

where rills and gullies develop shall be repaired and revegetated.

In addition, all dams and embankments shall be routinely maintained during the mining operation. Any vegetative growth will be cut where necessary to facilitate inspection and repairs. Ditches and spillways shall be cleaned at least annually. Any combustible materials present on the surface shall be removed and all other appropriate maintenance procedures followed.

Sediment material from the sedimentation ponds will be placed in the sediment pond waste area (Plate 2-4) and is discussed in Appendix 3-K.

Quarterly Inspections. sediment ponds and subm-

1 put in plan.

made of all

Annual Inspections. Annual registered professional certified report will be report. The report will 301-514.312. Copies of t

a qualified ponds and a h the annual ted in R614- ppendix 7-I.

where ruts and gullies develop shall be repaired and revegetated.

In addition, all dams and embankments shall be routinely maintained during the mining operation. Any vegetative growth will be cut where necessary to facilitate inspection and repairs. Ditches and spillways shall be cleaned at least annually. Any combustible materials present on the surface shall be removed and all other appropriate maintenance procedures followed.

Sediment material from the sedimentation ponds will be placed in the sediment pond waste area (Plate 2-4) and is discussed in Appendix 3-K.

Quarterly Inspections. Quarterly inspections will be made of all sediment ponds and submitted to DOGM within 90 days.

Annual Inspections. Annual inspections will be made by a qualified registered professional engineer of all sediment ponds and a certified report will be submitted to the Division with the annual report. The report will include discussion of items noted in R614-301-514.312. Copies of the reports will be placed in Appendix 7-I.

Table 7.2-7 Sediment Ponds, Final Design Criteria

Design Criteria Pond "A"* ✓

Drainage Area	:	14.35 acres**
SCS Curve #82		
3-yr Sediment Storage	:	41,444 ft ³
10-yr 24-hr Runoff Storage	:	42,714 ft ³
Total Storage Volume	:	84,158 ft ³
Use Existing Spillway	:	10 ft wide Broad Crested Weir
Rainfall Data Base	:	Hiawatha Data by E. Arlo Richardson

* Co-Op agreed to use these numbers from John Whitehead, hydrologist for DOGM, during a discussion, 27 February 1984.

** See supplement on next page, p 7-62A.

Design Criteria Pond "B"*

Drainage Area	:	1.82 acres**
SCS Curve #82		
3-yr Sediment Storage	:	2,156 ft ³
10-yr 24-hr Runoff Storage	:	8,182 ft ³
Total Storage Volume	:	10,338 ft ³
Use Existing Spillway	:	4 ft Wide Broad Crested Weir
Rainfall Data Base	:	Hiawatha Data by E. Arlo Richardson

* Co-Op agreed to use these numbers presented in a letter from DOGM, in a letter to Wendell Owen, 16 June 1983.

** See supplement on next page, p 7-62A.

Supplement to Table 7.2-7
Additional Notes on Sediment Ponds and Drainage Areas

Drainage Areas. With the removal of culvert C-9U and the conversion of ditch D-10U to the disturbed ditch D-7D, an additional 5 acres of undisturbed drainage will go into sed pond "A". This area is designated AU-2a on Plate 7-5. All other drainage areas flowing to the pond are also shown on Plate 7-5, and each of these areas were re-planimetered to determine actual runoff to the pond. The results of the area calculations are summarized below:

<u>Area</u>	<u>Acreage</u>	<u>Runoff CN</u>	<u>Runoff Volume</u>
AU-2a	5.000	73	0.121 ac ft
AU-1	3.614	82	0.247 ac ft
AU-2	4.628	82	0.316 ac ft
AU-3	<u>5.936</u>	82	<u>0.406 ac ft</u>
Total (Pond "A")	14.178	?	1.090 ac ft

$$3 \text{ yr Sediment Volume} = 14.178 \times 0.0066 \text{ ac ft/ac} = 0.940 \text{ ac ft}$$

$$\text{Total required volume for Pond "A"} = \underline{2.030 \text{ ac ft}}$$

Area "B" was also re-planimetered from Plate 7-5. Following are the results for this area and Pond "B":

<u>Area</u>	<u>Acreage</u>	<u>Runoff CN</u>	<u>Runoff Volume</u>
B	1.895	82	0.130 ac ft

$$3 \text{ yr Sediment Volume} = 14.178 \times 0.0066 \text{ ac ft/ac} = 0.940 \text{ ac ft}$$

$$\text{Total required volume for Pond "A"} = \underline{2.030 \text{ ac ft}}$$

Based on the above numbers, the total disturbed area for Bear Canyon Mine site is 16.073 acres.

Sediment Pond "A". This pond was cleaned and resurveyed on 12 Oct 1990. The existing pond volume was found to be 2.04 acre ft at design overflow, as shown on Plate 7-2A. This indicates that the pond is presently large enough to absorb the additional runoff from the removal of culvert C-9U, as proposed.

Sediment Pond "A"
Stage - Volume Calculations

<u>Elev</u>	<u>Area ft²</u>	<u>Depth ft</u>	<u>Volume ac ft</u>	<u>Remarks</u>
90	3,740			bottom
91	5,960	1	0.111	
92	7,600	1	0.156	
94	9,480	2	0.392	
94.9	10,440	0.9	0.206	
96	11,480	1.1	0.277	decant
97.9	13,440	1.9	0.543	
99	14,280	1.1	0.350	Max Overflow depth
TOTAL			<u>2.035</u> ac ft	

Note: All information taken from Plate 7-2A

Additional Protection 1990

As additional, interim protection, a second silt fence will be installed 15 to 25 ft above the first at the inlet to culvert C-8U. This will provide additional protection from coal fines until the culvert is removed in 1991, and the drainage redirected to the sediment pond.

Culvert C-9U Removal 1990

In the fall of 1990 (late Oct - early Nov) culvert C-9U will be removed, and drainage from ditch D-10U will be re-directed into sediment pond "A" via existing ditch D-5D. Ditch D-10U will be cleaned and enlarged as necessary and extended north to intercept ditch D-4D. Ditch D-10U will be re-designated ditch D-7D.

An additional 5 acres of undisturbed drainage will also be intercepted by ditch D-7D, which will flow to pond "A". The drainage is shown on Plate 7-5.

The pond sizing justification is shown in "Additional Notes on Sediment Ponds and Drainage Areas", supplement to Table 7.2-7. Changes in ditches and culverts are shown on Tables 7.2-8 and 7.2-9 respectively. All drainage changes have been updated on Plate 7-1.

Table 7.2-8 Summary of Ditch Sizes

All ditches are triangular "V ditch" with 1:1 side slopes.

<u>Ditch</u>	<u>Flow (cfs)</u>	<u>Velocity (fps)</u>	<u>Rip-Rap Size**</u>	<u>Slope (pct)</u>	<u>Depth of Ditch</u>	<u>Depth of Water</u>
D-1R	10.2	6.8	6 in.	6.0	2 ft 0 in.	1 ft 6 in.
D-2R	12.1	6.8	6 in.	6.0	2 ft 0 in.	1 ft 6 in.
D-3R	10.4	6.8	6 in.	6.0	2 ft 0 in.	1 ft 6 in.
D-1U	1.5	3.5	N/R	4.0	1 ft 3 in.	0 ft 9 in.
D-2U	1.5	3.9	N/R	5.0	1 ft 3 in.	0 ft 9 in.
D-3U	6.1	5.5	4 in.	5.0	1 ft 9 in.	1 ft 3 in.
D-4U	11.8	6.6	6 in.	5.0	2 ft 0 in.	1 ft 6 in.
D-5U	0.9	3.5	N/R	7.0	1 ft 0 in.	0 ft 6 in.
D-6U	0.9	3.5	N/R	7.0	1 ft 0 in.	0 ft 6 in.
D-7U	10.3	6.6	6 in.	5.0	2 ft 0 in.	1 ft 6 in.
D-8U	2.3	4.4	N/R	6.25	- down road-	
D-9U	1.8	5.0	4 in.	8.3	1 ft 3 in.	0 ft 9 in.
D-11U	7.6	7.9	9 in.	14.0	1 ft 6 in.	1 ft 0 in.
D-12U	4.5	4.7	N/R	5.0	1 ft 6 in.	1 ft 3 in.
D-1D	0.8	4.0	N/R	9.0	1 ft 0 in.	0 ft 6 in.
D-2D	1.5	5.5	4 in.	10.0	1 ft 3 in.	0 ft 9 in.
D-3D	1.0	5.2	4 in.	15.0	1 ft 0 in.	0 ft 6 in.
D-4D	0.5	3.2	N/R	6.25	1 ft 6 in.	0 ft 5 in.
D-5D	7.2	6.2	6 in.	6.4	1 ft 9 in.	0 ft 9 in.
D-6D	1.2	4.4	N/R	6.25	1 ft 3 in.	0 ft 9 in.
D-7D	^{6.43} 5.8	5.7	6 in.	18.0	1 ft 6 in.	1 ft 1 in.

* 6 in. freeboard added to required flow depth.

** See Plate 7.1 for location of rip-rap.

N/R - not required

Table 7.2-9 Summary of Culvert Sizes

<u>Culvert</u>	<u>Flow (cfs)</u>	<u>Velocity (fps)</u>	<u>Rip-Rap Size</u>	<u>Slope (pct)</u>	<u>Diameter</u>	<u>Required Headwater**</u>
C-1R	10.2	9.5	12 in.	8.0	1 ft 6 in.	2 ft 3 in.
C-2R	Not applicable outside the permit area					
C-3R	Not applicable outside the permit area					
C-1U	<u>8.8</u>	<u>12.3</u>	24 in.+	15.0	2 ft 6 in.	1 ft 6 in.
C-2U	<u>1.5</u>	<u>8.4</u>	9 in.	15.0	1 ft 3 in.	0 ft 9 in.
C-3U	7.9++	5.7	6 in.	5.0	1 ft 0 in.	3 ft 0 in.*
C-4U	6.1++	5.1	6 in.	5.1	0 ft 10 in.	3 ft 0 in.*
C-5U	6.1++	5.0	N/R	4.8	0 ft 10 in.	3 ft 0 in.*
C-6U	0.9	4.4	N/R	3.7	0 ft 10 in.	1 ft 0 in.
C-7U	<u>10.3</u>	9.7	12 in.	8.3	1 ft 0 in.	2 ft 3 in.
C-8U	8.8	13.0	24 in.+	15.0	1 ft 6 in.	2 ft 0 in.
C-10U	0.8	5.7	6 in.	5.0	1 ft 0 in.	0 ft 6 in.
C-1D	1.5	10.9	18 in.	20.0	1 ft 3 in.	0 ft 9 in.
C-2D	0.5	9.6	12 in.	12.0	1 ft 6 in.	1 ft 3 in.
C-3D	1.2	5.2	6 in.	4.2	1 ft 6 in.	0 ft 9 in.
C-4D	0.5	9.6	12 in.	8.0	1 ft 6 in.	0 ft 3 in.
C-5D	0.2	3.5	N/R	6.5	1 ft 0 in.	0 ft 3 in.
60 in. CMP	231.5	13.8	24 in.	3.4	5 ft 0 in.	8 ft 6 in.

* When capacity of culvert is exceeded flow continues down ditch to next culvert.

** From invert elevation.

*** All culverts and ditches meet and or exceed min requirements.

+ Replaced with 15 in. flexible culvert.

++ A two ft high check dam of rip-rap is used to develop the headwater necessary for maximum flow through the culvert, excess flow continues down the ditch.

N/R - not required

The channel is included in drainage area AD-1 (Plate 7-5). The maximum flow calculated for this channel is shown on Table 7.2-8 as 1.5 cfs (Ditch D-2D). Based on this flow, the new culvert designated C-1D, is sized matching the criteria for existing culvert C-1D, shown on Table 7.2-9. Calculations for this ditch are shown in Appendix 7-F under Run-off Ditch Sizing. The headwater depth above the top of the proposed culvert inlet is 1 ft more than adequate to carry the expected flow.

The out-slope of the pad is protected by 6 in. M.D. rock along the area where drainage will occur. The only drainage that will reach the toe of the pad is that from the upper pad to the lower; the majority of the drainage above will be conveyed through the culvert. The 6 in. rock is more than adequate, since the approved plan calls for natural 6 in. rip-rap in the post-mining channel that will carry not only the disturbed drainage AD-1, but the undisturbed drainage from AU-3 as well.

The ditch in this area has been measured, and typical section is shown on Plate 7-8 as cross-section D-D. The ditch profile is also shown on this plate as Profile "F". Plate 7-8a is a typical section of the proposed channel restoration in the area of the portal pad and culvert, after their removal and upon final reclamation.

DRAINAGE CONTROL SYSTEM BEAR CANYON NO. 1 MINE

LOWER SEAM PORTAL AREA

- a. Upper Pad. Drainage from the disturbed area on the upper pad from the sub-station to culvert C-1D, will continue to flow into culvert C-1D, as approved; the outlet location of the flexible culvert was moved approx 20 ft to the west of the original location to direct runoff onto the rock ledge above the Lower Seam (Hiawatha) portals; water then flows over the rock ledge to the portal pad below;
- b. Portal Pad. The northeast corner of the bin is bermed a min of 30 in. high over to the highwall. Runoff water from the upper pad flows southward around the bin and into a collection box at the edge of the portal pad area; the pad is sloped to flow to the box;
- c. Flexible Culvert. The collection box at the portal pad discharges into a 15 in. flexible culvert, the culvert drops onto the next lower pad areas (Conveyor Support Pads);
- d. Conveyor Support Pads. This pad area is divided into two sections and is sloped to drain to the flexible culvert; the flexible culvert is opened (or replaced with 1/2 round culvert) for a distance of at least 8 ft to allow surface water to enter the culvert at both sections; the entrance to

the culvert is protected by a trash rack and grouted as shown on the attached typical drawing; water then flows down the flexible culvert to the Coal Processing Pad area.

- e. Coal Processing Pad. This pad is also sloped to drain to the culvert; another 8 ft opening was left in the culvert for the surface runoff; water is then conveyed down to the lower (Lump Coal) pad area;
- f. Lump Coal Pad. The flexible culvert parallels the conveyor down to the lump coal bin, pass beneath the bin supports, and empties into a catch basin/energy dissipater just south of the bin; runoff then flows south into ditch D-7D and passes into Sediment Pond "A."

Drainage is shown on Plate 7-1. Detailed drawings of the various drainage controls are shown in the attached typical details. Sizing calculations are summarized on the following sheet: "Lower Seam Portal Area - Drainage Sizing Calculations."

GENERAL

Upon inspection of the Mine permit area it was found that the areas described below exist in the undisturbed zones and that surface runoff going through these areas does not pass through the sediment pond treatment facilities. In order to provide adequate treatment for these areas, straw bale dikes and/or silt fences will be installed as indicated on Plate 7-1. The sediment control structures will be positioned so that surface runoff passes through them before entering Bear Creak. Treatment facilities will be maintained for each area until approved and determined that adequate revegetation cancels the need for treatment. These areas are designated as "Best Technology Currently Available" or BTCA Areas. Drainage from these areas will be monitored as possible to show compliance with the state and federal limitations.

OUTSLOPE BANK OF UPPER STORAGE PAD.

During construction of the Upper Storage Pad (Plate 7-1) some fill was apparently overcast down the face of the slope below. The area covers approximately 800 sq ft. A silt fence will be installed and maintained at the inlet to culvert C-8U. In 1991, culvert C-8U will be eliminated, and the drainage will go to Sediment pond "A". The runoff volume for this area is calculated to be 0.0013 acre ft.

AREA NEAR PORTAL NO.1

This area lies between the upper lamphouse/mine portal bermed pad and the portal access road, extending from the road junction on the south to just north of the upper office trailer at the beginning of the Cattle Co. Road. The area is approx. 0.28 acres. A silt fence is installed at the north end of the area where runoff flows down hill from the Cattle Co. Road area. Runoff from the area passes through a silt fence near the inlet to culvert C-6U. Runoff volume from this area is calculated to be 0.019 acre ft.

BALL PARK TOPSOIL PILE

The ball park covers 1.2 acres. Straw bale dikes and/or silt fences will be installed on the south east side, in line with the natural flow to treat runoff before it enters Bear creek. Runoff volume from this area is calculated to be 0.082 acre ft.

TOPSOIL STOCKPILE

The main topsoil storage pile covers approx 0.1 acres. The area is encircled by an 18 in. berm and is protected by established vegetation. Runoff volume from this area is calculated to be 0.0068 acre ft.

Note: Runoff volumes are based on the 10 yr 24 hr event of 2.25 in. and runoff CN of 82.

Table 7.2-7 Sediment Ponds, Final Design Criteria

Design Criteria Pond "A"*

Drainage Area	:	14.35 acres**
SCS Curve #82		
3-yr Sediment Storage	:	41,444 ft ³
10-yr 24-hr Runoff Storage	:	42,714 ft ³
Total Storage Volume	:	84,158 ft ³
Use Existing Spillway	:	10 ft wide Broad Crested Weir
Rainfall Data Base	:	Hiawatha Data by E. Arlo Richardson

* Co-Op agreed to use these numbers from John Whitehead, hydrologist for DOGM, during a discussion, 27 February 1984.

