release.

Findings:

The information provided meets the minimum regulatory requirements of this section.

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APPROXIMATE ORIGINAL CONTOUR RESTORATION

Analysis:

Information regarding the restoration of the Cottonwood Fan Portal area to its approximate original contour are found on pages 5 through 7 of Section 500, in Appendix A, and on Plates 5-1, 5-2, 5-3 and 5-5. See also **BACKFILLING AND GRADING** below.

On April 15, 1997, Division personnel and representatives of the permittee visited the Cottonwood Fan Portal site in order to determine the best way to reclaim the site. During that visit, it became obvious that the site could not be restored to its exact original contour. The excessive slope length, subsurface seeps, and rock strata which slope outward would make the resulting slope unstable.

However, the area will be restored to a configuration which both approximates the original contour and attains the necessary stability. Exposed coal seams will be covered. Ledges and cutslopes will be backfilled. Seeps which might jeopardize fill stability will be drained through gravel underdrains. Vegetation will be reestablished. These reclamation measures will serve to blend the site into the surrounding topography and make it aesthetically and geomorphically compatible with the surrounding area. The net result is shown by computer- assisted photographic reconstructions in Appendix A.

Findings:

The plan fulfills the requirements of this section.

BACKFILLING AND GRADING

Analysis:

Information regarding the final backfilling and grading of the Cottonwood Fan Portal area is found on pages 5 through 8 of Section 500 and on Plates 5-1, 5-2, 5-3 and 5-5. See also **APPROXIMATE ORIGINAL CONTOUR RESTORATION** above.

For purposes of backfilling and grading, 5 main terraces have been identified on the hillside of the Cottonwood Fan Portal area. These have been designated, from lowest to highest, Terrace 1, Terrace 2, Terrace 3, Terrace 4 and Terrace 4A. Terraces 1 and 2, the lowest terraces, are the areas of most concern. Both contain sizable ledges and Terrace 1 contains an exposed coal seam which must and will be covered.

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Fill material for the reclamation of the Cottonwood Fan Portal area will be taken from the 2 adjacent stockpiles shown on Plates 5-2 and 5-5. Plate 5-2 shows the extent of fill placement on the 5 main terraces. Subsoil will be taken from the subsoil stockpile which lies near the Diesel roadway portal and topsoil will be taken from the topsoil stockpile near the lower sediment pond. The subsoil pile contains approximately 7960 cubic yards and the topsoil pile contains approximately 990 cubic yards. According to the soil placement tables on Plate 5-5, 1551 cubic yards of subsoil and 1031 cubic yards of topsoil will be required.

The values of soil material properties determined for the rest of the site were also used to evaluate the stability of the fills at the Cottonwood Fan Portal site. These are:

Cohesion c = 1872 psf
Density (W) = 120 pcf
Friction Angle (ϕ) = 27.3 degrees

An analysis done using these properties yields the following slope parameters:

Maximum Fill Height (H) = 90 feet
Maximum Slope = 1.5h:1v
Safety Factor (SF) = 1.3

Terrace 1 will receive enough fill material to completely cover the exposed coal seam and backfill most of the overlying ledge. The fill will be placed at a maximum slope of 1.5h:1v, which will provide a static stability safety factor of 1.3. Gravel drains will be incorporated into the fill to drain water from seeps. Boulder-size rocks from nearby will be placed along the toe of this fill to further enhance its stability. This is important because the fill will be placed on a solid rock stratum which slopes away from the face of the ledge.

Terrace 2 will receive enough material to backfill all but the upper 1 or 2 feet of the overlying ledge. This fill will also be placed at a maximum slope of 1.5h:1v in order to provide a static stability safety factor of 1.3.

Terraces 3, 4 and 4A will each receive 1 to 2 feet of material. This material will be used to fill the voids at the base of the cuts and will also provide a layer of suitable plant growth medium for revegetation.

A diversion along the entire length of the upper boundary of the site collects undisturbed runoff and discharges it into a nearby natural drainage. At its lower end, it makes a right-angle turn on unconsolidated material in order to reach that natural drainage. This diversion has been stable for many years and will thus be left in place. However, it will be modified at its lower end to eliminate the right-angle turn and thus take a straight route to the natural drainage.

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Last revised - August 28, 1997

Findings:

The plan fulfills the requirements of this section.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Analysis:

Affected area boundary maps.

In 1997, the reclamation plan for the Cottonwood Fan Portal area was modified. As part of the modified plan, the reclamation maps were also modified. The affected area remained unchanged except for a small addition which was made to its southeast corner to accommodate the rerouting of the main undisturbed drainage in that area.

The affected area boundary of the Cottonwood Fan Portal area, as modified in 1997, is shown on Plates 5-1--Cottonwood Fan Portal Reclamation Slope, 5-2--Cottonwood Fan Portal Proposed Soil Placement, and 5-5--Cottonwood Fan Portal Final Reclamation. These maps were certified by John Christensen, a professional engineer licensed and registered in the state of Utah.