** See supplement on next page, p 7-62A.

Design Criteria Pond "B"*

Drainage Area	:	1.82 acres**
SCS Curve #82		
3-yr Sediment Storage	:	2,156 ft ³
10-yr 24-hr Runoff Storage	:	8,182 ft ³
Total Storage Volume	:	10,338 ft ³
Use Existing Spillway	:	4 ft Wide Broad Crested Weir
Rainfall Data Base	:	Hiawatha Data by E. Arlo Richardson

* Co-Op agreed to use these numbers presented in a letter from DOGM, in a letter to Wendell Owen, 16 June 1983.

** See supplement on next page, p 7-62A.

Supplement to Table 7.2-7
Additional Notes on Sediment Ponds and Drainage Areas

Drainage Areas. With the removal of culvert C-9U and the conversion of ditch D-10U to the disturbed ditch D-7D, an additional 5 acres of undisturbed drainage will go into sed pond "A". This area is designated AU-2a on Plate 7-5. All other drainage areas flowing to the pond are also shown on Plate 7-5, and each of these areas were re-planimetered to determine actual runoff to the pond. The results of the area calculations are summarized below:

<u>Area</u>	<u>Acreage</u>	<u>Runoff CN</u>	<u>Runoff Volume</u>
AU-2a	5.000	73	0.121 ac ft
AU-1	3.614	82	0.247 ac ft
AU-2	4.628	82	0.316 ac ft
AU-3	<u>5.936</u>	82	<u>0.406 ac ft</u>
Total (Pond "A")	14.178		1.090 ac ft

3 yr Sediment Volume = 14.178 x 0.0066 ac ft/ac = 0.940 ac ft

Total required volume for Pond "A" = 2.030 ac ft

Area "B" was also re-planimetered from Plate 7-5. Following are the results for this area and Pond "B":

<u>Area</u>	<u>Acreage</u>	<u>Runoff CN</u>	<u>Runoff Volume</u>
B	1.895	82	0.130 ac ft

3 yr Sediment Volume = 14.178 x 0.0066 ac ft/ac = 0.940 ac ft

Total required volume for Pond "A" = 2.030 ac ft

Based on the above numbers, the total disturbed area for Bear Canyon Mine site is 16.073 acres.

Sediment Pond "A". This pond was cleaned and resurveyed on 12 Oct 1990. The existing pond volume was found to be 2.04 acre ft at design overflow, as shown on Plate 7-2A. This indicates that the pond is presently large enough to absorb the additional runoff from the removal of culvert C-9U, as proposed.

Sediment Pond "A"
Stage - Volume Calculations

<u>Elev</u>	<u>Area ft²</u>	<u>Depth ft</u>	<u>Volume ac ft</u>	<u>Remarks</u>
90	3,740			bottom
91	5,960	1	0.111	
92	7,600	1	0.156	
94	9,480	2	0.392	
94.9	10,440	0.9	0.206	decant
96	11,480	1.1	0.277	
97.9	13,440	1.9	0.543	
99	14,280	1.1	0.350	Max Overflow depth
TOTAL			<u>2.035</u> ac ft	

Note: All information taken from Plate 7-2A

Additional Protection 1990

As additional, interim protection, a second silt fence will be installed 15 to 25 ft above the first at the inlet to culvert C-8U. This will provide additional protection from coal fines until the culvert is removed in 1991, and the drainage redirected to the sediment pond.

Culvert C-9U Removal 1990

In the fall of 1990 (late Oct - early Nov) culvert C-9U will be removed, and drainage from ditch D-10U will be re-directed into sediment pond "A" via existing ditch D-5D. Ditch D-10U will be cleaned and enlarged as necessary and extended north to intercept ditch D-4D. Ditch D-10U will be re-designated ditch D-7D.

An additional 5 acres of undisturbed drainage will also be intercepted by ditch D-7D, which will flow to pond "A". The drainage is shown on Plate 7-5.

The pond sizing justification is shown in "Additional Notes on Sediment Ponds and Drainage Areas", supplement to Table 7.2-7. Changes in ditches and culverts are shown on Tables 7.2-8 and 7.2-9 respectively. All drainage changes have been updated on Plate 7-1.

Table 7.2-8 Summary of Ditch Sizes

All ditches are triangular "V ditch" with 1:1 side slopes.

<u>Ditch</u>	<u>Flow (cfs)</u>	<u>Velocity (fps)</u>	<u>Rip-Rap Size**</u>	<u>Slope (pct)</u>	<u>Depth of Ditch</u>	<u>Depth of Water</u>
D-1R	10.2	6.8	6 in.	6.0	2 ft 0 in.	1 ft 6 in.
D-2R	12.1	6.8	6 in.	6.0	2 ft 0 in.	1 ft 6 in.
D-3R	10.4	6.8	6 in.	6.0	2 ft 0 in.	1 ft 6 in.
D-1U	1.5	3.5	N/R	4.0	1 ft 3 in.	0 ft 9 in.
D-2U	1.5	3.9	N/R	5.0	1 ft 3 in.	0 ft 9 in.
D-3U	6.1	5.5	4 in.	5.0	1 ft 9 in.	1 ft 3 in.
D-4U	11.8	6.6	6 in.	5.0	2 ft 0 in.	1 ft 6 in.
D-5U	0.9	3.5	N/R	7.0	1 ft 0 in.	0 ft 6 in.
D-6U	0.9	3.5	N/R	7.0	1 ft 0 in.	0 ft 6 in.
D-7U	10.3	6.6	6 in.	5.0	2 ft 0 in.	1 ft 6 in.
D-8U	2.3	4.4	N/R	6.25	- down road-	
D-9U	1.8	5.0	4 in.	8.3	1 ft 3 in.	0 ft 9 in.
D-11U	7.6	7.9	9 in.	14.0	1 ft 6 in.	1 ft 0 in.
D-12U	4.5	4.7	N/R	5.0	1 ft 6 in.	1 ft 3 in.
D-1D	0.8	4.0	N/R	9.0	1 ft 0 in.	0 ft 6 in.
D-2D	1.5	5.5	4 in.	10.0	1 ft 3 in.	0 ft 9 in.
D-3D	1.0	5.2	4 in.	15.0	1 ft 0 in.	0 ft 6 in.
D-4D	0.5	3.2	N/R	6.25	1 ft 6 in.	0 ft 5 in.
D-5D	7.2	6.2	6 in.	6.4	1 ft 9 in.	0 ft 9 in.
D-6D	1.2	4.4	N/R	6.25	1 ft 3 in.	0 ft 9 in.
D-7D	5.8	5.7	6 in.	18.0	1 ft 6 in.	1 ft 1 in.

* 6 in. freeboard added to required flow depth.

** See Plate 7.1 for location of rip-rap.

N/R - not required

Table 7.2-9 Summary of Culvert Sizes

<u>Culvert</u>	<u>Flow (cfs)</u>	<u>Velocity (fps)</u>	<u>Rip-Rap Size</u>	<u>Slope (pct)</u>	<u>Diameter</u>	<u>Required Headwater**</u>
C-1R	10.2	9.5	12 in.	8.0	1 ft 6 in.	2 ft 3 in.
C-2R	Not applicable outside the permit area					
C-3R	Not applicable outside the permit area					
C-1U	8.8	12.3	24 in.+	15.0	2 ft 6 in.	1 ft 6 in.
C-2U	1.5	8.4	9 in.	15.0	1 ft 3 in.	0 ft 9 in.
C-3U	7.9++	5.7	6 in.	5.0	1 ft 0 in.	3 ft 0 in.*
C-4U	6.1++	5.1	6 in.	5.1	0 ft 10 in.	3 ft 0 in.*
C-5U	6.1++	5.0	N/R	4.8	0 ft 10 in.	3 ft 0 in.*
C-6U	0.9	4.4	N/R	3.7	0 ft 10 in.	1 ft 0 in.
C-7U	10.3	9.7	12 in.	8.3	1 ft 0 in.	2 ft 3 in.
C-8U	8.8	13.0	24 in.+	15.0	1 ft 6 in.	2 ft 0 in.
C-10U	0.8	5.7	6 in.	5.0	1 ft 0 in.	0 ft 6 in.
C-1D	1.5	10.9	18 in.	20.0	1 ft 3 in.	0 ft 9 in.
C-2D	0.5	9.6	12 in.	12.0	1 ft 6 in.	1 ft 3 in.
C-3D	1.2	5.2	6 in.	4.2	1 ft 6 in.	0 ft 9 in.
C-4D	0.5	9.6	12 in.	8.0	1 ft 6 in.	0 ft 3 in.
C-5D	0.2	3.5	N/R	6.5	1 ft 0 in.	0 ft 3 in.
60 in. CMP	231.5	13.8	24 in.	3.4	5 ft 0 in.	8 ft 6 in.

* When capacity of culvert is exceeded flow continues down ditch to next culvert.

** From invert elevation.

*** All culverts and ditches meet and or exceed min requirements.

+ Replaced with 15 in. flexible culvert.

++ A two ft high check dam of rip-rap is used to develop the headwater necessary for maximum flow through the culvert, excess flow continues down the ditch.

N/R - not required

The channel is included in drainage area AD-1 (Plate 7-5). The maximum flow calculated for this channel is shown on Table 7.2-8 as 1.5 cfs (Ditch D-2D). Based on this flow, the new culvert designated C-1D, is sized matching the criteria for existing culvert C-1D, shown on Table 7.2-9. Calculations for this ditch are shown in Appendix 7-F under Run-off Ditch Sizing. The headwater depth above the top of the proposed culvert inlet is 1 ft more than adequate to carry the expected flow.

The out-slope of the pad is protected by 6 in. M.D. rock along the area where drainage will occur. The only drainage that will reach the toe of the pad is that from the upper pad to the lower; the majority of the drainage above will be conveyed through the culvert. The 6 in. rock is more than adequate, since the approved plan calls for natural 6 in. rip-rap in the post-mining channel that will carry not only the disturbed drainage AD-1, but the undisturbed drainage from AU-3 as well.

The ditch in this area has been measured, and typical section is shown on Plate 7-8 as cross-section D-D. The ditch profile is also shown on this plate as Profile "F". Plate 7-8a is a typical section of the proposed channel restoration in the area of the portal pad and culvert, after their removal and upon final reclamation.

DRAINAGE CONTROL SYSTEM BEAR CANYON NO. 1 MINE

LOWER SEAM PORTAL AREA

- a. Upper Pad. Drainage from the disturbed area on the upper pad from the sub-station to culvert C-1D, will continue to flow into culvert C-1D, as approved; the outlet location of the flexible culvert was moved approx 20 ft to the west of the original location to direct runoff onto the rock ledge above the Lower Seam (Hiawatha) portals; water then flows over the rock ledge to the portal pad below;
- b. Portal Pad. The northeast corner of the bin is bermed a min of 30 in. high over to the highwall. Runoff water from the upper pad flows southward around the bin and into a collection box at the edge of the portal pad area; the pad is sloped to flow to the box;
- c. Flexible Culvert. The collection box at the portal pad discharges into a 15 in. flexible culvert, the culvert drops onto the next lower pad areas (Conveyor Support Pads);
- d. Conveyor Support Pads. This pad area is divided into two sections and is sloped to drain to the flexible culvert; the flexible culvert is opened (or replaced with 1/2 round culvert) for a distance of at least 8 ft to allow surface water to enter the culvert at both sections; the entrance to

the culvert is protected by a trash rack and grouted as shown on the attached typical drawing; water then flows down the flexible culvert to the Coal Processing Pad area.

- e. Coal Processing Pad. This pad is also sloped to drain to the culvert; another 8 ft opening was left in the culvert for the surface runoff; water is then conveyed down to the lower (Lump Coal) pad area;

- f. Lump Coal Pad. The flexible culvert parallels the conveyor down to the lump coal bin, pass beneath the bin supports, and empties into a catch basin/energy dissipater just south of the bin; runoff then flows south into ditch D-7D and passes into Sediment Pond "A."

Drainage is shown on Plate 7-1. Detailed drawings of the various drainage controls are shown in the attached typical details. Sizing calculations are summarized on the following sheet: "Lower Seam Portal Area - Drainage Sizing Calculations."

GENERAL

Upon inspection of the Mine permit area it was found that the areas described below exist in the undisturbed zones and that surface runoff going through these areas does not pass through the sediment pond treatment facilities. In order to provide adequate treatment for these areas, straw bale dikes and/or silt fences will be installed as indicated on Plate 7-1. The sediment control structures will be positioned so that surface runoff passes through them before entering Bear Creak. Treatment facilities will be maintained for each area until approved and determined that adequate revegetation cancels the need for treatment. These areas are designated as "Best Technology Currently Available" or BTCA Areas. Drainage from these areas will be monitored as possible to show compliance with the state and federal limitations.

OUTSLOPE BANK OF UPPER STORAGE PAD.

During construction of the Upper Storage Pad (Plate 7-1) some fill was apparently overcast down the face of the slope below. The area covers approximately 800 sq ft. A silt fence will be installed and maintained at the inlet to culvert C-8U. In 1991, culvert C-8U will be eliminated, and the drainage will go to Sediment pond "A". The runoff volume for this area is calculated to be 0.0013 acre ft.

Put in
Plan 4/25/91

TABLE OF CONTENTS (cont)

7.3	RECLAMATION HYDROLOGY	90
7.3.1	<u>Post-Mining Rehabilitation</u>	90
7.3.2	<u>Restoration of Natural Channels</u>	90
7.3.3	<u>Bear Creek Channel Reclamation</u>	92
7.3.4	<u>Sedimentation Ponds Reclamation</u>	94
7.4	REFERENCES	96

APPENDIXES

A	Drill Hole Logs	7A-1
B	Discharge Permit	7B-1
C	Water Rights	7C-1
D	Agreement with Huntington City	7D-1
E	Slope Stability Analysis, Sedimentation Pond "A"	7E-1
F	Computer Sizing Runs (Sedimentation Ponds, Ditches and Culverts	7F-1
G	Bear Creek Flood Stage	7G-1
H	Reclamation Channel Sizing	7H-1
I	Sedimentation Pond Certification	7I-1
J	Probable Hydrologic Consequence Determination	7J-1
K	B.T.C.A. Areas	7K-1
L	Gentry Mountain Cumulative Hydrologic Impact Assessment	7L-1

GENERAL

Upon inspection of the Mine permit area it was found that the areas described below exist in the undisturbed zones and that surface runoff going through these areas does not pass through the sediment pond treatment facilities. In order to provide adequate treatment for these areas, straw bale dikes and/or silt fences will be installed as indicated on Plate 7-1. The sediment control structures will be positioned so that surface runoff passes through them before entering Bear Creak. Treatment facilities will be maintained for each area until approved and determined that adequate revegetation cancels the need for treatment. These areas are designated as "Best Technology Currently Available" or BTCA Areas. Drainage from these areas will be monitored as possible to show compliance with the state and federal limitations.

OUTSLOPE BANK OF UPPER STORAGE PAD.

During construction of the Upper Storage Pad (Plate 7-1) some fill was apparently overcast down the face of the slope below. The area covers approximately 800 sq ft. A silt fence will be installed and maintained at the inlet to culvert C-8U. In 1991, culvert C-8U will be eliminated, and the drainage will go to Sediment pond "A". The runoff volume for this area is calculated to be 0.0013 acre ft. ?

AREA NEAR PORTAL NO.1

This area lies between the upper lamphouse/mine portal bermed pad and the portal access road, extending from the road junction on the south to just north of the upper office trailer at the beginning of the Cattle Co. Road. The area is approx. 0.28 acres. A silt fence is installed at the north end of the area where runoff flows down hill from the Cattle Co. Road area. Runoff from the area passes through a silt fence near the inlet to culvert C-6U. Runoff volume from this area is calculated to be 0.019 acre ft.

BALL PARK TOPSOIL PILE

The ball park covers 1.2 acres. Straw bale dikes and/or silt fences will be installed on the south east side, in line with the natural flow to treat runoff before it enters Bear creak. Runoff volume from this area is calculated to be 0.082 acre ft.

TOPSOIL STOCKPILE

The main topsoil storage pile covers approx 0.1 acres. The area is encircled by an 18 in. berm and is protected by established vegetation. Runoff volume from this area is calculated to be 0.0068 acre ft.

Note: Runoff volumes are based on the 10 yr 24 hr event of 2.25 in. and runoff CN of 82.

TABLE OF CONTENTS

8	SOIL RESOURCES	1
8.1	SCOPE	1
8.2	METHODOLOGY	1
8.3	SOIL INFORMATION	5
8.3.1	<u>Soils Identification</u>	5
8.3.2	<u>Soils Description</u>	5
8.4	PRIME FARMLAND DETERMINATION	11
8.5	SOILS, PHYSICAL AND CHEMICAL PROPERTIES	11
8.6	SELECTED OVERBURDEN MATERIALS OR SUBSTITUTES	12
8.6.1	<u>Main Topsoil Storage Pile</u>	12
8.6.2	<u>Ball Park Topsoil Storage Pile</u>	14
8.6.3	<u>Topsoil Summary</u>	18
8.7	REMOVAL, STORAGE AND PROTECTION OF SOILS	18
8.7.1	<u>Physical and Chemical Properties of Soils</u>	18
8.7.1	<u>Soil Removal, Handling, Storage, and Protection Plans</u>	19
	8.7.1.1 Topsoil Removal	
	8.7.1.2 Topsoil Stockpile	
	8.7.1.3 Topsoil Protection	
8.8	REDISTRIBUTION OF SOILS	24
8.9	NUTRIENTS AND SOIL AMENDMENTS	25
8.10	EFFECTS OF MINING OPERATIONS ON TOPSOIL, NUTRIENTS, AND SOIL AMENDMENTS	26
8.11	MITIGATION AND CONTROL PLANS	27

APPENDIXES

A	Soil Test Reports	8A-1
B	SCS Soil Survey	8B-1
C	Prime Farm Lands	8C-1
D	Substitute Topsoil Material	8D-1

LIST OF FIGURES

Figure 8.6-1	Photographs of Ball Park Area	16
Figure 8.6-2	Ball Park Topsoil Storage Pile	17

LIST OF TABLES

Table 8.6-1	Ball Park Seed List	15
Table 8.6-2	Summary Table	18
Table 8.7-1	Analytical Parameters for Baseline Soils Data	20

LIST OF PLATES

Plate 8-1	Soils Map
Plate 8-2	Topsoil Storage Pile
Plate 8-3	Topsoil Storage Pile Location
Plate 8-4	Ballpark Topsoil Pile

has been purchased to relieve the deficiencies in the present stockpile. These results are attached in Appendix 8-A.

8.6 SELECTED OVERBURDEN MATERIALS OR SUBSTITUTES

There are approx 16 acres of disturbed area at the Bear Canyon Mine site. Of the 15.63 acres, approx 3.8 acres were constructed prelaw, and although no topsoil was saved, native material is available as down-cast material. In order to show that the downcast material is adequate and suitable as final reclamation plant growth material for the 3.8 acres, procedures outlined in Appendix 8-D will be followed.

The remaining approx 12 acres of disturbance will be covered with 6 in. of topsoil during reclamation. This will require approx 9,550 cu yds of topsoil. There are two existing topsoil storage areas on site (Plate 8-3), with storage quantities that meet this requirement.

8.6.1 Main Topsoil Storage Pile

The original topsoil storage pile was located north-east of the scale house in Bear Canyon. This pile consisted of approx 2,600 cu yds of topsoil stripped from the Bear Canyon disturbance. In 1990 this pile is proposed to be moved to the location shown on Plate 8-3. During the construction of the new storage pile and culvert

extension, additional topsoil will be recovered and incorporated into the pile following methods described in Section 8.7 and other applicable section of the mine plan. Surplus suitable plant growth material will be recovered from below the original Topsoil Pile when the area is graded for the proposed Bath house and from the new topsoil pile area. The new pile will be marked and protected by a berm and vegetation to prevent soil loss (Plate 8-2) as defined in Section 8.7.1.3. With the experience of Trail Canyon and the expected condition of the material to be recovered, Co-Op is confident that the deficiency will be covered. The SCS is scheduled to do a survey of the proposed material in Oct 1990.

8.6.3 Topsoil Summary

The following table summarizes the information discussed in the previous Sections:

Table 8.6-2 Summary Table

Total mine disturbance	15.63 acres
Area with topsoil (pre-law, down-cast material)*	3.8 acres
Area requiring topsoil	11.83 acres
Topsoil required	
11.83 acres x 6 in. depth	9,545 cu yds
Topsoil stored	
Upper site	3,600 cu yds
Ball Park site	3,400 cu yds
Total topsoil available	7,000 cu yds
Additional plant growth material to be recovered**	2,545 cu yds

* Downcast material to be used as substitute plant growth material.

** If only 3 to 4 ft of additional material is available at the existing and proposed topsoil site, the Ball Park site material will not be required for reclamation.

8.7 REMOVAL, STORAGE AND PROTECTION OF SOILS

8.7.1 Physical and Chemical Properties of Soils

The 1982 Co-Op field investigations provided information on the physical and chemical properties of soils in the permit area and is discussed in Appendix A. A rating for topsoil is included on the forms, as are some chemical properties. Soils found on-site are listed in the Soils Legend and shown on Plate 8-1. In studies during the 1984 field season on site sampling was analyzed

for the required chemical properties in all horizons (see Appendix A).

8.7.1 Soil Removal, Handling, Storage, and Protection Plans

Prior to the start of all new construction, topsoil will be analyzed as outlined in Table 8.7-1, in accordance with Division recommendations to determine the extent and depth of suitable plant growth medium and will be separately salvaged and stockpiled. Topsoil is stockpiled, consolidated and protected from wind and water erosion and contamination which might lessen its capability to support vegetation. The following subsections deal specifically with the various phases of the topsoil and subsoil handling plan.

8.7.1.1 Topsoil Removal

The depth of topsoil removed previous to 1990 was determined by the amount of A and B horizon material as defined in OSM Regulation 30 CFR 783.22. Existing vegetation was removed and topsoil was collected prior to excavation or other disturbance operations within the affected areas. The topsoil removed in these areas consists of A horizon quality material and B horizon quality material with virtually no distinctive difference. The C horizon material was not removed since it was not sufficiently capable of supporting diverse vegetation due to the excessive rock.

Table 8.7-1 Analytical Parameters for Baseline Soils Data

Test to be Performed	Reported As	Suggested Methods ¹
Soil Color	Hue Value/Chroma	Munsell notation
Soil texture	% sand, silt, clay	Hydrometer method. Black et al. 1965. Methods of soil analysis. ASA Mono No. 9, Part 1, method 43-5, pages 562-566.
pH	standard units	ASA Mono. No. 9, part c (2 ed). 1982. Method 10-3.2, page 171. pH performed on saturation paste, method 10-2.3.1, page 169.
Organic Carbon	%	ASA Mono No. 9, Part 2, 1982 (2 ed). Method 29-5.3. pages 571-573.
Saturation Percentage	%	SP = 100(total wt of water)/ (wt of oven-dry soil). Wts of water and soil known when making a saturated paste.
Alkalinity	meq/ liter	Std. Methods for Examination of waters and waste water, 15 ed., 1980, Method 403.4. Bromocresol green-method red indicator.
Electrical Conductivity	mmhos/cm @ 25°C	ASA Mono. No. 9, Part 2 1982, (2 ed). Method 10-3.3, pages 172-173. Use saturation paste extract.
CaCO ₃	%	ASA Mono. No. 9, Part 2, 1982 (2 ed). Method 11-2.4, pages 188-191.

Table 8.7-1 Analytical Parameters for Baseline Soils Data (cont)

Test to be Performed	Reported As	Suggested Methods ¹
Soluble Potassium, Magnesium, Calcium & Sodium	meq/l	ASA Mono. No. 9, Part 2, (2 ed), 1982. Method 10-3.4. pages 173-174.
Sodium Adsorption Ratio ²	SAR calculated from soluble Ca, Mg & Na (meq/l)	$\frac{[Na^+]}{([Ca^{2+} + Mg^{2+}]/2)^{0.5}}$
Total N	%	ASA Mono. No. 9, Part 2 (2 ed), 1982. Method 31-3, pages 610-616.
Available Phosphorus	mg/Kg	ASA Mono. No. 9, Part 2, (2 ed), 1982. Method 24-5.4, pages 421-422.
Available Water Capacity	in/in	USDA SCS Soil Survey Investigation Report No. 1, Method 4C1, page 24.
Rock Fragments	% Volume	USDA SCS Soil Survey Investigation Report No. 1, Method 3B, page 18.

¹These are suggested methods, other equivalent methods may be used if described and can be justified prior to sampling.

²If samples have a SAR greater than 12 for clay textured soils or greater than 15 for sandy textured soils, then exchangeable sodium percentage should be analyzed.

Note: This table is from Table 1 of the Department's "Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining", April 1988.

The equipment used for topsoil removal consists of bulldozers, front-end loaders, and dump trucks. The use of bulldozers requires pushing of the topsoil to a collection point for loading into dump trucks or other means of transportation to the designated stockpile. Adequate supervisory personnel are present at the time of the topsoil removal to instruct the equipment operators in the proper techniques of topsoil removal and to ensure that required horizons are removed and stored.

8.7.1.2 Topsoil Stockpile

Plans involving topsoil storage can be labeled as "short term" or "long term" depending on completion of activities in each area and the reclamation schedule presented.

Short-Term Topsoil Storage Areas. Short-term stockpiles of topsoil will be for areas to be reclaimed almost immediately upon cutting. At final grade topsoil will be redistributed promptly to minimize natural degradation processes. No short-term piles are anticipated at this time. If a need arises, a site-specific plan will be submitted prior to disturbance.

Long-Term Topsoil Storage Areas. During any new construction of areas that will be used for the duration of the mining operation within the permit area, topsoil will be collected and stockpiled. The topsoil will be used for post-mining reclamation.

Topsoil is presently being stored within areas of the permit boundary (Section 8.6). These piles should be considered "long term".

8.7.1.3 Topsoil Protection

The short-term topsoil stockpile will be sprayed with water or temporarily vegetated to retard erosion. The long-term topsoil stockpile will be protected by the following operational steps:

1. A stable surface will be provided in an area outside the influence of active operations.
2. As a stockpile is completed, it will be left in a rough condition to minimize erosion.
3. Stockpiles will be situated out of drainages to prevent water erosion.
4. Storage piles will be vegetated with quick growing, soil-stabilizing plants. Revegetation will involve the immediate seeding of stockpiles during the next planting season with the seed mixture recommended in Section 9.5, in compliance with the requirements of the appropriate land management agency.

5. Signs will be posted to protect the stockpiles from accidental use as fill or from other inadvertent material contamination. The establishment of noxious plant species will be prevented.
6. Stockpiled topsoil will not be removed or otherwise disturbed until required for redistribution on a prepared and regraded disturbed area.

8.8 REDISTRIBUTION OF SOILS

Following backfilling and regrading (Section 3.6.4) and prior to topsoil redistribution, regraded land will be scarified by a ripper to a depth of 14 in. in order to reduce surface compaction, provide a roughened surface assuring topsoil adherence, and promote root penetration. Steep slope areas which must remain after abandonment will receive special ripping to create ledges, crevices, pockets, and screes. This will allow better soil retention and vegetation establishment.

Prior to seeding, topsoil will be distributed on areas to be reclaimed. Topsoil redistribution procedures will ensure an approx uniform thickness of 6 inches as indicated by Soil Survey - March 1980 (Appendix 8-B). Topsoil will be redistributed in the fall of the year (Oct.) suitable for establishment of permanent vegetation. A very roughened seed bed will be left in all cases.

To minimize compaction of the topsoil following redistribution, travel on reclaimed areas will not be allowed. Co-Op will exercise care to guard against erosion during and after application of topsoil and will employ wood fiber mulch and tackifiers to ensure the stability of topsoil on the graded slopes. The specific methods to be implemented are defined in Section 9.

The soil stabilization methodology that will be used includes the placement of crushed and heavier material at the toe of road fill slopes, and the random placement of large rocks and boulders on the surface. This procedure will enhance the microclimate as well as make the reclaimed area more aesthetically compatible with the undisturbed surroundings. Erosion control matting will be installed on steep slopes where it is determined that the use is required for the proper establishment of vegetation and erosion control. The detailed revegetation plan to be submitted in the last five year permit renewal prior to reclamation, will include maps showing the areas to receive matting.

8.9 NUTRIENTS AND SOIL AMENDMENTS

Chemical analysis for micronutrients will be conducted by testing soil extracts from the redistributed material as outlined in Table 8.7-1. All necessary fertilization and/or neutralizing compounds will be applied according to the results of the soil sampling and analysis program approved by the division.

8.10 EFFECTS OF MINING OPERATIONS ON TOPSOIL, NUTRIENTS, AND SOIL AMENDMENTS

Since the Bear Canyon Mine is an underground mine, the impact of mining on soils will be minor overall. The impacts of surface operations and mining facilities on soil resources consist of coverage of soil by land-fills¹ and refuse, disturbance of soils during construction activities, erosion created by removing vegetation, reduced forage growth due to nutrient degradation, reduced livestock capacity, and particulate emissions to the air.

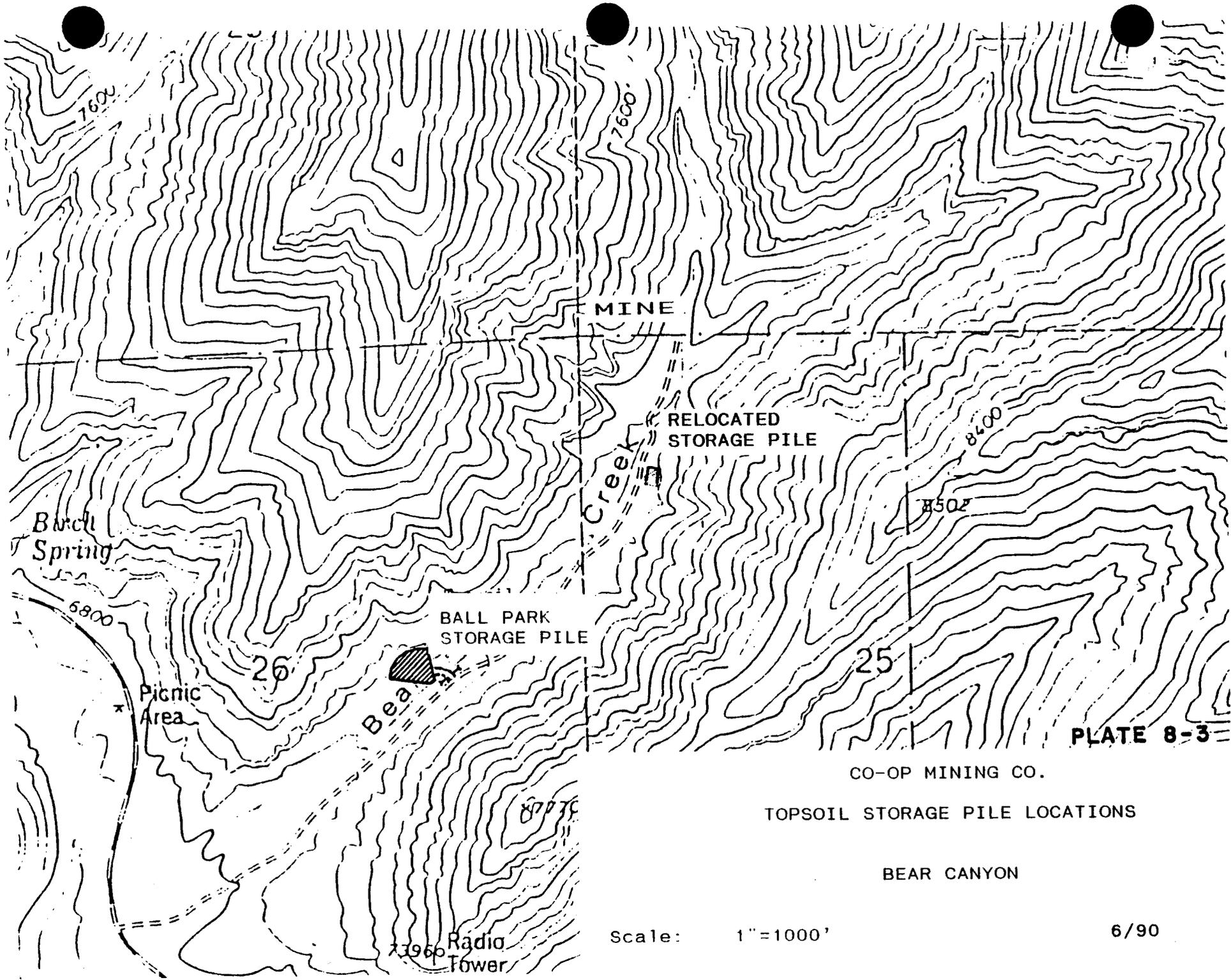
The areas in which soils have been disturbed to date within the permit area, includes the loadout area, offices, shops and substations, roads, portal areas, and the topsoil areas. Additional acreage may be disturbed in the future if Co-Op elects to proceed with certain projects it is considering.

¹Coverage of soil by landfills occurred pre-SMCRA.

8.11 MITIGATION AND CONTROL PLANS

Detailed Interim Reclamation Plans are included in Appendix 3-G of this Reclamation Plan in regard to stockpiling, long and short-term plans, and goals for final reclamation.

Co-Op is committed to take whatever steps are necessary to minimize loss of soil through erosion. Whenever rills or gullies become evident, will be filled, regraded, rip-rapped and re-seeded tackified, and mulched. This work will commence prior to any significant loss (Rills and Gullies, less than 9 in.).



MINE

RELOCATED
STORAGE PILE

BALL PARK
STORAGE PILE

Picnic
Area

Radio
Tower

Buck
Spring

Creek

PLATE 8-3

CO-OP MINING CO.