Bonded area map.

In 1997, the reclamation plan for the Cottonwood Fan Portal area was modified. As part of the modified plan, the reclamation maps were also modified. The bonded area remained unchanged except for a small addition which was made to its southeast corner to accommodate the rerouting of the main undisturbed drainage in that area.

The bonded area boundary of the Cottonwood Fan Portal area, as modified in 1997, is shown on Plates 5-1--Cottonwood Fan Portal Reclamation Slope, 5-2--Cottonwood Fan Portal Proposed Soil Placement, and 5-5--Cottonwood Fan Portal Final Reclamation. These maps were certified by John Christensen, a professional engineer licensed and registered in the state of Utah.

TECHNICAL ANALYSIS

Last revised - August 28, 1997

Reclamation backfilling and grading maps.

In 1997, the reclamation plan for the Cottonwood Fan Portal area was modified. As part of the modified plan, the reclamation maps were also modified. Maps 5-2--Cottonwood Fan Portal Proposed Soil Placement and 5-5--Cottonwood Fan Portal Final Reclamation show the details of reclamation backfilling and grading in plan view. Map 5-3--Cottonwood Fan Portal Reclamation Slope Cross Sections, which actually consists of 2 plates, shows the backfilling and grading plan in cross section. These maps were certified by John Christensen, a professional engineer licensed and registered in the state of Utah.

Reclamation facilities maps.

In 1997, the reclamation plan for the Cottonwood Fan Portal area was modified. As part of the modified plan, the reclamation maps were also modified. Map 5-5--Cottonwood Fan Portal Final Reclamation shows the reclamation facilities, which consist only of diversion ditches and 2 sediment ponds, in plan view. This map was certified by John Christensen, a professional engineer licensed and registered in the state of Utah.

Final surface configuration maps.

In 1997, the reclamation plan for the Cottonwood Fan Portal area was modified. As part of the modified plan, the reclamation maps were also modified. Map 5-5--Cottonwood Fan Portal Final Reclamation shows the final surface configuration in plan view. Map 5-3--Cottonwood Fan Portal Reclamation Slope Cross Sections, which actually consists of 2 plates, shows the final surface configuration in cross section. These maps were certified by John Christensen, a professional engineer licensed and registered in the state of Utah.

Reclamation treatments maps.

In 1997, the reclamation plan for the Cottonwood Fan Portal area was modified. As part of the modified plan, the reclamation maps were also modified. Map 5-2--Cottonwood Fan Portal Proposed Soil Placement shows the extent of topsoil placement. Map 5-6--Cottonwood Fan Portal Revegetated Areas shows the revegetation plan. Map 3-13--Cottonwood Fan Portal Hydrological Map shows the drainage control plan, including water monitoring points and UPDES discharge points. These maps were certified by John Christensen, a professional engineer licensed and registered in the state of Utah.

Findings:

The plan fulfills the requirements of this section.

TECHNICAL ANALYSIS

Last revised - August 28, 1997

HYDROLOGIC RECLAMATION 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.

Ground-water Monitoring

No ground water monitoring plan is planned for the fan portal reclamation area. A number of seeps along the contact between the Blackhawk and Star Point formations occur but, none are at a rate sufficient to collect water samples based on the seepage rates observed in 1997. The source of this water is stated to be from local snowmelt that is transported through vertical fractures. No ground water monitoring is specifically tied to reclamation of this area.

The coal seam near the fan portal area dips 2 degrees to the northwest. The disturbance is along the west face of the coal out crop. This suggests, that changes in seepage following mining may occur. The dip of the strata in the central portion of East Mountain dips into the Straight Canyon Syncline, generally 2 to 3 degrees plunging to the northeast. The axis of this syncline lies north of the cottonwood fan portal area and would flow away from the fan portal outcrop. This suggests, that although changes in seepage following mining may occur, a large portion of the mined area to the north would not be a source of recharge/discharge to this outcrop location. Future observations should be made to determine if increases in seepage does occur at the Blackhawk/Star Point contact zones.

Surface-water Monitoring

The monitoring plan states that water monitoring will be conducted at the Cottonwood Fan Portal above and below the mine. The surface water monitoring program will be conducted quarterly through the reclamation period according to the monitoring schedule in Appendix A.

Drainage from the Cottonwood Fan Portal area will be monitored at the sedimentation pond outfall according to the UPDES permit. The UPDES permit only measures treated outflow; therefore, no monitoring is presented which will demonstrate that vegetation is adequate to control erosion on this site. Information that demonstrates that adequate erosion control exists is required prior to removal of the pond and prior to bond release.

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Acid And Toxic-forming Materials

The plan states that all acid and toxic forming materials will be buried with at least four feet of material. No location was identified in the text as needing four feet of cover material.

Transfer Of Wells

No transfer of wells are proposed associated with the reclamation of the Cottonwood Fan Portal area.