TOPSOIL STORAGE PILE LOCATIONS

BEAR CANYON

Scale: 1"=1000'

6/90

TABLE OF CONTENTS

9	VEGETATION	1
9.1	SCOPE	1
9.2	METHODOLOGY	1
9.2.1	<u>Sample Point Selection</u>	2
9.2.2	<u>Sample Adequacy Determination</u>	2
9.2.3	<u>Vegetation Cover Estimation</u>	3
9.2.4	<u>Shrub Density and Height Estimation</u>	3
9.2.5	<u>Tree Density and Basal Area Estimation</u>	4
9.3	EXISTING RESOURCE	4
9.3.1	<u>SCS Productivity Estimates</u>	4
9.3.2	<u>Sampling Methodology</u>	5
9.3.3	<u>Vegetation Types</u>	6
	9.3.3.1 Grass Vegetation Types	
	9.3.3.2 Riparian Vegetation Types	
	9.3.3.3 Pinyon-Juniper Type	
	9.3.3.4 Sagebrush	
	9.3.3.5 Bare Cliffs and Talus	
9.4	THREATENED AND ENDANGERED SPECIES	10
9.5	VEGETATION RECLAMATION PLAN	11
9.5.1	<u>Phase 1 - Backfilling and Grading</u>	13
9.5.2	<u>Phase 2 - Site Preparation</u>	13
9.5.3	<u>Phase 3 - Seeding and Mulching</u>	13
	9.5.3.1 Drill Seeding	
	9.5.3.2 Hydroseeding	
	9.5.3.3 Mulching	
9.5.4	<u>Phase 4 - Planting</u>	17
	9.5.4.1 Planting Procedure	
	9.5.4.2 Field Storage	
9.5.5	<u>Recommended Seed Mix</u>	22
	9.5.5.1 Noxious Weeds	
9.5.6	<u>Revegetation Cost Estimate</u>	25
9.6	RECLAMATION VEGETATION MONITORING	26

APPENDIXES

A	Vegetation Analysis	9A-1
B	SCS Letter	9B-1

LIST OF FIGURES

9.5-1	Correct Planting Procedures	19
9.5-2	Seedling Storage	20

LIST OF TABLES

9.3-1	Vegetation Types	6
9.5-1	Revegetation Schedule	12
9.5-2	Suggested Ratios of Tack to Fiber	15
9.5-2	Recommended Seed Mix, Riparian-Creek Bottom	22
9.5-3	Recommended Seed Mix, Pinyon Juniper Grass	23
9.5-4	Revegetation Cost Estimate	25

LIST OF PLATES

Plate 9-1 Vegetation Map

9.5.1 Phase 1 - Backfilling and Grading

Backfilling and Grading plans are found in Section 3.6.4 of this plan. Roads will be brought back to a reasonable configuration as described in Appendix 3-D.

9.5.2 Phase 2 - Site Preparation

Site stability will be largely accomplished through the grading, compacting and the utilization of a tackifying agent. However, terracing and erosion control matting will be required on some of the steeper slopes of more than 2:1. See Section 3.6.4. Mapping of each area receiving each control measure will be submitted with the detailed revegetation plan in the last five year permit renewal prior to reclamation.

Soil redistribution and stabilization will be completed as defined in Section 8.8 of this plan.

9.5.3 Phase 3 - Seeding and Mulching

The entire area of disturbance will be drilled or hydroseeded during the first Fall following the complete abandonment and earth work (September through November). Spring seeding was considered too speculative to be implemented based on the variation in Spring moisture regimes.

9.5.3.1 Drill Seeding

The largest portion of the recontoured site will facilitate drill seeding. The balance of the area would then be hydroseeded (Section 9.5.3.1). In order to lessen compaction, a rangeland drill seeder pulled behind a small crawler tractor will be utilized. The seed mix and rate of application is given in Section 9.5.5.

All drill seeded areas will be mulched with two tons per acre alfalfa, straw or grass hay. The mulch will be certified as weed free by the county agriculture agent. Copies of this certification, along with weight tickets from a certified scale will be submitted to the Division.

9.5.3.2 Hydroseeding

Steep slopes will be seeded with a hydro-seeder or possibly hand seeded. The seed mix and rate of application is given in Section 9.5.5.

All hydroseeded or hand seeded areas, will be lightly raked to insure adequate soil/seed contact. On slopes greater than 2:1, a two step hydroseeding methods will be used. One half of the seed amount will be applied and raked and then the remaining seed will be applied.

In combination with the seed, the following rates of tackifier will be utilized:

Table 9.5-2 Suggested Ratios of Tack to Fiber

<u>slope angle (deg)</u>	<u>slope ratio (rise:run)</u>	<u>percent slope</u>	<u>lbs. Tack per ton fiber</u>	<u>ratio tack to fiber</u>
14	1 : 4	25	60(min)*	1 : 30
26	1 : 2	50	80	1 : 25
33	1 : 1 1/2	66	100	1 : 20
45	1 : 1	100	120	1 : 16
57	1 1/2 : 1	150	140	1 : 14
64	2 : 1	200	160(min)	1 : 12

* 60 pounds is suggested as a minimum to insure excellent stabilization; however, in many conditions 40 pounds of Tack per acre has given excellent results on a 1:4 or less slope.

(Rates of Tack were developed with respect to velocity and erosive power of water which is proportional to the square root of the slope.) An empirical factor was determined from laboratory and field studies to arrive at the minimum Tack fiber ratio. Thus, 60 pounds of Tack per ton of fiber is about minimum for slopes up to 20 pct and the empirical factor is determined as 60 divided 20 pct = For a 100 pct slope (1:1 or 45 degrees) the ratio of Tack to fiber is calculated as:

(100 pct) (12) = 120 pounds. Tackifier to be used for Hydroseeding and Hydromulching to Serve as Mulch or Soil Binder.

9.5.3.3 Mulching

Following the seeding effort the entire area of disturbance will be hydromulched and fertilized. The rate of application of the wood fiber mulch is:

1,200 to 1,500 lbs/acre on flat areas or gentle slopes
2,000 to 2,500 lbs/acre on slopes exceeding 3:1 (horiz
to vert) slopes

The mulch will also be fortified with Tack as previously indicated according to slope. Fertilization and/or neutralizing compounds required according to Section 8.9. will be incorporated in the mulch slurry.

9.5.5 Recommended Seed Mix

All seed obtained will comply with all state and federal seed laws. Copies of certificates for testing and poundage of seed purchased, will be submitted to the division. Any changes in the approved seed mixes will first be cleared with the Division. Costs listed below were gathered from suppliers in Nov. 1990.

It is currently recommended by the State of Utah, Division of Oil, Gas & Mining (DOGGM) that riparian areas such as the one in Bear Canyon Mine site not be seeded. It is often impractical to attempt to seed these narrow corridors in conjunction with the surrounding seeded areas. Instead it is recommended that the operator plant woody plant seedlings.

Table 9.5-2 Recommended Seed Mix, Riparian-Creek Bottom

<u>Scientific Name</u>	<u>Common Name</u>	<u>Plants/ac</u>	<u>Cost/ac*</u>
<u>Populus angustifolia</u>	Cottonwood	150	\$120
<u>Prunus virginiana</u>	Chokecherry	150	\$120
<u>Rosa woodsii</u>	Wood's Rose	500	\$400
<u>Sambucus caerulea</u>	Elderberry	100	\$ 80
<u>Salix spp.</u>	Willow	2000	\$400
	TOTAL	<u>2900</u>	<u>\$1120</u>

* Cost of all (except Salix spp.) estimates plant material cost only (labor not included).

Salix should be cut from a source area in close proximity to the mine site and planted in the reclaimed area. The cost of this species is based on estimated labor to accomplish this.

After two years the seeding effort will be evaluated and planting will be instigated in the event it appears necessary to bring the density and diversity of woody species up to the confidence levels of the corresponding reference area. The same species will be planted as listed above under shrubs. In addition, the following tree species will be planted:

<u>Species</u>	<u>Number per Acre</u>	<u>Spacing within Clumps*</u>
<u>Pinus edules</u>	18	5 ft
<u>Acer glabrum torr.</u>	18	5 ft
<u>Prunus virginiana</u>	5	25 ft

* Clumps spaces at 30 yd. intervals for wildlife cover

9.5.5.1 Noxious Weeds

The following weeds are officially designated as noxious for the State of Utah, as per the authority vested in the Commissioner of Agriculture under Section 4-17-3, Utah Noxious Weed Act, and will be controlled as directed by the Emery County, Extension Agent if found within the permit area:

Bermudagrass	<u>Cynodon dactylon</u>
Bindweed	<u>Convolvulus spp.</u>
Broadleaved Peppergrass	<u>Lepidium latifolium</u>
Canada Thistle	<u>Cirsium arvense</u>
Dyers Woad	<u>Isatis tinctoria</u>
Johnson Grass	<u>Sorghum halepense</u>
Leafy Spurge	<u>Euohorbia esula</u>
Musk Thistle	<u>Carduus nutans</u>
Quackgrass	<u>Agropyron repens</u>
Russian Knapweed	<u>Centaurea repens</u>
Scotch Thistle	<u>Onopordium acanthium</u>
Whitetop	<u>Cardaria spp.</u>

9.6 RECLAMATION VEGETATION MONITORING

All reclaimed areas will be monitored to determine when bond release parameters are achieved. Success standards will be based on the reference area. Qualitative (ocular estimates) monitoring will be completed each year until bond release with the intent of identifying problem areas. Quantitative monitoring will be made during years 2, 3, 5, 9 and 10 until bond releases. Both the final reclaimed area and reference area will be sampled for cover, density (woody plants). Species composition data will be collected and compiled every two years, using cover sampling data. Productivity measurements will be collected during years 9 and 10 of the bond liability period.

The success of the reclamation effort will be evaluated by detailed sampling of cover, woody plant density and production of reference and reclaimed areas. The data from the reclaimed areas and the reference area will be collected during the same growing season. If there is no significant difference in cover woody plant density and production between the reclaimed areas and the reference areas when tested at the 90 pct significance level using a one-tailed t-test, then the areas will be judged to adequately reclaimed relative to cover and production.

Wood plant density standards will be sampled for each reference area as well as the reclaimed areas and the success of

the reclaimed area based on the results from the reference areas (90 pct pre-mining stock level survival at bond release) cover, woody plant density on reclaimed and reference areas will be measured using the same methods employed during the baseline studies. At the time of bond release, trees and shrubs, used to achieve success, will be healthy and at least 80 pct will have been in place for at least eight growing seasons. No trees and shrubs in place for less than two growing seasons will be counted in determining stocking adequacy.

Standard methods, as outlined in Chapter 9, Vegetative Resources, will be applied to determine the degree of success for revegetation attempts. Production will be measured using a Harvest methodology. Shrub density data will be collected, using 1 m x 50 m transects.

One of the greatest challenges of revegetation is to create reclaimed areas which have a large number of desirable species. Species diversity on the reclaimed areas will be encouraged by including a variety of grasses, forbs, and shrubs in seeding and planting mixes.

Species diversity will be judged adequate when the relative cover and pct distribution of biomass for the major life form groups approx that which occurs in the reference areas. That is, if the relative cover by perennial grasses is 50 pct in the

reference areas, then the relative cover by perennial grasses on the reclaimed areas should also be approx 50 pct. This same relationship should also hold true for productivity. If most of the cover and production were being provided by annual forbs on the reclaimed areas and by perennial grasses on the reference areas, then the reclamation would be judged unsuccessful.

The purpose of the above procedures is to demonstrate that based on cover, production, woody plant density, and species diversity, the disturbed areas have been returned to stable plant communities capable of withstanding the intended post-mining land use.

TABLE OF CONTENTS

3	OPERATION AND RECLAMATION PLAN	1
3.1	SCOPE	1
3.2	SURFACE FACILITIES - EXISTING	1
3.3	SURFACE FACILITIES - NEW	1
3.3.1	<u>Site Selection and Preparation of Proposed Facilities</u>	1
3.3.2	<u>Portals</u>	2
3.3.3	<u>Surface Buildings and Structures</u>	2
3.3.4	<u>Coal Handling, Storage and Loading</u>	5
3.3.5	<u>Power System, Transmission Lines and Substations</u>	5
3.3.6	<u>Water Supply System</u>	5
3.3.7	<u>Water Diversion Structures</u>	6
3.3.8	<u>Sedimentation Control and Water Treatment Facilities</u>	6
3.3.9	<u>Storage, Waste and Refuse Areas</u>	6
3.3.10	<u>Transportation, Roads and Parking Areas</u>	6
3.3.11	<u>Topsoil Storage Piles</u>	8
3.3.12	<u>Explosives Storage and Handling</u>	8
3.3.13	<u>Relocation or Use of Public Roads</u>	9
	3.3.13.1 Protective Measures	
	3.3.13.3 Cross Section	
3.3.14	<u>Total Area for Surface Disturbance During Permit Term</u>	10
3.3.15	<u>Additional Area for Surface Disturbance for Life of Mine</u>	10
3.3.16	<u>Detailed Construction Schedule</u>	10

TABLE OF CONTENTS (cont)

3.4	OPERATION	10
3.4.1	<u>Mining Plans</u>	11
3.4.1.1	Advance-Retreat Mining Procedures	
3.4.1.2	Mining Methods	
3.4.1.3	Ventilation, Water System, Dust Suppression, and Dewatering	
3.4.2	<u>Barrier Pillars</u>	17
3.4.2.1	Property Boundaries	
3.4.2.2	Outcrop Protection	
3.4.2.3	Protection of Natural Surface Structures & Streams	
3.4.2.4	Protection of Manmade Features (Surface & Subsurface)	
3.4.2.5	Protection of Oil, Gas and Water Wells	
3.4.3	<u>Conservation of Coal Resource</u>	20
3.4.3.1	Minable Reserves	
3.4.3.2	Recovery Factors	
3.4.4	<u>Equipment Selection</u>	29
3.4.4.1	Surface Equipment	
3.4.5	<u>Mine Safety, Fire Protection and Security</u>	29
3.4.5.1	Signs	
3.4.5.2	Fences and Gates	
3.4.5.3	Hazardous and Flammable Materials Contingency Plan	
3.4.5.4	Compliance with Regulations	
3.4.6	<u>Operations Schedule</u>	35
3.4.6.1	Annual Production for Permit Time	
3.4.6.2	Operating Schedule	
3.4.6.3	Employment	

TABLE OF CONTENTS (cont)

3.5	ENVIRONMENTAL PROTECTION	37
3.5.1	<u>Preservation of Land Use</u>	37
3.5.1.1	Projected Impacts of Mining on Current and Future Land Use	
3.5.1.2	Control Measures to Mitigate Impacts	
3.5.2	<u>Protection of Human Values</u>	40
3.5.2.1	Projected Impact of Mining on Human Values, Historical and Cultural	
3.5.2.2	Control Measures to Mitigate Impacts	
3.5.3	<u>Protection of Hydrologic Balance</u>	41
3.5.3.1	Control Measures to Mitigate Impacts	
3.5.4	<u>Preservation of Soil Resources</u>	44
3.5.4.1	Projected Impacts of Mining on Soil Resources	
3.5.4.2	Control Measures to Mitigate Impacts	
3.5.5	<u>Protection of Vegetative Resources</u>	47
3.5.5.1	Projected Impacts of Mining on Vegetative Resources	
3.5.5.2	Mitigating Measures to be Employed to Reduce Impacts on Vegetative Resources	
3.5.5.3	Monitoring Procedures	
3.5.6	<u>Protection of Fish and Wildlife</u>	50
3.5.6.1	Projected Impacts of Mining on Fish and Wildlife	
3.5.6.2	Mitigating Measures to be Employed to Protect Fish and Wildlife	
3.5.6.3	Monitoring Procedures	
3.5.7	<u>Protection of Air Quality</u>	55
3.5.7.1	Projected Impacts of Mining Operation on Air Quality	
3.5.7.2	Mitigating Measures to be Employed to Control Air Pollutants	
3.5.7.3	Air Quality Monitoring Plan	
3.5.8	<u>Waste Disposal Plans (Spoils, Coal Processing Wastes, Mine Development Wastes, Non-coal Wastes, Removal Handling and Storage.</u> . . .	57

TABLE OF CONTENTS (cont)

3.6	RECLAMATION PLAN	59
3.6.1	<u>Contemporaneous Reclamation</u>	61
3.6.2	<u>Soil Removal and Storage</u>	61
3.6.3	<u>Final Abandonment</u>	61
3.6.3.1	Sealing of Mine Openings. Drill Holes, Wells, etc.	
3.6.3.2	Removal of Surface Structures	
3.6.3.3	Disposition of Dams, Ponds and Diversions	
3.6.4	<u>Backfilling and Grading Plans</u>	68
3.6.4.1	Recontouring	
3.6.4.2	Removal or Reduction of Highwall	
3.6.4.3	Terracing and Erosion Control	
3.6.4.4	Soil Redistribution and Stabilization	
3.6.5	<u>Revegetation Plan</u>	77
3.6.5.1	Mulching	
3.6.5.2	Irrigation	
3.6.5.3	Management	
3.6.5.4	Vegetative Monitoring	
3.6.6	<u>Schedule of Reclamation</u>	80
3.6.7	<u>Reclamation Monitoring</u>	81
3.6.8	<u>Reclamation Bonding</u>	83
3.6.8.1	Detailed Timetable for Completion of Major Reclamation Processes	
3.6.8.2	Reclamation Cost and Bonding	
3.6.8.3	Modifications to Bonding	
3.6.9	<u>Alluvial Valley Floor Determination R614-302- 320</u>	93
3.6.10	<u>Temporary Cessation</u>	94
3.6.10.1	Temporary Portal Seals	

APPENDIXES

A	Existing Structures	3A-1
B	Culinary Water System	3B-1
C	Fee Property Lease Addition	3C-1
D	Road Reclamation Plan	3D-1
E	Toxic Materials & Handling	3E-1
F	Slope Stability Analysis	3F-1
G	Interim Reclamation Plan	3G-1
H	Renewable Resource Survey and Subsidence	3H-1
I	Blind Canyon Intake and Fan Portals	3I-1
J	Upper Bear Canyon Intake Portal and Emergency Escapeway	3J-1
K	Sediment Pond Material	3K-1

LIST OF FIGURES

3.4-1	Typical Panel Recovery	14
3.4-2	Typical Pillar Extraction	15
3.4-3	Coal and Geography Map, Hiawatha NE Quadrangle	23
3.4-4	Core Samples Measurements	24
3.4-5	Core Samples Measurements	25
3.4-6	Core Samples Measurements	26
3.6-1	Typical Portal Seal	65
3.6-2	Typical Slope Reclamation	70

LIST OF TABLES

3.4-1	Coal Reserves - Bear Canyon Mine	27
3.4-2	Sign Maintenance	31
3.4-3	Scheduled Sequence of Underground Activity	36

The Bear Canyon Haul Road is a primary road approx 1800 ft long from the gate to the scale house. The road is 30 ft wide and crowned in the middle (Plate 3-5). Drainage is provided by ditches on each side and culverts are installed where needed.