Discharges Into An Underground Mine

No mine opening was developed at this site. No discharges into the mine will occur associated with the reclamation activity.

Gravity Discharges

No surface entries or access was developed at this site. Gravity discharge could occur from flow accumulated in mine and reaching the out crop. See the discussion under "Ground Water Monitoring" in this T.A.

Water Quality Standards And Effluent Limitations

The permittee will be required to show that ground and surface water at the site meet the requirements of the R645 regulations prior to bond release.

Because the UPDES permit only measures treated outflow no monitoring is presented to demonstrate that vegetation is adequate to control erosion on this site. This information is required for bond release. Prior to removal of the sedimentation pond the permittee will need to demonstrate that these requirements have been met.

R645-301-761 requires that all permanent diversions have been maintained and the operator will renovate such structures to conform to the approved plan. Therefore, it is recommended the applicant be sure the drainage configuration designs can be met with the proposed modification of the existing site configuration.

Diversions

The diversion ditch, UD-3, located above the disturbed area is proposed to remain as a permanent structure. Contour map CM-10828-CP "Cottonwood Fan Portal Diversion

TECHNICAL ANALYSIS

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Ditch #UD-3" and, cross-section detail on CM-10827-CP provides the ditch design information as it existed on the 1989 survey map. The plan states that some modifications would be necessary to provide and maintain the drainage along the terrace. R645-301-761 requires that all permanent diversions meet the requirements of the approved reclamation plan. **It is recommended the applicant be sure the drainage configuration designs can be met by modifying the existing site configuration.**

The applicant has proposed to change the existing drainage at the south end of the permit area. This proposal will decrease the gradient at the junction of a natural drainage. Natural rock outcrops at this location should aid in decreasing the erosion which is occurring in the existing drainage location. An earlier recommendation by the division hydrologist suggested a grading plan that distributes the flow over the slopes and concentrates water beneath areas of upstream concentration points be proposed. However, during a site visit company representatives stated that flow over the face could jeopardize the revegetated embankment that lies below and is adjacent to the road. With that concern in mind the proposal to retain this ditch is reasonable.

The diversion DD-4, at the top of the reclaimed bank adjacent to the road, is constructed to drain to the sedimentation pond. The plan references the county official as stating that the lower reclaimed slope would continue to provide a buffer zone to absorb rock fall and, to minimize impacts to the road. However, where this request concerns the sediment control ditch (within the final revegetated area as shown on KS1709D) this logic does not hold. The drainage can be re-established over the slope and continue to provide a buffer. Contrary information exists in section 760. The plan indicates that the silt fences, gabions, and undisturbed diversion ditches will be removed and reclaimed.

There would be some logistic problems in coordinating the drainage discharged from DD-4 and the final reclamation of the site. The resulting configuration would not approximate the premining characteristics (R645-301-742.313). Final reclamation configuration and plans for the sedimentation ponds and the ditch must be presented. In order to meet AOC, the plan must include backfilling DD-4 to promote overland flow. The road, bypass culverts and ditch configuration should account for runoff from the final reclaimed site configuration.

The applicant has committed to provide a french rock drain at the seep locations the size and design is dependent on topographic constraints and seep size.

Stream Buffer Zones

The Cottonwood Fan Portal is within 100 feet of the Cottonwood Canyon Creek stream channel. The adjacent Trail Mountain Mine diverted the Cottonwood Canyon Creek into a culvert thus, diverting the stream. The reclamation of this site is expected to be

TECHNICAL ANALYSIS

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completed prior to reclamation at the Trail Mountain Mine. Based on this information, a specific buffer zone variance is not necessary.

Sediment Control Measures

The plan states that final grading and preparation of overburden will be conducted along the contour to minimize erosion. If grading along the contour is hazardous to equipment operators, grading will be conducted in a direction other than parallel to the contours.

Disturbed areas are presently proposed to drain to the sedimentation ponds. Additional measures such as; a silt fence along DD-4 and rock gabions are also used.

Siltation Structures

Other than the Alternate Sediment Control Measure in place in Area 3-7, the sedimentation ponds will be retained to treat runoff from the site during the reclamation phase. The plan provides information which shows how disturbed areas will be treated during initial reclamation but, measures used following sediment pond removal were not identified.

Sedimentation Ponds

Once the bonding period is complete and revegetation is satisfactory the sedimentation ponds will be backfilled and graded. This determination is made by the Division following a request from the permittee at Phase II bond release.

Other Treatment Facilities

No other treatment facilities are associated with the Cottonwood Fan Portal area.

Siltation Structure Exemptions

No exemption from using siltation structures were granted associated with reclamation of the cottonwood fan portal area.

Discharge Structures

No discharge structures are proposed for retention as permanent structures.

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Impoundments

No impoundments are proposed to be retained as permanent structures at the reclaimed cottonwood fan portal site.

Casing And Sealing Of Wells

No casing and sealing of wells are directly associated with the cottonwood mine portal reclamation.

Findings:

The permittee has not met all requirements of this section. The permittee must provide the following in accordance with:

R645-301-512, provide a map for the final site configuration including filling of sedimentation ponds, and provide the professional certification with a signature on all applicable maps.

R645-301-742.313, The plan must include backfilling ditch DD-4 (the sediment control ditch is depicted in figure KS1709D). This ditch will no longer be needed to achieve the purpose for which it was authorized. Backfilling and regrading to promote overland flow will approximate AOC for the regraded portion of the site.

R645-301-742.200, Provide a sediment control plan for controlling sediment following sediment pond removal.

BONDING AND INSURANCE REQUIREMENTS

Analysis:

Determination of bond amount.

In 1995, the permittee notified the Division that it planned to reclaim the Cottonwood Fan Portal area sometime in 1997. The Division then decided to review the reclamation plan, which it had approved in the 1980s, for technical adequacy and regulatory compliance. The Division found the reclamation plan to be technically and regulatorily deficient and

TECHNICAL ANALYSIS

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remanded it to the permittee for revision. The permittee then resubmitted the reclamation plan, for Division review, in July of 1997.

A cover letter from the permittee which accompanies the July, 1997 submittal explains that the reclamation cost estimate for the Cottonwood Fan Portal area has not been changed from what it is in the approved plan. This is because it would make no sense to repeatedly redo the entire reclamation cost estimate with each interim revision of the reclamation plan before the entire plan is approved by the Division. Thus, after the details of the reclamation plan have been worked out and the entire plan is acceptable to the Division, the permittee will submit a revised overall reclamation cost estimate and, if necessary, revise the reclamation bond in accordance with that estimate.

Findings:

The plan does not fulfill the requirements of this section.

The permittee must provide the following, prior to approval, in accordance with the requirements of:

R645-301-542.800, R645-301-820.100

After the details of the reclamation plan have been worked out and the entire plan is acceptable to the Division, the permittee will submit a revised overall reclamation cost estimate and, if necessary, revise the reclamation bond in accordance with that estimate.



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

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Governor
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801-538-5340
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801-538-7223 (TDD)

August 7, 1997

TO: File

THRU: Joe Helfrich, Permit Supervisor *JH*

FROM: Robert Davidson, Soils Reclamation Specialist *RAD*

RE: Cottonwood Fan Portal, PacifiCorp, Cottonwood Wilburg Mine, ACT\015\019-97C, Folder #2, Emery County, Utah

SUMMARY:

The Cottonwood Fan Portal area was initially disturbed in the early 1980s. It was the intention of the permittee to construct a fan portal and a facility pad. However, the fan portal project was never completed beyond the surface disturbance for constructing the pad area. The salvaged topsoil, subsoil, and fill material remained where they had been stockpiled and the cuts for the planned facilities remained. Nevertheless, no facilities were built and nothing further was done with the area.

PacifiCorp proposes to reclaim the Cottonwood Fan Portal in 1997. In response to their proposal, the MRP was reviewed by the Division and was found to be technical inadequate for reclamation of the Cottonwood Fan Portal. PacifiCorp has responded with an MRP amendment containing specific responses to the Division's TA. There are still problems associated the revised MRP. This TA reviews the soils' portion of the reclamation plan.

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.21, 817.200(c); R645-301-220, -301-411.

Analysis:

The MRP amendment contains the following information:

- Soil Survey - adequate information provided
- Soil Sampling - confusion between sample sets

Soil Survey - Adequate Information Provided

The original MRP (pages 2-154 thru 2-158) contains Order-III soil survey information for large tracts of land. In other words, no specific soil pit or on-site investigation was made for the fan-portal soils. Therefore, the Order-III soil survey is inadequate to determine the depth and quality of soil that was salvaged from the fan portal area.

To supply adequate soil survey information, PacifiCorp substituted an Order-I survey that was completed in 1993 for the Cottonwood tube-conveyor system. The Order-I soil survey provides an on-site investigation and soil map for the land that is north and adjacent of the proposed fan portal. The assumption for using this survey is that it adequately represents soils that are similar in depth and quality. According to the original Order-III survey, soils fall within map unit AbG for both the fan portal and tube conveyor areas. Therefore, soils within the fan portal area are most likely similar to the "Map Unit A, Lithic Ustorthents" as described in the Order-I survey.

Soil Sampling - Confusion Between Sample Sets

Confusion exists between soil sample data sets. These sample sets as referenced by the amendment include the 1997 samples, tube-conveyor samples on pages 14-16, Appendix-C Order-I soil survey samples, and the Biology Section referenced sample set. Primarily, how do they relate to each other and how do they pertain to the reclamation of the fan portal? In addition, there appears to be discrepancies with certain parameter results between sample sets (e.g., parameters that appear to have the largest discrepancies are pH, EC, and SAR). These discrepancies need to be addressed and how they relate to reclamation of the fan portal.