The mine area/portal access road is a primary road, approx 2,112 ft long and drainage structures are also in place (Plates 3-1 and 3-5). Three other primary roads provide access to the Sediment Pond A, the coal preparation facility and to the bathhouse. Sections of these three roads are found on Plate 3-1a.

There is one ancillary (jeep trail) road shown near the portal on plate 2-4, but it is not in use.

Roads are maintained in such a manner that the performance standards will be met throughout the life of the entire transportation facility, including maintenance of the surface, shoulders, parking and side areas, and erosion control structures for safe and efficient utilization of the road.

Reclamation of roads and parking areas is treated in the same manner as other working areas. Any asphalt or treated surfaces will be removed prior to rehabilitated upon completion of mining. See Plates 3-1, 3-1a, 3-2 and 3-5, and road agreement under Appendix 3-D.

3.5.1.1 Projected Impacts of Mining on Current and Future Land Use

The tentative acreage to be disturbed for each activity described above are as follows:

Mine Shop Area	1.76	acres
Mine Access Road	2.15	acres
Portal Conveyor and Pad Areas	9.4	acres
Sediment Treatment Area	.5	acres
Scale Area	<u>1.82</u>	<u>acres</u>
Total	15.63	acres

The management objectives and the impacts from the Bear Canyon Mine pertaining to these objectives are described in detail in Chapter 4.

Impacts. Approx 16 acres of soil will be disturbed within the permit area. This includes loadout areas, offices, shops and substations, roads, portal areas, bath house and the topsoil storage area. The reduction in desirable plant species will temporarily reduce forage production and wildlife capacities. The short-term negative impact of vegetation removal would be outweighed by the positive impacts of revegetation and improved fire protection and prevention.

Wildlife in the area will adapt to the operation in a relative short time as witnessed by existing coal operations. Proposed construction may temporarily disrupt wildlife if human disturbance

is not kept to a minimum. These topics are discussed in detail in the Wildlife Report, Chapter 10.

3.5.1.2 Control Measures to Mitigate Impacts

Reclamation activities in the permit area will be directed toward minimizing the overall impact of coal mining. This can be accomplished by careful planning of the disturbed areas that must be later reclaimed. Reclamation activities are defined in Section 3.6.

The proposed mine surface operation facility area, will be returned to a wildlife/grazing habitat at the conclusion of the mining operation. The pre-mining and proposed post-mining uses are therefore identical for all areas (Chapter 4).

3.5.2 Protection of Human Values

There are no public parks nor historical sites worthy of preservation in the permit area.

- b. Water rights could be purchased for springs damaged by Co-Op, or, alternate water shares could be substituted (Appendix 7-C).
- c. A well could be drilled at the affected site to provide an alternate supply (since artisan conditions do not exist).
- d. Water produced in the mine could be piped to the affected site.
- e. Water shares presently owned could be transferred.

Alternative d. may mean treating of poorer quality water and pumping to overcome elevation differences.

In the unlikely event that mining adversely affects a water source, Co-Op will select an alternative after considering all possibilities of each site-specific circumstance. Forest Service approval will be obtained for water effected on Federal Lease U-024316.

3.5.4 Preservation of Soil Resources

Co-Op is prepared to meet the requirements specified by 30 CFR 784.15. Backfilling, soil stabilization, compacting, grading and any other necessary operations will be performed when necessary with the best technology available, as approved by the regulatory agency. Section 3.6, Reclamation Plan, provides a detailed

discussion of the reclamation effort.

3.5.4.1 Projected Impacts of Mining on Soil Resources

Since the Bear Canyon Mine is an underground mine at the site of an old works, the overall impact of mining on soils will be minor. The impacts of surface operations and mining facilities on soil resources consist of coverage of soil by facilities, disturbance of soils during construction activities, erosion created by removing vegetation, reduced forage growth due to nutrient degradation, reduced wildlife capacity and particulate emissions to the air. However, the abandoned mine had large accumulations of debris which has now been cleaned up, which to a large degree constitutes enhancement.

3.5.4.2 Control Measures to Mitigate Impacts

The objectives of the proposed backfilling as soon as operation are concluded in each disturbed area, the removed topsoil will be redistributed on the site in a 6 in. uniform lift. Methods and techniques are detailed in Section 3.6.4.4, Soil Redistribution and Stabilization.

Topsoil Removal and Protection. Before new construction or mining activity that will disturb the surface of undisturbed areas, topsoil will be removed from the effected area. Vegetation

will first be removed, then topsoil will be segregated from other materials, removed and stockpiled separately in a stable approved site within the permit area. The stockpile will be protected from erosion, compaction, or contamination and will be stabilized with interim revegetation procedures.

Backfill, Compaction and Grading. Disturbed surface areas will be backfilled, compacted and graded according to the approved time schedule. Wherever possible, backfilling will return the various soil horizons to their original site and make them compatible with surrounding areas. Compaction will help the returned soils remain in place. Grading will restore the contour to as near the original state as possible. Post Mining Topography is shown on Plate 3-2.

Since this mine produces no acid-forming or toxic-forming materials, backfilling required to cover such materials will be limited (Appendix 3-E).

Physical and Chemical Soil Stabilization. Soils will be stabilized by physical and chemical methods before planting. This will include placement of crushed heavy material at the top of road-fill slopes, for example. Other approved and proven methods will be

employed as necessary. Chemical stabilization will include the addition of neutralizing chemicals to soils shown to be excessively acidic or basic. Nutrients and soil amendments will be added in the amounts indicated by soil testing (Section 8.9) so approved post-mining land use can be sustained.

Biological Soil Stabilization. Returned soils will be stabilized biologically by revegetation of disturbed areas. This stabilization effect will be accomplished by the new vegetative cover, particularly small shrubs and trees. This aspect of soil stabilization will begin as soon as topsoil is redistributed. Section 3.6.5, Revegetation Plan, provides specific detail on the aspect of the reclamation plan.

3.5.5 Protection of Vegetative Resources

Co-Op has maintained a commitment to reclaim the unused disturbed areas to the extent of the cover of the natural vegetation on the mine plan area. Chapter 9, Vegetative resources, provides a preliminary report on the vegetative resources of the area.

3.5.5.1 Projected Impacts of Mining on Vegetative Resources

Since the Bear Canyon Mine is an underground mine, the overall impact on surface vegetation is minor. The effects of surface operations on vegetation from new construction areas, on-site

erosion and reduction of desirable plant species which will reduce forage production and wildlife capacity.

Vegetated areas adjacent to the disturbed areas are protected from coal fines primarily by utilization of dust controls, such as water sprays on the coal handling facilities and watering of the coal haul roads. One of the major areas, located in the canyon below the Upper Storage Pad, does show past impact from coal fines; however, it is not established that this impact is negative or detrimental to the vegetation. As an added precaution, however, this area is planned to be drained into the sediment pond in 1991, to prevent possible coal fine accumulation from reaching Bear Creek.

Waste dumping or other disturbance on undisturbed areas is not permitted. Disturbed area perimeter markers delineate the boundaries of disturbance. Employees are trained not to dump or otherwise disturb areas outside those boundaries.

It is not felt that monitoring of these areas by photos is necessary, or even feasible, since long-range photos would give only a very general overview, and close-up photos would be so specific to a small area as to not be representative. In lieu of photo monitoring, it is proposed to visually check the areas on at least a yearly basis, and if it appears that coal fine accumulation or other impacts are occurring from the operation, additional

R614-301-528.330 Disposal of Non-Coal Waste. Co-Op has undertaken a massive clean-up operation wherein large quantities of scrap have already been removed from the permit area. This operation was completed (1 Sept 1983) the balance of the salvageable equipment is being stored in the designated area.

The equipment which is not scrapped out is temporarily stored in the storage yard in Bear Canyon. This site is situated in such a manner to insure that whatever runoff results from the area will pass through designated sediment facilities.

The non-coal waste (other than rock refuse) generated in the operation of the mine is placed in metal dumpsters which are strategically located on the property. A local trash collector is contracted to replace these bins when they are approx 80 pct full,

Appendix 3-E addresses a comprehensive plan to handle toxic or contaminated material in the course of reclamation.

vegetation standard is achieved, the sediment control structures will be removed.

3.6.1 Contemporaneous Reclamation

Interim Reclamation (during operations) has occurred in areas that are no longer needed or that require short term stabilization. These areas were seeded and mulched. Other areas may be reclaimed at different times during the operation as specific activities are concluded (Appendix 3-G). This same procedure will apply to any area which becomes available during the life of the mine, and will be implemented upon the first available favorable season.

3.6.2 Soil Removal and Storage

Topsoil material has been removed from disturbed areas, prior to 1990, as described in Sec 8.7 (Removal, Storage and Protection of Soils), of this plan. Prior to the start of any new construction, topsoil material will be analyzed, salvaged and stockpiled according to the procedures discussed in the same section.

3.6.3 Final Abandonment

Co-Op anticipated that the post-mining land uses of the permit area will be the same as the pre-mining. State and local governments have not proposed any land use changes for the post-mining period.

3.6.4 Backfilling and Grading Plans

The objective of the proposed backfilling, soil stabilizing, compacting, contouring and grading process is to achieve a reclaimed surface which will provide a variety of topographic features and enhance post-mining land use.

The steps to be taken in the backfill, soil stabilization, compaction, contouring and grading problems are described in the following subsections. Stability analysis of highwalls and backfilled areas are discussed in Appendix 3-F.

Backfilling operations, utilizing equipment such as rubber-tired scrapers, bulldozers, backhoes, front-end loaders and dump trucks, will be conducted in the portal and treatment facility areas. Holes or depressions will be filled when the mining operation is concluded. Compaction operations utilizing equipment such as sheeps-foot tampers, will be conducted to stabilize all filled holes and depressions.

In general, the backfilling and grading operation will take place in the following manner:

- a. All mining portals will be sealed and backfilled as previously described in Section 3.6.3.1.

3.6.4.3 Terracing and Erosion Control

Site stability will be largely accomplished through the grading, compacting and the utilization of a tackifying agent. However, on those areas with slopes of more than 2:1, terracing and erosion control matting will be used to enhance erosion control.

Terraces effectively decrease the angle of repose of the slope in question. In accomplishing this you effectively modify the site and change those conditions which preclude vegetation from becoming established. Second, you change the severity of erosion and, in fact, use those surface waters which heretofore were destructive in nature. This is accomplished by creating basins wherein the water has time to soak in and thus can be utilized by vegetation.

By utilizing a small crawler tractor (JD450) terraces can be contoured with the resulting terrace creating a bench effect and spaced at 12 ft intervals down the slope. A terrace of 8 ft, toed toward the hill is thus created. Planting is then instigated at approximately 2 ft distance from the cut face to minimize the detrimental effect of potential sluffing.

On a small portion of the disturbed area it may be necessary to utilize hand labor to construct small terraces, approximately 18 in. benches on a contour of 4 ft intervals. These terraces are constructed utilizing a "Region 6" hand tool and would only be

implemented in areas deemed hazardous for equipment and or in sensitive areas such as along Bear Creek where down cast material could adversely effect the drainage. This, in turn, decreases the impact on adjacent watersheds and improves quality of surface waters.

Those areas which are terraced provide a more favorable ecosystem than that of an equivalent slope. It facilitates better utilization of grasses and forage for grazing animals; to some degree it modifies climate in that severity of wind and weather is somewhat diminished. Also, the cut face acts in much the same as a snow drift fence does in trapping and causing small areas of snow

The need to terrace all of the steeper slopes within the mine plan area currently is not anticipated. Erosion control measures to be employed, will be specific to each situation. Mulching, silt fences, straw, etc. will be used as described in Section 7.2.6, to reduce and limit rainfall/erosion impacts.

3.6.4.4 Soil Redistribution and Stabilization

Soil redistribution and stabilization will be completed as defined in Section 8.8 of this plan. Co-Op will exercise care to guard against erosion during and after application of topsoil and will employ the necessary measures to ensure the stability of topsoil on graded slopes.

In addition to the vegetative stabilization discussed in Section 3.6.5, Revegetation Plan, physical stabilization of the soil is also planned. The specific methods to be implemented are defined in Chapter 8 and 9.

3.6.5 Revegetation Plan

All disturbed areas will be planted and revegetated during the first appropriate season following grading and topsoil redistribution procedures and will include, the addition of remedial soil treatments. A permanent, diverse vegetative cover, using approved seed mixes listed in Chapter 9, Section 9.5, will be established on all reclaimed areas. See Section 9.4 for full reclamation revegetation plan.

The operator will submit a detailed revegetation plan in the last Five-Year Permit Renewal prior to reclamation. The plan will include detailed map(s) of sufficient scale to show exact areas and methods of revegetation (i.e., drill seeding, terraces, netting, etc...) based on the best available technology and final mine site conditions.

Gently sloping and flat areas will be seeded with a drill seeder. Steeper slopes will be seeded with a hydroseeder or by hand. Many shrubs and all trees will be planted by hand setting to ensure a permanent plant cover.

Seedlings will be planted in Apr - May or Sept - Oct depending on availability and sequence of completion, plants will be grouped to provide wildlife cover. Spacing within the group is defined in Chapter 9 and will be correlated to the reference area.

3.6.5.1 Mulching

On all reclaimed areas a wood fiber mulch will be used to enhance moisture retention required for seed germination. Tackifier will be added to the mulch to help it adhere to the soil. A min of 60 lbs tackifier/ton fiber will be applied, with steeper sloping areas requiring more as shown in Section 9.5. Some steeply sloped areas may require erosion control matting. These areas will be noted on the detailed revegetation plan and maps to be submitted in the last Five-Year Permit Renewal prior to reclamation.

3.6.5.2 Irrigation

Since the species used for reclamation are known for their survival characteristics, it is felt that artificial application of additional water will not be required. Should lower than average precipitation or irregularities in distribution of precipitation occur following the initiation of reclamation procedures which temporarily precludes vegetation establishment, a preferred course of action would be to replant problem areas.

3.6.8 Reclamation Bonding

BOND

CO-OP MINING COMPANY

BEAR CANYON MINE

ACT/015/025, EMERY COUNTY, UTAH

3.6.8.1 Detailed Timetable for Completion of Major Reclamation Processes

The following schedule of reclamation is proposed to be initiated within 90 days (weather permitting) of final abandonment of the mining operation:

	<u>Actual Time</u>
a. Seal Portal - 1 week	1 week
b. Remove Structures - 2.5 weeks	3.5 weeks
c. Soil Placement (backfilling and grading)	
1. Upper Pad - 1 weeks (including road)	4.5 weeks
2. Channel Restoration - 1.5 weeks	6 weeks
3. Lower Pad and Diversions - 1.5 weeks (including road)	7.5 weeks
d. Seed-bed Material and Handling - 1 week	8.5 weeks
e. Reseeding and Fertilizing - 1 week	9.5 weeks
f. Mulching - .5 week	10 weeks
g. Protective Fencing - 2 weeks (concurrently)	10 weeks

Summary of Reclamation Cost Estimate

a.	Seal Portals and Backfill	\$ 35,000.00
b.	Removal Structures	\$ 32,595.00
c.	Solid Waste Removal	\$ 2,451.44
d.	Soil Placement (backfilling and grading)	\$ 42,760.00
e.	Channel Restoration	\$ 16,892.24
f.	Drill Seeding	\$ 7,128.00
g.	Hydroseeding	\$ 11,669.00
h.	Riparian Area Seeding	\$ 2,210.00
i.	Baseball Park Seeding	\$ 3,495.00
j.	Retaining Wall Removal	\$ 442.66
k.	Borehole Plugging	\$ 343.40
l.	Maintenance and Monitoring of Subsidence, Vegetation and Erosion (10 yr bond liability period)	\$ 19,460.00
m.	Hydrology Monitoring (10 yr bond liability period)	\$ 23,072.00
n.	Supervision (10 weeks)	\$ 9,640.00
o.	Mobilization and Demobilization	<u>\$ 2,500.00</u>
		\$209,658.74
	10 pct Contingency	<u>\$ 20,965.87</u>
	(1990 dollars)	\$230,624.61

Escalated Values

1991 -	\$234,868
1992 -	\$239,190
1993 -	\$243,591
1994 -	\$248,073
1995 -	\$252,637

Escalation Factor

1.84%	(actual)
1.84%	(est)

An irrevocable letter of credit was posted in July 1990 for \$290,000 by Co-Op (C. W. Mining Co.).