Please locate all sample sets and references on a map. Provide discussion concerning the map and each sample set succinctly within the amendment.

What are the Biology Section soil samples? Why, where, when, and how were these samples taken?

Findings:

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R645-301-223, R645-301-120 and R645-301-130, Please provide soil sampling information as discussed above.

OPERATION PLAN

TOPSOIL AND SUBSOIL

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

Analysis:

The amended MRP submittal needs to address and clarify the following:

- Soil Salvage - information is incomplete
- Stockpile Locations - conflicting information

Soil Salvage - Information Incomplete

The amendment states mentions the fact that topsoil and subsoil were salvaged from the Cottonwood fan-portal area. The mass-balance tables provided on the reclamation map provide soil-placement volumes during fan-portal reclamation. These tables do not provide information concerning salvaged-soil volumes for either the topsoil or subsoil. Please provide salvaged-soil volumes on the mass-balance tables.

In addition, the soil and fill materials that are stockpiled beneath the fan-portal area needs clarification. The amendment references this "soil" material as being "reclaimed." How does this material differ from the stockpiled topsoil and subsoils? What volume of this material

is stockpiled and will any of this material be used for reclaiming the fan-portal area?

Stockpile Locations - Conflicting Information

The Mt. Nebo soil survey report, Appendix III states that the Cottonwood Fan Portal topsoil and subsoil piles will be transported to the reclaimed Cottonwood Waste Rock site. However, Plate 5-5 show stockpiles labeled CFP. Did any CFP-stockpiled soil get transported to the Waste Rock site during construction of the Cottonwood Belt and Diesel-Roadway Portals? Did any soil from the Portal construction get stockpiled with the CFP soil? If so, how much and which pile?

Findings:

The permittee must provide the following, prior to approval, in accordance with the requirements of:

R645-301-231 and R645-301-120, Please provide soil salvage and stockpile information as discussed above.

RECLAMATION PLAN

TOPSOIL AND SUBSOIL

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

Analysis:

Conflicting information exists within the MRP amendment concerning soil redistribution. Please address the following to clarify soil redistribution:

- The amendment states different amounts of topsoil and subsoil for reclamation than those shown in the mass-balance tables as referenced on the reclamation map.
- In addition to the mass-balance tables, provide a table and discussion for all soil redistribution. The information should identify where topsoil and subsoil will be placed, what areas, how thick and what volumes.

- Any remaining soil left in the stockpiles needs to be identified and discussed. Identify interim reclamation of the remaining soil and stockpiles. How will the remaining soil be used?

Findings:

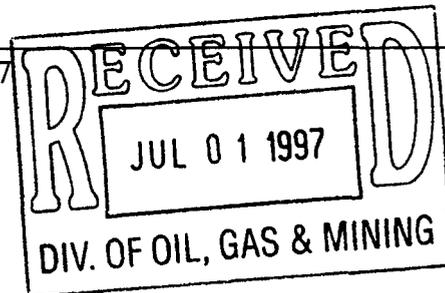
The permittee must provide the following, prior to approval, in accordance with the requirements of:

R645-301-241 and R645-301-120, Please provide soil redistribution information as discussed above.



PO Box 310
Huntington, Utah 84528

June 30, 1997



Utah Coal Regulatory Program
Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84180-1203

Attention: Daron Haddock

**RE: AMENDMENT TO PERMIT AND MAPS, PROPOSED COTTONWOOD FAN
PORTAL VOLUME 11, COTTONWOOD MINE, ACT/015/019, EMERY
COUNTY, UTAH.**

#2 97MT

PacifiCorp, by and through its wholly-owned subsidiary, Energy West Mining Company ("Energy West") as mine operator, herewith submit an amendment to the permit to create the Proposed Cottonwood Fan Portal Volume 11.

Copy Daron

GENERAL INTRODUCTION:

During the 1997 mid-term review for the Cottonwood/Wilberg Mine, the Division identified two areas of concern. These consisted of deficiencies in the reclamation plan for the Proposed Cottonwood Fan Portal and improper calculation in the bond cost estimate.

The solution to these areas of concern, as recommended by the Division, involved creating Volume 11, Proposed Cottonwood Fan Portal. Included in this new Volume 11 are pages from the original permit that make reference to the proposed Cottonwood Fan Portal Area, whole sections have been pulled from the permit that refer only to the proposed Cottonwood Fan Portal, and copies of Appendix III and XIII have also been included. Response to the Divisions deficiencies are also outlined in this volume.

The plan now being submitted was partially reviewed during a preliminary submittal meeting on June 25, 1997. Some items of concern were addressed by the Division at that time. Corrections and additions have been made since then to try and bring the plan closer to what the Division anticipates will meet approval.

Through discussion by Daron Haddock and Chuck Semborski concerning the possibility of further revisions or elaboration on any given item of the amendment that the Division will require, only one copy of the amendment will be submitted for this phase of the review. When the Divisions findings are returned "Energy West" will review the findings and address the areas of concern. After revisions, "Energy West" hopes to be able to meet approval and then send

Huntington Office:
(801) 687-9821
Fax (801) 687-2695

Deer Creek Mine:
(801) 381-2317
Fax (801) 381-2285

Cottonwood Mine:
(801) 748-2319
Fax (801) 748-2380

Purchasing Fax (801) 687-9092

seven full copies of the amendment to be addressed as Volume 11 for distribution and review by the other agencies.

Please advise our department if this is not acceptable.

The Map Plates as listed below have been deleted, revised, superceded, or added to the new volume. Following each plate is a description of what will take place upon approval.

1. Map 3 Cottonwood/Wilberg Mine CFP
Remove from permit and add to Volume 11
2. R&S 8029-L2 Proposed Ventilation Fan Installation
Delete from the permit because the fan was never built
3. Plate 2-19 Cottonwood/Wilberg Mine Land Use Map
A copy of this map will be placed in Volume 11 the original will stay in the permit
4. Plate 3-7 CFP Access Road Class II
Delete from the permit. (Not required as part of the permit because fan portal area was not developed).
5. Plate 3-8 CFP Access Road x-sections (4 of 4)
Delete from the permit and replace with Plate 5-3 Volume 11
6. Plate 3-10 North & South Sediment Pond Basins
This map has been revised and will be removed from the permit and added to Volume 11
7. Plate 3-11 Original Access Road & Portal Pad x-sections
Delete from the permit. (Area was never developed so map no longer needed).
8. Plate 3-12 CFP x-sections
Delete from the permit. (No longer required because area was not developed).
9. Plate 3-13 CFP Hydrological Map
This map has been revised and will be removed from the permit and added to Volume 11
10. Plate 3-14 Cottonwood/Wilberg CFP Reclamation
Delete from the permit and replace with Plate 5-5 Volume 11

11. Plate 3-16A Plan View of CFP Site
Delete from the permit and replace with Plate 5-1 Volume 11
12. Plate 3-27 Typical Sediment Control Alternatives
A copy of this drawing will be placed in Volume 11 and the original will remain in the permit
13. Plate 4-6 CFP Topography x-section
Delete from the permit and replace with Plate 5-1 Volume 11
14. Plate 4-7 CFP Reclamation x-sections (8 of 8)
Delete from the permit and replace with Plate 5-3 Volume 11
15. Plate 4-8 CFP Diversion Ditch Plan and Profile
This map has been revised and will be removed from the permit and added to Vol. 11
16. Plate 4-9 CFP Diversion Ditch x-sections
This map has been revised and will be removed from the permit and added to Vol. 11

The following are new maps that will be added to Volume 11:

1. Plate 5-1 CFP Reclamation Slope Surface Facilities Map
2. Plate 5-2 CFP Surface Facilities Map Proposed Soil Placement
3. Plate 5-3 CFP Reclamation Slope x-sections
4. Plate 5-4 CFP Sub-soil and Topsoil x-sections
5. Plate 5-5 CFP Surface Facilities Map Final Reclamation
6. Plate 5-6 CFP Existing Revegetated Areas Surface Facilities Map

The following permit pages of Volume 1, Introduction and Summary of Permit Application and Table of Contents will require revisions. A copy of these pages is attached for your review. The title has been changed to proposed CFP. These pages are as listed:

1. Page 2
2. Page 4
The top portion of this page was removed from the permit and is now included in the Introduction of Volume 11. This page only referenced the proposed Cottonwood Fan Portal so it is no longer required in the original MRP.

3. Page 12
4. Page 14
5. Page 15

The following permit pages in Volume 1, Chapter 1, legal and financial section will require revisions. A copy of these pages is attached for review. The title has been changed to proposed CFP. These pages are as listed:

1. Page 1-49
2. Page 1-54

The following permit pages in Volume 1, Chapter 2, environmental resources will be removed from the permit and added to the new Volume 11. A detailed description of the action that will take place upon approval follows each page.

1. Pages 2-129 thru 2-140 Removed from permit and added to Vol. 11 Biology Section pages 6 thru 19. These pages refer only to the proposed CFP Area and are not required in the main portion of the MRP.
2. Pages 2-141 thru 2-142 Removed from permit and added to Vol. 11 Biology Section pages 20 thru 21. These pages refer only to the proposed CFP Area and are not required in the main portion of the MRP.
3. Archeological Report A copy of the Archeological Report has been placed in Vol. 11 under the Land Use Section.

The following permit pages in Volume 2, Chapter 2, environmental resources will be revised for the permit or removed from the permit and added to the new Volume 11. A detailed description of the action that will take place upon approval follows each page.