NOTE: Section 3.6.8.3 modification and adjustment

Reclamation Costs (cont)

Cross Conveyor

Labor - 3 men x 176.80/day x 1 day	\$	530.40
Equipment (hauling) truck + operator x 6 hrs x 70.48/hr		422.88
loader + operator x 8 hrs x \$118.30 (950B - 2 1/2 cu. yd. bucket)		946.40
Crane - 2 hrs. @ \$101.70/hr.		<u>203.40</u>
Subtotal	\$	2,103.08

c. Waste Removal

Labor - 2 men x \$176.80/day x 4 days	\$	1,414.40
Hauling - truck + operator x 8 hrs x \$70.48/hr		563.84
Loader (+ operator) - 4 hrs x \$118.30		<u>473.20</u>
SUBTOTAL	\$	2,451.44

d. Soil Placement and Seed-Bed Material & Handling

SUBTOTAL \$ 42,760.00

e. Channel Restoration (pulling culverts, reshaping channel, rip-rap and gabion structures)

Backhoe + operator x \$221.33 x 48 hrs	\$	10,623.84
Labor - 4 men x \$176.80/day x 4 days		1,414.40
Cat x 1 day @ \$124.50/hr		996.00
<i>Handwritten</i> Gabion Structures @ \$63.00/sy (53.3 sy)		3,358.00
Miscellaneous Rip-rap- \$500.00		<u>500.00</u>
SUBTOTAL	\$	16,892.24

f. Drill Seeding (Section 9.5)

8 acres x \$ 891.00/acre		
SUBTOTAL	\$	7,128.00

g. Hydroseeding (Section 9.5)

7 acres x \$1,667.00/acre		
SUBTOTAL	\$	11,669.00

h. Riparian Area Planting (Section 9.5)

1 acre x \$2,210.00/acre		
SUBTOTAL	\$	2,210.00

and siltation, air and water pollution, and damage to public or private property.

The road is located along the canyon floor above the stream, and along the stable slope leading to the portals. The overall grade of the road does not exceed 1:V:10h (10 pct) and the maximum pitch grade does not exceed 1V:6.5h (15 pct). The horizontal alignment is consistent with the existing topography and with the volume, speed, and weight of anticipated traffic.

As mentioned earlier, the initial road was constructed under pre-law conditions, using the cut/fill side-cast method. A stability analyses was performed on the road by Dames & Moore in 1981 (Appendix 3-F). Their conclusion was that the Bear Canyon Portal Access Road has a stability factor of safety of a minimum of 1.43, and ranges upward to 2.15.

There are 3 other Primary roads within the Permit Area. Following is a description of each of these:

- a. Road to Sediment Pond A. This road is 430 ft long and was constructed to allow access to the Sediment Pond and to facilitate cleaning of the drainage to the pond. The road is in actuality the disturbed drainage ditch to sediment "Pond A", and is used infrequently to clean sediment from "Pond A". The road has an overall slope of approximately 4.0 pct and does not exceed 15 pct at any point. The horizontal alignment

is consistent with the existing topography and with the volume, speed, and weight of anticipated traffic.

b. Road to the Coal Preparation Facility. This road is 600 ft long, and was constructed to provide access to the Coal Preparation Facility. The road has an overall slope of approximately 10.0 pct, and does not exceed 15 pct at any point. The horizontal alignment is consistent with the existing topography and with the volume speed, and weight of the anticipated traffic.

c. Bathhouse Road. This road is 160 ft long, and provides access to the bathhouse. The road has an overall slope of approximately 3.0 pct, and does not exceed 15 pct at any point. The horizontal alignment is consistent with the existing topography and with the volume, speed, and weight of the anticipated traffic.

Ditches and culverts have been added to the roads to control run-off and safely pass the run-off from a 10-year, 24-hour precipitation event. (see Plates 3-1 and 3-5). Ditches shall be maintained at a minimum depth of 1.8 ft, and at least 30 in. of headwater depth will be maintained at the inlet of the 18 in. culverts. Culverts are fitted with trash racks to prevent plugging, and buried and compacted a minimum of 30 in. to prevent crushing. In areas where velocities of run-off exceed 5 fps,

erosion protection such as straw bales at 100 ft intervals or 6 in. median diameter rip rap on a bed of 2 in. gravel/sand 6 in. thick shall be maintained. Rock or concrete headwalls shall be provided at the inlet to all culverts, and rip rap or other erosion protection shall be provided at the outlet.

The roads are surfaces with 4 in. of $-3/4$ gravel, and is maintained in such a manner that the approved design standards are met throughout the life of the facility. Damage to the roads from use or weather events shall be promptly repaired.

These roads shall be removed upon completion of the mining operation. The timing and procedure of removal and reclamation is discussed in detail under the Backfilling and Grading Plan in Sec. 3.6.4.

Ancillary Roads

The only Ancillary Road on the permit area is a jeep trail that was constructed pre-law, probably as a cattle trail. This road is shown on Plate 2-2, Surface Facilities Map. The road is blocked off and is not used; therefore, no maintenance or reclamation plan is proposed for this trail.

TOXIC MATERIALS & HANDLING

Any material that is contaminated with coal, as determined by visual observation, will be placed against the highwall and buried beneath a min of 2 ft of fill material during reclamation. Material that is contaminated with oil or grease or any other potentially acid or toxic matter, as determined by visual means, will be placed against the highwall and covered with a min of 4 ft fill, top soiled, and reclaimed. Interim isolation of such material will be by use of berms created by a backhoe or loader.

Since the roof material from the mine has shown a high SAR value, any roof rock that is stored on the surface will be isolated by a berm as long as it is stored on site. During reclamation, this material will be placed against the top of the highwall and covered with a minimum of 4 ft of material, covered with required plant growth medium and revegetated.

Covering Coal and Acid and Toxic Forming materials

The pH, acid-base potential, texture and electrical conductivity of these materials must be included on the date reported.

Co-Op reply. Co-Op submitted a sample to CT&E testing for this data and the results are included attached. Co-Op will commit to removing any and all such material or disposing of them in a manner

METHODOLOGY

Phase 1 - Earth Moving

The pad down slopes will be brought back to a reasonable configuration by implementation of a crawler tractor. The actual method will involve smooth contouring of the existing soil and walking the crawler up and down the slope attempting to minimize compaction while at the same time creating small indentations by the grouser on the track. This methodology creates an enhanced micro-climate for the establishment of seed and guarantees sufficient compaction as to assure integrity and stability of embankment and prohibit failure.

Phase 2 - Seeding and Mulching

The entire disturbed area will be hydroseeded during the mid fall season with a Target completion date of 15 October. The seed mix and rate of application for interim reclamation is shown in Table 3G-1. Hydro-seeding and mulching will be carried out in conjunction with the earth work of Phase 1. All hydroseeded or hand seeded areas will be lightly raked to insure adequate soil/seed contact. Recommendations for the hydroseeding and mulching operation are shown in Table 3G-2.

The post-mining land uses will be grazing, recreation, wildlife and mineral. Portals will be closed and concrete foundations will be buried with fill material.

Disturbed areas will be scarified, sloped, topsoiled and seeded or planted as described in this plan, before the next growing season. The site will be revegetated with a mixture of grasses, forbs, brush and trees as agreed upon with the appropriate land management agencies. Reclaimed areas will be maintained during the ten year liability period. Seed will be planted with the best techniques available at that time (Chapter 9).

Proposed access roads, to the mine portals, will be reclaimed and revegetated. This will accomplish a dual purpose of controlling runoff and revegetating the hillsides with vegetation comparable to existing growth.

The initial step in the reclamation plan is to seal all large-diameter openings by backfilling these openings with non-combustible material, (earth & small rock) adjacent to the portals. The seals will be designed such that mine drainage, if any, will not enter surface water bodies. For a more detailed description of the dealing of openings, see Section 3.6.3.1, Sealing of mine Openings, Drill Holes, Wells, etc.

The next step in reclamation would be the removal of all

surface structures, equipment and road blacktop. Once this has been accomplished, all solid waste generated in the abandonment operation will be collected and removed from the reclaiming areas. Additional information concerning this aspect of the reclamation plan is present in Section 3.6.3.2, Removal of Surface Structures.

Backfilling of the subterranean portion of the silos, holes and depressions will be the next reclamation activity, Once the backfilling is completed, the disturbed areas will be graded and recontoured. A detailed description of these reclamation phase is found in Section 3.6.4, Backfilling and Grading.

Reclamation Timetable. A suitably permanent and diverse vegetation cover to be established on all affected areas of land.

Land reclamation will take place as soon as possible after surface disturbance. All cut and fill slopes resulting from construction of access roads and coal yards will be stabilized and revegetated at the first seasonal opportunity. Areas occupied by support facilities such as roads, office buildings, shops, coal handling structures and conveyors will not be reclaimed until conclusion of the mining operations. Demolition and removal of structures should commence in March, April 2012. Portal seals and grading should commence in June and be completed by September 2012. Drill and hydroseeding and stream enhancement work should be completed by 30 Oct. The area should be monitored during July.

2.2.2 Holders of Leasehold Interest in Surface Area and Coal Rights

The names and addresses of holders of record in Leasehold interest are listed below: Coal mining lease by and between Co-Op Mining Co. and Peabody Coal Co., executed 1 December 1975 (Plate 2-1).

T16S, R7E SLBM	Sec. 14 SW 1/4, SE 1/4
	Sec. 23 E1/2, E1/2 W1/2
	Sec. 24 All West of N-S Fault
	Sec. 25 All West of N-S Fault
(Fed. Lease U024316)	Sec. 13 W 1/2 W 1/2
	Sec. 14, E 1/2 NW 1/4, NE 1/4
(Fed. Lease U024318)	Sec. 26 E 1/2 NW 1/4

The right to mine and remove from, and use for purposes incident to mining, including access roads, camp facilities, surface operations, storage of coal, and other activities. Also unrestricted use of all access roads leading to and from property. Lease is binding on the successors to the parties of the lease. Co-Op also holds Federal Lease U024316 (See Appendix 2-F, Plate 2-1).

2.2.3 Purchase of Record Under a Real Estate Contract for Surface Area Coal

See Appendix 2-B Title Insurance Policy and Property Title.

2.2.4 Operator, if Different from Applicant

Same as above.

2.5.1 Waiver of Owners of Nearby Occupied Dwellings

Applicant does not propose to conduct or locate surface facilities within 300 feet of an occupied dwelling.

2.6 PERMIT TERM INFORMATION - ANTICIPATED FOR EACH PHASE

2.6.1 Starting Date

The mine started construction in 1981 and was in production by late fall of 1981. Mining in the 160 acre Lease addition area is proposed to begin in the spring of 1989 (Appendix 3-K).

2.6.2 Termination Dates

Termination dates anticipated for each phase of mining are nebulous at this time although a detailed estimate of production and reserves are included in the Geology Section and a projection of 22-years appears realistic (from 1990). The final termination date for the mining operation is expected to be 2012.

2.6.3 Numbers or Surface Acres Affected

The anticipated disturbance by the Bear Canyon Mine totals about 16 acres. Plate 2-1 shows potential property expansion and future facilities of the mine.

Form 4-696
(October 1955)

255-012

UNITED STATES
DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Land Office
Post Office Box No. 777
Salt Lake City 10, Utah
Office Salt Lake City, Utah
Serial No. Utah 024316

LEASE OF COAL LANDS UNDER THE ACT OF
FEBRUARY 25, 1920, AS AMENDED

This lease, entered into on May 1, 1958, by the United States of America, the lessor, through the Bureau of Land Management, and Huntington Corporation, Box 1001, Palo Alto, California

the lessee, pursuant and subject to the terms and provisions of the act of February 25, 1920 (41 Stat. 437), as amended, hereinafter referred to as the act, and to all reasonable regulations of the Secretary of the Interior now in force which are made a part hereof,

WITNESSETH:

Section 1. Rights of lessee.--The lessor, in consideration of the rents and royalties to be paid and the conditions to be observed as hereinafter set forth, does hereby grant and lease to the lessee the exclusive right and privilege to mine and dispose of all the coal in the following-described tracts of land, situated in the State of Utah

- T. 16 S., R. 7 E., SL Mer, Utah
- Sec. 10: N¹/₂, E¹/₂, S¹/₂, S¹/₂
- Sec. 11: All
- Sec. 12: W¹/₂
- Sec. 13: W¹/₂
- Sec. 14: E¹/₂, E¹/₂

containing 1,800 acres, more or less, together with the right to construct all such works, buildings, plants, structures, and appliances as may be necessary and convenient for the mining and preparation of the coal for market, the manufacture of coke or other products of coal, the housing and welfare of employees, and, subject to the conditions herein provided, to use so much of the surface as may reasonably be required in the exercise of the rights and privileges herein granted.

Sec. 2. In consideration of the foregoing, the lessee hereby agrees:

- (a) Bond.--To maintain the bond furnished upon the issuance of this lease, which bond is conditioned upon compliance with all the provisions of the lease, and to increase the amount of or furnish such other bond as may be required.
- (b) Rental.--To pay the lessor annually, in advance, for each acre or part thereof covered by this lease, beginning with the date hereof, the following rentals: 25 cents for the first year, 50 cents for the second, third, fourth, and fifth years, respectively, and \$1 for the sixth and each succeeding year during the continuance of the lease, such rental for any year to be credited against the first royalties as they accrue under the lease during the year for which the rental was paid.
- (c) Royalty.--To pay the lessor a royalty of 15 cents on every ton of 2,000 pounds of coal mined during the first 20 years succeeding the execution of this lease. Royalties shall be payable quarterly within 30 days from the expiration of the quarter in which the coal is mined.

(d) Minimum production.--Beginning with the sixth year of the lease, except when operations are interrupted by strikes, the elements, or casualties not attributable to the lessee, or unless on application and satisfactory proof, operations shall be suspended when market conditions are such that the lessee cannot operate except at a loss or suspended for the other reasons specified in section 39 of the act, to mine coal each year and pay a royalty thereon to a value of \$1 an acre or fraction thereof. Operations under this lease shall be continuous except in the circumstances described or unless the lessee shall pay a royalty, less rent, on such minimum amount of the leased deposits, for one year in advance, in which case operations may be suspended for that year.

(e) Payments.--Unless otherwise directed by the lessor, to make rental, royalty, or other payments to the Regional Mining Supervisor of the United States Geological Survey of the region in which the leased lands are situated. All remittances must be made payable to the United States Geological Survey.

(f) Plats, reports, maps.--At such times and in such form as the lessor may prescribe, to furnish a plat showing development work and improvements on the leased lands and a report with respect to stockholders, investment, depreciation, and costs. To furnish in such form as the lessor may prescribe, within 30 days from the expiration of each quarter a report covering such quarter, certified by the superintendent of the mine, or by such other agent having personal knowledge of the facts as may be designated by the lessee for such purpose, showing the amount of leased deposits mined during the quarter, the character and quality thereof, amount of its products and byproducts disposed of and price received therefor, and amount in storage or held for sale. To keep and prepare maps of the leased lands in accordance with the regulations in 30 CFR, Part 211.

(g) Weights.--To determine accurately the weight or quantity and quality of all leased deposits mined, and to enter accurately the weight or quantity and quality thereof in due form in books to be kept and preserved by the lessee for such purposes.

(h) Inspection.--To permit at all reasonable times (1) inspection by any duly authorized officer of the Department, of the leased premises and all surface and underground improvements, works, machinery, equipment, and all books and records pertaining to operations and surveys or investigations under this lease; and (2) the lessor to make copies of and extracts from any or all books and records pertaining to operations under this lease, if desired.

(i) Assignment of lease or interest therein.--To file for approval with the office prescribed in the regulations, within 90 days from the date of final execution, any assignment, sublease, or transfer made of this lease, whether by direct assignment, working agreement, transfer of royalty interest, or otherwise. Such instrument will take effect the first day of the month following its final approval by the Bureau of Land Management, or if the assignee requests, the first day of the month of the approval.

(j) Nondiscrimination.--In connection with the performance of work under this lease, the lessee agrees not to discriminate against any employee or applicant for employment because of race, religion, color or national origin. The aforesaid provision shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The lessee agrees to post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of the nondiscrimination clause. The lessee further agrees to insert the foregoing provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials.

(k) Lands disposed of with the coal deposits reserved to the United States.--If the lands embraced herein have been or shall hereafter be disposed of under laws reserving to the United States the deposits of coal therein, to comply with all conditions as are or may hereafter be provided by the laws and regulations reserving such coal.

(l) Operations, wages, freedom of purchase.--To comply with the operating regulations (30 CFR, Part 211), to exercise reasonable diligence, skill, and care in the operation of the property, and to carry on all operations in accordance with approved methods and practices as provided in the operating regulations, having due regard for the prevention of injury to life, health or property, and of waste or damage to any water or mineral deposits; to fairly and justly weigh or measure the coal mined by each miner; to pay all wages due miners and employees, both above and below ground, at least twice each month in lawful money of the United States; to accord all miners and employees complete freedom of purchase; to restrict the workday to not exceeding eight hours in any one day for underground workers, except in cases of emergency; to employ no boy under the age of sixteen and no girl or woman, without regard to age, in any mine below the surface; unless the laws of the State otherwise provide, in which case the State laws control.

(m) Taxes.--To pay when due, all taxes lawfully assessed and levied under the laws of the State or the United States upon improvements, output of mines, or other rights, property, or assets of the lessee.

(n) Overriding royalties.--Not to create, by assignment or otherwise, an overriding royalty interest in excess of 50 percent of the rate of royalty first payable to the United States under this lease or an overriding royalty interest which when added to any other outstanding overriding royalty interest exceeds that percentage, excepting, that where an interest in the leasehold or in an operating agreement is assigned, the assignor may retain an overriding royalty interest in excess of the above limitation if he shows to the satisfaction of the Bureau of Land Management, that he has made substantial investments for improvements on the land covered by the assignment.

(o) Delivery of premises in case of forfeiture.--In case of forfeiture of this lease, to deliver up to the lessor in good order and condition the land leased, including all buildings, and underground timbering and such other supports and structures as are necessary for the preservation of the mine or deposit.

Sec. 3. The lessor expressly reserves:

(a) Rights reserved.--The right to permit for joint or several use such easements or rights-of-way, including easements in tunnels upon, through, or in the land leased, occupied, or used as may be necessary or appropriate to the working of the same or other lands containing the deposits described in the act, and the treatment and shipment of the products thereof by or under authority of the Government, its lessees or permittees, and for other public purposes.

(b) Disposition of surface.--The right to lease, sell, or otherwise dispose of the surface of the leased lands under existing law or laws hereafter enacted, insofar as said surface is not necessary for the use of the lessee in the extraction and removal of the coal therein, or to dispose of any resource in such lands which will not unreasonably interfere with operations under this lease.

(c) Monopoly and fair prices.--Full power and authority to promulgate and enforce all the provisions of section 30 of the act to insure the sale of the production of said leased lands to the United States and to the public at reasonable prices, to prevent monopoly, and to safeguard the public welfare.

(d) Readjustment of terms.--The right reasonably to readjust and fix royalties payable hereunder and other terms and conditions at the end of 20 years from the date hereof and thereafter at the end of each succeeding 20-year period during the continuance of this lease unless otherwise provided by law at the time of the expiration of any such period. Unless the lessee files objections to the proposed terms or a relinquishment of the lease within 30 days after receipt of the notice of proposed terms for a 20-year period, he will be deemed to have agreed to such terms.

(e) Waiver of conditions.--The right to waive any breach of the conditions contained herein, except the breach of such conditions as are required by the act, but any such waiver shall extend only to the particular breach so waived and shall not limit the rights of the lessor with respect to any future breach; nor shall the waiver of a particular cause of forfeiture prevent cancellation of this lease for any other cause, or for the same cause occurring at another time.

Sec. 4. Relinquishment of lease.--Upon a satisfactory showing that the public interest will not be impaired, the lessee may surrender the entire lease or any legal subdivision thereof. A relinquishment must be filed in duplicate in the appropriate land office. Upon its acceptance it shall be effective as of the date

it is filed, subject to the continued obligation of the lessee and his surety to make payment of all accrued rentals and royalties and to provide for the preservation of any mines or productive works or permanent improvements on the leased lands in accordance with the regulations and terms of the lease.

Sec. 5. Protection of the surface, natural resources, and improvements.-- The lessee agrees to take such reasonable steps as may be needed to prevent operations from unnecessarily: (1) Causing or contributing to soil erosion or damaging any forage and timber growth thereon; (2) polluting the waters of springs, streams, wells, or reservoirs; (3) damaging crops, including forage, timber, or improvements of a surface owner; or (4) damaging range improvements whether owned by the United States or by its grazing permittees or lessees; and upon any partial or total relinquishment or the cancellation or expiration of this lease, or at any other time prior thereto when required by the lessor and to the extent deemed necessary by the lessor, to fill any sump holes, ditches and other excavations, remove or cover all debris, and, so far as reasonably possible, restore the surface of the leased land to its former condition, including the removal of structures as and if required. The lessor may prescribe the steps to be taken and restoration to be made with respect to lands of the United States and improvements thereon.

Sec. 6. Removal of equipment, etc., on termination of lease.-- Upon termination of this lease, by surrender or forfeiture, the lessee shall have the privilege at any time within a period of 90 days thereafter of removing from the premises all machinery, equipment, tools and materials, other than underground timbering placed by the lessee in or on the leased lands, which are not necessary for the preservation of the mine. Any materials, tools, appliances, machinery, structures, and equipment, subject to removal as above provided, which are allowed to remain on the leased lands shall become the property of the lessor on expiration of the 90-day period or such extension thereof as may be granted because of adverse climatic conditions, but the lessee shall remove any or all of such property where so directed by the lessor.

Sec. 7. Proceedings in case of default.-- If the lessee shall not comply with any of the provisions of the act or the regulations thereunder or default in the performance or observance of any of the provisions of this lease, and such default shall continue for a period of 30 days after service of written notice thereof by the lessor, the lessor may institute appropriate proceedings in a court of competent jurisdiction for the forfeiture and cancellation of this lease as provided in section 31 of the act (30 U.S.C., sec. 188). If the lessee fails to take prompt and necessary steps to prevent loss or damage to the mine, property, or premises, or danger to the employees, the lessor may enter on the premises and take such measures as may be deemed necessary to prevent such loss or damage or to correct the dangerous or unsafe condition of the mine or works thereof, which shall be at the expense of the lessee. However, the lessee shall not be held responsible for delays or casualties occasioned by causes beyond the lessee's control.

Sec. 8. Heirs and successors in interest.-- Each obligation hereunder shall extend to, and be binding upon, and every benefit hereof shall inure to, the heirs, executors, administrators, successors, or assigns of the respective parties hereto.

Sec. 9. Unlawful interest.-- No Member of, or Delegate to, Congress or Resident Commissioner, after his election or appointment, or either before or after he has qualified and during his continuance in office, and no officer, agent, or employee of the Department of the Interior, except as provided in 43 CFR 7.4(a)(1), shall be admitted to any share or part in this lease or derive any benefit that may arise therefrom; and the provisions of section 3741 of the Revised Statutes of the United States, as amended (41 U.S.C., sec. 22), and sections 431, 432, and 433, title 18, U.S. Code, relating to contracts, enter into and form a part of this lease so far as the same may be applicable.

IN WITNESS WHEREOF:

James L. French
Thomas A. Perry
(Witnesses to signature of lessee)

THE UNITED STATES OF AMERICA,
By [Signature]
(Signing Officer) APR 14 1958
Manager Land Office (Date)
(Title)

HUNTINGTON CORPORATION
(Lessee's signature)
By Laurence C. [Signature]
(Lessee's signature)
Laurence C. [Signature]
(If this lease is executed by a corporation, it must bear the corporate seal)
By [Signature] 7/90
Frederick J. [Signature]

1952
UNITED STATES
DEPARTMENT OF THE INTERIOR
Bureau of Land Management

STIPULATION FOR LANDS UNDER JURISDICTION OF DEPARTMENT OF AGRICULTURE

The lands embraced in this lease (permit) issued under the Mineral Leasing Act of February 25, 1920 (41 Stat. 437, 30 U.S.C., 1946 ed., sec. 181 et seq.), as amended, the Mineral Leasing Act for Acquired Lands of August 7, 1947 (61 Stat. 913, 30 U.S.C., 1946 ed., Supp. III, sec. 351 et seq.) the act of September 1, 1949 (63 Stat. 683, 30 U.S.C., 1946 ed., Supp. III, sec. 192c) the act of June 30, 1950 (64 Stat. 311, 16 U.S.C., 1946 ed., Supp. IV, sec. 508(b)) or under the authority of any of the acts cited in section 402 of the President's Reorganization Plan No. 3 of 1946 (60 Stat. 1097, 5 U.S.C. 1946 ed., sec. 133 y-16, note) being under the jurisdiction of the Secretary of Agriculture, the lessee (permittee) hereby agrees:

(1) To conduct all operations authorized by this lease (permit) with due regard for good land management, not to cut or destroy timber without first obtaining permission from the authorized representative of the Secretary of Agriculture, and to pay for all such timber cut or destroyed at the rates prescribed by such representative; to avoid unnecessary damage to improvements, timber, crops, or other cover; unless otherwise authorized by the Secretary of Agriculture, not to drill any well, carry on operations, make excavations, construct tunnels, drill, or otherwise disturb the surface of the leased (permitted) lands within 200 feet of any building standing on the leased (permitted) lands and whenever required in writing by the authorized representative of the Secretary of Agriculture to fence or fill all sump holes, ditches and other excavations, remove or cover all debris, and so far as reasonably possible, restore the surface of the leased (permitted) lands to their former condition, including the removal of structures as and if required, and when required by such representative to bury all pipelines below plow depth.

(2) To do all in his power to prevent and suppress forest, brush or grass fires on the leased (permitted) land and in its vicinity, and to require his employees, contractors, subcontractors, and employees of contractors or subcontractors to do likewise. Unless prevented by circumstances over which he has no control, the lessee (permittee) shall place his employees, contractors, subcontractors, and employees of contractors and subcontractors employed on the leased (permitted) land at the disposal of any authorized officer of the Department of Agriculture for the purpose of fighting forest, brush, or grass fires on or originating on the leased (permitted) lands or on adjacent areas or caused by the negligence of the lessee (permittee) or his employees, contractors, subcontractors and employees of contractors and subcontractors, with the understanding that payment for such services shall be made at rates to be determined by the authorized representative of the Secretary of Agriculture, which rates shall not be less than the current rates of pay prevailing in the vicinity for services of a similar character: Provided, that if the lessee (permittee), his employees, contractors, subcontractors, or employees of contractors or subcontractors, caused or could have prevented the origin or spread of said fire or fires, no payment shall be made for services so rendered.

During periods of serious fire danger to forest, brush, or grass, as may be specified by the authorized representative of the Secretary of Agriculture, the lessee (permittee) shall prohibit smoking and the building of camp and lunch fires by his employees, contractors, subcontractors, and employees of contractors or subcontractors within the leased (permitted) area except at established camps, and shall enforce this prohibition by all means within his power: Provided, that the authorized representative of the Secretary of Agriculture may designate safe places where, after all inflammable material has been cleared away, campfires may be built for the purpose of heating lunches and where, at the option of the lessee (permittee), smoking may be permitted.

The lessee (permittee) shall not burn rubbish, trash or other inflammable materials except with the consent of the authorized representative of the Secretary of Agriculture and shall not use explosives in such a manner as to scatter inflammable materials on the surface of the land during the forest, brush, or grass fire season, except as authorized to do so on areas approved by such representative.

2F-7

7790

The lessee (permittee) shall build or construct such roads or do such clearing on the leased land as the authorized representative of the Secretary of Agriculture decides is essential for forest, brush, and grass fire prevention which is or may be necessitated by the exercise of the privileges authorized by this lease (permit) and shall maintain such roads at his headquarters or at the appropriate

(3) In the location, design, construction and maintenance of all authorized works, buildings, plants, waterways, roads, telegraph or telephone lines, pipelines, reservoirs, tanks, pumping stations, or other structures or clearances, the lessee (permittee) shall take such reasonable measures as may be deemed necessary to prevent or reduce to the minimum extent scarring and erosion of the land, pollution of the water resources and any damage to the watershed. Where construction, operation, or maintenance of any of the facilities on or connected with this lease (permit) causes damage to the watershed or pollution of the water resources, the lessee (permittee) agrees to repair such damage and to take such corrective measures to prevent further pollution or damage to the watershed as are deemed necessary by the authorized representative of the Secretary of Agriculture.

(4) To pay the lessor (permitter) or his tenant or the surface owner or his tenant, as the case may be, for any and all damage to or destruction of property caused by lessee's (permittee's) operations hereunder; to save and hold the lessor (permitter) or the surface owner or their tenants harmless from all damage or claims for damage to persons or property resulting from lessee's (permittee's) operations under this lease (permit).

(5) To recognize existing uses and commitments, in the form of Department of Agriculture grazing, timber cutting, and special use permits, water developments, ditch, road, trail, pipeline, telephone line, and fence rights-of-way and other similar improvements, and to conduct his operations so as to interfere as little as possible with the rights and privileges granted by these permits or with other existing uses.

(6) To install and maintain cattle guards to prevent the passage of livestock in any openings made in fences by the lessee (permittee) or his contractors to provide access to the lands covered by this lease (permit) for automotive and other equipment.

(7) If lessee (permittee) shall construct any camp on the land, such camp shall be located at a place approved by the authorized representative of the Secretary of Agriculture, and such representative shall have authority to require that such camp be kept in a neat and sanitary condition.

(8) To comply with all the rules and regulations of the Secretary of Agriculture governing the national forests or other lands under his jurisdiction which are embraced in this lease (permit).

(9) Unless otherwise authorized, prior to the beginning of operations to appoint and maintain at all times during the term of this lease (permit) a local agent upon whom may be served written orders or notices respecting matters contained in this stipulation, and to inform the authorized representative of the Secretary of Agriculture, in writing, of the name and address of such agent. If a substitute agent is appointed, the lessee (permittee) shall immediately so inform the said representative.

(10) To address all matters relating to this stipulation to Regional Forester, U. S. Forest Service, Forest Service Building, Ogden, Utah. at _____ who is the authorized representative of the Secretary of Agriculture, or to such other representative as may from time to time, be designated, provided that such designation shall be in writing and be delivered to the lessee (permittee) or his agent.

(11) If all or any part of the leased (permitted) lands lie within a municipal watershed or are, in the opinion of the authorized representative of the Secretary of Agriculture, primarily valuable for watershed protection, the lessee (permittee) shall reseed or otherwise restore the vegetative cover, as required by the authorized representative of the Secretary of Agriculture, for watershed protection and erosion prevention on any areas damaged because of the operation.

This lease authorizes mining by underground methods only.

No roads or tipple sites will be located on national forest lands without obtaining prior written approval of the forest supervisor.

HUNTINGTON CORPORATION
Lessee (Permittee)
Lawrence S. Duane
By: _____
Secretary

2F-8
By: *Frederick L. Anderson*
Frederick L. Anderson, President

7/90

UNITED STATES
DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Land Office
Post Office Box No. 777
Salt Lake City 10, Utah

Office Salt Lake City, Utah

Serial No. Utah 024318

LEASE OF COAL LANDS UNDER THE ACT OF
FEBRUARY 25, 1920, AS AMENDED

This lease, entered into on May 1, 1958, by the United States of America, the lessor, through the Bureau of Land Management, and Huntington Corporation, Box 1001, Palo Alto, California

the lessee, pursuant and subject to the terms and provisions of the act of February 25, 1920 (41 Stat. 437), as amended, hereinafter referred to as the act, and to all reasonable regulations of the Secretary of the Interior now in force which are made a part hereof,

WITNESSETH:

Section 1. Rights of lessee.—The lessor, in consideration of the rents and royalties to be paid and the conditions to be observed as hereinafter set forth, does hereby grant and lease to the lessee the exclusive right and privilege to mine and dispose of all the coal in the following-described tracts of land, situated in the State of Utah

T. 16 S., R. 7 E., 21 Mer, Utah

T. 16 S., R. 8 E., 21 Mer, Utah

Sec. 24: ~~SE1/4, E1/2~~

Sec. 19: Lots 2, 3, 4, ~~SW1/4, SE1/4~~, ~~E1/2~~

Sec. 25: ~~N1/2, SW1/4, W1/2, SE1/4~~, ~~SW1/4, NE1/4~~

Sec. 26: ~~E1/2~~

containing 820.39 acres, more or less, together with the right to construct all such works, buildings, plants, structures, and appliances as may be necessary and convenient for the mining and preparation of the coal for market, the manufacture of coke or other products of coal, the housing and welfare of employees, and, subject to the conditions herein provided, to use so much of the surface as may reasonably be required in the exercise of the rights and privileges herein granted.

Sec. 2. In consideration of the foregoing, the lessee hereby agrees:

(a) Bond.—To maintain the bond furnished upon the issuance of this lease, which bond is conditioned upon compliance with all the provisions of the lease, and to increase the amount of or furnish such other bond as may be required.