1. Page 2-154 The bottom portion of this page that refers only to the proposed CFP was removed and added to Vol. 11 Biology Section page 1. The revised page is attached for review.
2. Pages 2-155 thru 2-158.2 Removed from the permit and added to Vol. 11 Soils Section pages 1 thru 6. These pages refer only to the proposed CFP Area and are not required in the main portion of the MRP.
3. Pages 2-160, 2-161, 2-165, 2-166, 2-168 These pages have been revised and a copy is attached for review. The title has been changed to proposed CFP.

4. CFP Impact Zone Survey This survey followed page 2-174 of the permit. The survey will be removed from the permit and added to Vol. 11 Biology Section pages 22 thru 27. The survey only makes reference to the proposed CFP Area.
5. Pages 2-178 thru 2-180 These pages have been revised and a copy is attached for review. The title has been changed to proposed CFP.
6. Pages 2-159 thru 2-174 A copy of these pages has been placed in Vol. 11 under the Biology Section. The same pages will remain in the permit.

The following permit pages from Volume 2, Chapter 3, operation plan will be revised for the permit or removed from the permit and added to the new Volume 11. A detailed description of the action that will take place upon approval follows each page.

1. Pages 3-20.1.1 thru 3-25 Removed from the permit and added to Vol. 11 Engineering Section pages 3 and 4. These pages refer only to the CFP Area and are not required in the main portion of the permit.
2. Page 3-32 This page has been revised and a copy is attached for review. The title has been changed to proposed CFP.
3. Pages 3-48 and 3-48.1 These pages have been revised and a copy is attached for review. The title has been changed to proposed CFP.
4. Page 3-51.2 Table 5.1 Table 5.1 has been revised and a copy is attached for review. The title has been changed to proposed CFP.
5. Page 3-52 This page has been revised and a copy is attached for review. The title has been changed to proposed CFP.
6. Page 3-68 This page has been revised and a copy is attached for review. The title has been changed to proposed CFP and the reference to the sedimentation ponds has been changed to sedimentation basins.

The following permit pages in Volume 2, Chapter 4, reclamation plan will be removed from the main portion of the permit and added to the new Volume 11. Detailed description of the action to take place upon approval follows each page.

1. Page 4-1 This page has been revised and a copy is attached for review. The title has been changed to proposed CFP.

2. Page 4-4.1 thru 4-4.3 Removed from the permit and added to Vol. 11 Soils Section pages 8 thru 11. These pages refer only to the CFP Area and are not required in the main portion of the permit. Page 4-4.1 has also been added to Vol. 11 under the Land Use Section page 4.
3. Page 4-4.4 This page has been revised and a copy is attached for review. The top portion has been removed and added to Vol. 11 Soils Section because it references the proposed Cottonwood Fan Portal.
4. Page 4-7 This page has been revised and a copy is attached for review. The title has been changed to proposed Cottonwood Fan Portal. Sediment ponds has been changed to sediment basins. The bottom portion that makes reference to the CFP only has been removed and added to Vol. 11 page 12 of the Soils Section and to page 7 of the Engineering Section.
5. Page 4-10.2 This page has been revised and a copy is attached for review. The title has been changed to proposed CFP.
6. Page 4-27 thru 4-29 Removed from the permit and added to Vol. 11 Biology Section pages 33 thru 38. These pages refer only to the CFP Area and are not needed in the main body of the permit.
7. Page 4-38.1 This page has been revised and a copy is attached for review. The title has been changed to proposed CFP and the post mining land use has been changed to wildlife habitat.
8. Page 4-40 This page has been revised and a copy is attached for review. Protection measures for the Old Johnson Mine have been added to this page. A copy of this page has also been included in Vol. 11 page 3 of the Land Use Section.
9. Reclamation Schedule The reclamation schedule follows page 4-32 in the permit. These pages have been revised and a copy is attached for review. The title has been changed to proposed CFP.
10. Reclamation Costs Page 7 of the Reclamation Costs has been deleted. This page makes reference to the Cottonwood Canyon Fan Portal Pad and is no longer needed in the permit since the fan was only proposed and not actually built.

11. Reclamation Breakdown Item 3-K of the reclamation breakdown has been revised and a copy is attached for review. The title has been changed to proposed CFP.
12. Reclamation Seeding Item #9, seeding and planting, has been revised and a copy is attached for review. The title has been changed to proposed CFP.
13. Bond Release Item #13, inventory for bond release, has been revised and a copy is attached for review. The title has been changed to proposed CFP.

Also included in Volume 11 is a copy of the Air Quality Approval Order. This copy is found in the Land Use Section under the Air Quality Regulation R645-301-420.

Notwithstanding the possibility that an oversight of text areas requiring changes was made, this should provide all updated information necessary for the amendment as required by law and regulations.

If there are any problems or concerns regarding this amendment please call Chuck Semborski at 687-4720 or Richard Northrup at 687-4822.

Thank you for your help and assistance in completing this amendment.

Sincerely,

A handwritten signature in cursive script, appearing to read "Richard Northrup".

Richard Northrup
Env. Engineer

APPLICATION FOR PERMIT PROCESSING

<input checked="" type="checkbox"/> Permit Change	<input type="checkbox"/> New Permit	<input type="checkbox"/> Renewal	<input type="checkbox"/> Transfer	<input type="checkbox"/> Exploration	<input type="checkbox"/> Bond Release	Permit Number: ACT/015/019
Title of Proposal: AMENDMENT: COTTONWOOD PROPOSED FAN PORTAL						Mine: COTTONWOOD/ WILBERG
						Permittee: PACIFICORP

Description, include reason for application and timing required to implement: **AMEND PERMIT REMOVING PAGES, MAPS, TABLES OR REVISING, REPLACING ETC. FROM PERMIT, INCORPORATING ALL INFORMATION FROM MRP SECTIONS, RESPONSE TO DEFICIENCIES AND IN A SEPARATE VOLUME TO COVER THE COTTONWOOD PROPOSED PORTAL SITE.**

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.

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

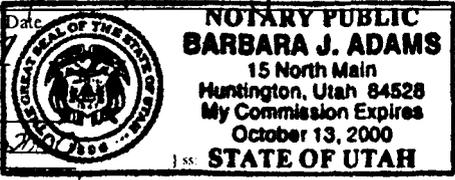
Attach 7 complete copies of the application.

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. (R645-301-123)

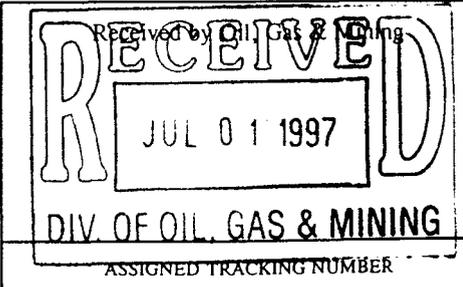
Signed: Richard Northrup Env Eng. Date: 6-30-97

Subscribed and sworn to before me this 30 day of June, 1997

Barbara J. Adams
Notary Public



My Commission Expires: 10-13
Attest: [Signature]
STATE OF UTAH
COUNTY OF [Signature]



ASSIGNED TRACKING NUMBER

Application for Permit Processing Detailed Schedule of Changes to the MRP

Title of Application: <i>Amendment to the MRP</i>	Permit Number: ACT/015/019
	Mine: COTTONWOOD/WILBERG
	Permittee: PACIFICORP

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
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input checked="" type="checkbox"/> REMOVE	<i>Pg 2-100-2-100-1 Vol. 2</i>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input checked="" type="checkbox"/> REMOVE	<i>Pg 2-100-2-100-1</i>
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Vol. 4-7 Vol. 2</i>
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Pg 2-104 Vol. 2</i>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input checked="" type="checkbox"/> REMOVE	<i>Pg 7 of ...</i>
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Reclamation ...</i>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input checked="" type="checkbox"/> REMOVE	<i>Vol. 2-20-2-20-1</i>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input checked="" type="checkbox"/> REMOVE	<i>Pg 2-14-2-14-1</i>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input checked="" type="checkbox"/> REMOVE	<i>Compass ...</i>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Volume 2-5</i>
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Pg 2-100-2-100-2-100-1 Vol. 2</i>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input checked="" type="checkbox"/> REMOVE	<i>Pg 2-27 to 2-28 Vol. 2</i>
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Pg 2-100-2-100-1</i>
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Pg 4-30.1</i>
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Pg 4-40</i>
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Pg 4-10.2</i>
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input checked="" type="checkbox"/> REMOVE	<i>Pg 3-20.1.1 to 3-20 Vol. 2</i>
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Pg 1.1</i>
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Pg 14, 15 Vol. 1, T.O.C.</i>
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Pg 2 Vol. 1</i>
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Pg 4 Vol. 1</i>
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Pg 149 Vol. 1</i>
<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Pg 1-5-1 Vol. 1</i>

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

Application for Permit Processing Detailed Schedule of Changes to the MRP

Title of Application: <i>ACT/015/019</i>	Permit Number: ACT/015/019
	Mine: COTTONWOOD/WILBERG
	Permittee: PACIFICORP

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
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Page 1-103 Vol. 1, 1/11/92 (Was page 2-133 2-134)</i>
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Page 1-103 Vol. 1, 1/11/92 (Was page 2-133)</i>
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Page 1-103 Vol. 1, 1/11/92 (Was page 4-7)</i>
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Page 1-103 Vol. 1, 1/11/92 (Was page 2-154)</i>
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Page 1-103 Vol. 1, 1/11/92 (Was page 2-154 2-155)</i>
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Page 20-103 Vol. 1, 1/11/92 (Was pages 2-14 2-142 Vol. 1)</i>
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Page 20-103 Vol. 1, 1/11/92 (Was page 2-17)</i>
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	<i>Page 20-103 Vol. 1, 1/11/92 (Was page 2-17)</i>
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Any other specific or special instructions required for insertion of this proposal into the Mining and Reclamation Plan?