(b) Rental.—To pay the lessor annually, in advance, for each acre or part thereof covered by this lease, beginning with the date hereof, the following rentals: 25 cents for the first year, 50 cents for the second, third, fourth, and fifth years, respectively, and \$1 for the sixth and each succeeding year during the continuance of the lease, such rental for any year to be credited against the first royalties as they accrue under the lease during the year for which the rental was paid.

(c) Royalty.—To pay the lessor a royalty of 15 cents on every ton of 2,000 pounds of coal mined during the first 20 years succeeding the execution of this lease. Royalties shall be payable quarterly within 30 days from the expiration of the quarter in which the coal is mined.

(d) Minimum production.--Beginning with the sixth year of the lease, except when operations are interrupted by strikes, the elements, or casualties not attributable to the lessee, or unless on application and showing made, operations shall be suspended when market conditions are such that the lessee cannot operate except at a loss or suspended for the other reasons specified in section 39 of the act, to mine coal each year and pay a royalty thereon to a value of \$1 an acre or fraction thereof. Operations under this lease shall be continuous except in the circumstances described or unless the lessee shall pay a royalty, less rent, on such minimum amount of the leased deposits, for one year in advance, in which case operations may be suspended for that year.

(e) Payments.--Unless otherwise directed by the lessor, to make rental, royalty, or other payments to the Regional Mining Supervisor of the United States Geological Survey of the region in which the leased lands are situated. All remittances must be made payable to the United States Geological Survey.

(f) Plats, reports, maps.--At such times and in such form as the lessor may prescribe, to furnish a plat showing development work and improvements on the leased lands and a report with respect to stockholders, investment, depreciation, and costs. To furnish in such form as the lessor may prescribe, within 30 days from the expiration of each quarter a report covering such quarter, certified by the superintendent of the mine, or by such other agent having personal knowledge of the facts as may be designated by the lessee for such purpose, showing the amount of leased deposits mined during the quarter, the character and quality thereof, amount of its products and byproducts disposed of and price received therefor, and amount in storage or held for sale. To keep and prepare maps of the leased lands in accordance with the regulations in 30 CFR, Part 211.

(g) Weights.--To determine accurately the weight or quantity and quality of all leased deposits mined, and to enter accurately the weight or quantity and quality thereof in due form in books to be kept and preserved by the lessee for such purposes.

(h) Inspection.--To permit at all reasonable times (1) inspection by any duly authorized officer of the Department, of the leased premises and all surface and underground improvements, works, machinery, equipment, and all books and records pertaining to operations and surveys or investigations under this lease; and (2) the lessor to make copies of and extracts from any or all books and records pertaining to operations under this lease, if desired.

(i) Assignment of lease or interest therein.--To file for approval with the office prescribed in the regulations, within 90 days from the date of final execution, any assignment, sublease, or transfer made of this lease, whether by direct assignment, working agreement, transfer of royalty interest, or otherwise. Such instrument will take effect the first day of the month following its final approval by the Bureau of Land Management, or if the assignee requests, the first day of the month of the approval.

(j) Nondiscrimination.--In connection with the performance of work under this lease, the lessee agrees not to discriminate against any employee or applicant for employment because of race, religion, color or national origin. The aforesaid provision shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The lessee agrees to post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of the nondiscrimination clause. The lessee further agrees to insert the foregoing provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials.

(k) Lands disposed of with the coal deposits reserved to the United States.--If the lands embraced herein have been or shall hereafter be disposed of under laws reserving to the United States the deposits of coal therein, to comply with all conditions as are or may hereafter be provided by the laws and regulations reserving such coal.

(l) Operations, wages, freedom of purchase.--To comply with the operating regulations (30 CFR, Part 211), to exercise reasonable diligence, skill, and care in the operation of the property, and to carry on all operations in accordance with approved methods and practices as provided in the operating regulations, having due regard for the prevention of injury to life, health or property, and of waste or damage to any water or mineral deposits; to fairly and justly weigh or measure the coal mined by each miner; to pay all wages due miners and employees, both above and below ground, at least twice each month in lawful money of the United States; to accord all miners and employees complete freedom of purchase; to restrict the workday to not exceeding eight hours in any one day for underground workers, except in cases of emergency; to employ no boy under the age of sixteen and no girl or woman, without regard to age, in any mine below the surface; unless the laws of the State otherwise provide, in which case the State laws control.

(m) Taxes.--To pay when due, all taxes lawfully assessed and levied under the laws of the State or the United States upon improvements, output of mines, or other rights, property, or assets of the lessee.

(n) Overriding royalties.--Not to create, by assignment or otherwise, an overriding royalty interest in excess of 50 percent of the rate of royalty first payable to the United States under this lease or an overriding royalty interest which when added to any other outstanding overriding royalty interest exceeds that percentage, excepting, that where an interest in the leasehold or in an operating agreement is assigned, the assignor may retain an overriding royalty interest in excess of the above limitation if he shows to the satisfaction of the Bureau of Land Management, that he has made substantial investments for improvements on the land covered by the assignment.

(o) Delivery of premises in case of forfeiture.--In case of forfeiture of this lease, to deliver up to the lessor in good order and condition the land leased, including all buildings, and underground timbering and such other supports and structures as are necessary for the preservation of the mine or deposit.

Sec. 3. The lessor expressly reserves:

(a) Rights reserved.--The right to permit for joint or several use such easements or rights-of-way, including easements in tunnels upon, through, or in the land leased, occupied, or used as may be necessary or appropriate to the working of the same or other lands containing the deposits described in the act, and the treatment and shipment of the products thereof by or under authority of the Government, its lessees or permittees, and for other public purposes.

(b) Disposition of surface.--The right to lease, sell, or otherwise dispose of the surface of the leased lands under existing law or laws hereafter enacted, insofar as said surface is not necessary for the use of the lessee in the extraction and removal of the coal therein, or to dispose of any resource in such lands which will not unreasonably interfere with operations under this lease.

(c) Monopoly and fair prices.--Full power and authority to promulgate and enforce all the provisions of section 30 of the act to insure the sale of the production of said leased lands to the United States and to the public at reasonable prices, to prevent monopoly, and to safeguard the public welfare.

(d) Readjustment of terms.--The right reasonably to readjust and fix royalties payable hereunder and other terms and conditions at the end of 20 years from the date hereof and thereafter at the end of each succeeding 20-year period during the continuance of this lease unless otherwise provided by law at the time of the expiration of any such period. Unless the lessee files objections to the proposed terms or a relinquishment of the lease within 30 days after receipt of the notice of proposed terms for a 20-year period, he will be deemed to have agreed to such terms.

(e) Waiver of conditions.--The right to waive any breach of the conditions contained herein, except the breach of such conditions as are required by the act, but any such waiver shall extend only to the particular breach so waived and shall not limit the rights of the lessor with respect to any future breach; nor shall the waiver of a particular cause of forfeiture prevent cancellation of this lease for any other cause, or for the same cause occurring at another time.

Sec. 4. Relinquishment of lease.--Upon a satisfactory showing that the public interest will not be impaired, the lessee may surrender the entire lease or any legal subdivision thereof. A relinquishment must be filed in duplicate in the appropriate land office. Upon its acceptance it shall be effective as of the date

it is filed, subject to the continued obligation of the lessee and his surety to make payment of all accrued rentals and royalties and to provide for the preservation of any mines or productive works or permanent improvements on the leased lands in accordance with the regulations and terms of the lease.

Sec. 5. Protection of the surface, natural resources, and improvements.-- The lessee agrees to take such reasonable steps as may be needed to prevent operations from unnecessarily: (1) Causing or contributing to soil erosion or damaging any forage and timber growth thereon; (2) polluting the waters of springs, streams, wells, or reservoirs; (3) damaging crops, including forage, timber, or improvements of a surface owner; or (4) damaging range improvements whether owned by the United States or by its grazing permittees or lessees; and upon any partial or total relinquishment or the cancellation or expiration of this lease, or at any other time prior thereto when required by the lessor and to the extent deemed necessary by the lessor, to fill any sump holes, ditches and other excavations, remove or cover all debris, and, so far as reasonably possible, restore the surface of the leased land to its former condition, including the removal of structures as and if required. The lessor may prescribe the steps to be taken and restoration to be made with respect to lands of the United States and improvements thereon.

Sec. 6. Removal of equipment, etc., on termination of lease.-- Upon termination of this lease, by surrender or forfeiture, the lessee shall have the privilege at any time within a period of 90 days thereafter of removing from the premises all machinery, equipment, tools and materials, other than underground timbering placed by the lessee in or on the leased lands, which are not necessary for the preservation of the mine. Any materials, tools, appliances, machinery, structures, and equipment, subject to removal as above provided, which are allowed to remain on the leased lands shall become the property of the lessor on expiration of the 90-day period or such extension thereof as may be granted because of adverse climatic conditions, but the lessee shall remove any or all of such property where so directed by the lessor.

Sec. 7. Proceedings in case of default.-- If the lessee shall not comply with any of the provisions of the act or the regulations thereunder or default in the performance or observance of any of the provisions of this lease, and such default shall continue for a period of 30 days after service of written notice thereof by the lessor, the lessor may institute appropriate proceedings in a court of competent jurisdiction for the forfeiture and cancellation of this lease as provided in section 31 of the act (30 U.S.C., sec. 188). If the lessee fails to take prompt and necessary steps to prevent loss or damage to the mine, property, or premises, or danger to the employees, the lessor may enter on the premises and take such measures as may be deemed necessary to prevent such loss or damage or to correct the dangerous or unsafe condition of the mine or works thereof, which shall be at the expense of the lessee. However, the lessee shall not be held responsible for delays or casualties occasioned by causes beyond the lessee's control.

Sec. 8. Heirs and successors in interest.-- Each obligation hereunder shall extend to, and be binding upon, and every benefit hereof shall inure to, the heirs, executors, administrators, successors, or assigns of the respective parties hereto.

Sec. 9. Unlawful interest.-- No Member of, or Delegate to, Congress or Resident Commissioner, after his election or appointment, or either before or after he has qualified and during his continuance in office, and no officer, agent, or employee of the Department of the Interior, except as provided in 43 CFR 7.4(a)(1), shall be admitted to any share or part in this lease or derive any benefit that may arise therefrom; and the provisions of section 3741 of the Revised Statutes of the United States, as amended (41 U.S.C., sec. 22), and sections 431, 432, and 433, title 18, U.S. Code, relating to contracts, enter into and form a part of this lease so far as the same may be applicable.

IN WITNESS WHEREOF:

THE UNITED STATES OF AMERICA,

By *Carroll B. ...*
(Signing Officer) MAY 1 - 1953
Manager Land Office (Date)
(Title)

James B. ...
Thomas A. ...
(Witnesses to signature of lessee)

HUNTINGTON CORPORATION
(Lessee's signature)
By *Laurence G. Duerig*
(Lessee's signature)
Laurence G. Duerig, Secretary
(If this lease is executed by a corporation, it must bear the corporate seal)

UNITED STATES
DEPARTMENT OF THE INTERIOR
Bureau of Land Management

STIPULATION FOR LANDS UNDER JURISDICTION OF DEPARTMENT OF AGRICULTURE

The lands embraced in this lease (permit) issued under the Mineral Leasing Act of February 25, 1920 (41 Stat. 437, 30 U.S.C., 1946 ed., sec. 181 et seq.), as amended, the Mineral Leasing Act for Acquired Lands of August 7, 1947 (61 Stat. 913, 30 U.S.C., 1946 ed., Supp. III, sec. 351 et seq.) the act of September 1, 1949 (63 Stat. 683, 30 U.S.C., 1946 ed., Supp. III, sec. 192c) the act of June 30, 1950 (64 Stat. 311, 16 U.S.C., 1946 ed., Supp. IV, sec. 508(b)) or under the authority of any of the acts cited in section 402 of the President's Reorganization Plan No. 3 of 1946 (60 Stat. 1097, 5 U.S.C. 1946 ed., sec. 133 y-16, note) being under the jurisdiction of the Secretary of Agriculture, the lessee (permittee) hereby agrees:

(1) To conduct all operations authorized by this lease (permit) with due regard for good land management, not to cut or destroy timber without first obtaining permission from the authorized representative of the Secretary of Agriculture, and to pay for all such timber cut or destroyed at the rates prescribed by such representative; to avoid unnecessary damage to improvements, timber, crops, or other cover; unless otherwise authorized by the Secretary of Agriculture, not to drill any well, carry on operations, make excavations, construct tunnels, drill, or otherwise disturb the surface of the leased (permitted) lands within 200 feet of any building standing on the leased (permitted) lands and whenever required in writing by the authorized representative of the Secretary of Agriculture to fence or fill all sump holes, ditches and other excavations, remove or cover all debris, and so far as reasonably possible, restore the surface of the leased (permitted) lands to their former condition, including the removal of structures as and if required, and when required by such representative to bury all pipelines below plow depth.

(2) To do all in his power to prevent and suppress forest, brush or grass fires on the leased (permitted) land and in its vicinity, and to require his employees, contractors, subcontractors, and employees of contractors or subcontractors to do likewise. Unless prevented by circumstances over which he has no control, the lessee (permittee) shall place his employees, contractors, subcontractors, and employees of contractors and subcontractors employed on the leased (permitted) land at the disposal of any authorized officer of the Department of Agriculture for the purpose of fighting forest, brush, or grass fires on or originating on the leased (permitted) lands or on adjacent areas or caused by the negligence of the lessee (permittee) or his employees, contractors, subcontractors and employees of contractors and subcontractors, with the understanding that payment for such services shall be made at rates to be determined by the authorized representative of the Secretary of Agriculture, which rates shall not be less than the current rates of pay prevailing in the vicinity for services of a similar character: Provided, that if the lessee (permittee), his employees, contractors, subcontractors, or employees of contractors or subcontractors, caused or could have prevented the origin or spread of said fire or fires, no payment shall be made for services so rendered.

During periods of serious fire danger to forest, brush, or grass, as may be specified by the authorized representative of the Secretary of Agriculture, the lessee (permittee) shall prohibit smoking and the building of camp and lunch fires by his employees, contractors, subcontractors, and employees of contractors or subcontractors within the leased (permitted) area except at established camps, and shall enforce this prohibition by all means within his power: Provided, that the authorized representative of the Secretary of Agriculture may designate safe places where, after all inflammable material has been cleared away, campfires may be built for the purpose of heating lunches and where, at the option of the lessee (permittee), smoking may be permitted.

The lessee (permittee) shall not burn rubbish, trash or other inflammable materials except with the consent of the authorized representative of the Secretary of Agriculture and shall not use explosives in such a manner as to scatter inflammable materials on the surface of the land during the forest, brush, or grass fire season, except as authorized to do so or on areas approved by such representative.

The lessee (permittee) shall build or construct such roads or do such clearing on the leased land as the authorized representative of the Secretary of Agriculture decides is essential for forest, brush, and grass fire prevention which is or may be necessitated by the exercise of the privileges authorized by this lease (permit) and shall maintain such roads at his headquarters or at the appropriate location on the leased (permitted) land.

(3) In the location, design, construction and maintenance of all authorized ditches, buildings, plants, waterways, roads, telegraph or telephone lines, pipelines, reservoirs, tanks, pumping stations, or other structures or clearances, the lessee (permittee) shall do all things reasonably necessary to prevent or reduce to the fullest extent scarring and erosion of the land, pollution of the water resources and any damage to the watershed. Where construction, operation, or maintenance of any of the facilities on or connected with this lease (permit) causes damage to the watershed or pollution of the water resources, the lessee (permittee) agrees to repair such damage and to take such corrective measures to prevent further pollution or damage to the watershed as are deemed necessary by the authorized representative of the Secretary of Agriculture.

(4) To pay the lessor (permitter) or his tenant or the surface owner or his tenant, as the case may be, for any and all damage to or destruction of property caused by lessee's (permittee's) operations hereunder; to save and hold the lessor (permitter) or the surface owner or their tenants harmless from all damage or claims for damage to persons or property resulting from lessee's (permittee's) operations under this lease (permit).

(5) To recognize existing uses and commitments, in the form of Department of Agriculture grazing, timber cutting, and special use permits, water developments, ditch, road, trail, pipeline, telephone line, and fence rights-of-way and other similar improvements, and to conduct his operations so as to interfere as little as possible with the rights and privileges granted by these permits or with other existing uses.

(6) To install and maintain cattle guards to prevent the passage of livestock in any openings made in fences by the lessee (permittee) or his contractors to provide access to the lands covered by this lease (permit) for automotive and other equipment.

(7) If lessee (permittee) shall construct any camp on the land, such camp shall be located at a place approved by the authorized representative of the Secretary of Agriculture, and such representative shall have authority to require that such camp be kept in a neat and sanitary condition.

(8) To comply with all the rules and regulations of the Secretary of Agriculture governing the national forests or other lands under his jurisdiction which are embraced in this lease (permit).

(9) Unless otherwise authorized, prior to the beginning of operations to appoint and maintain at all times during the term of this lease (permit) a local agent upon whom may be served written orders or notices respecting matters contained in this stipulation, and to inform the authorized representative of the Secretary of Agriculture, in writing, of the name and address of such agent. If a substitute agent is appointed, the lessee (permittee) shall immediately so inform the said representative.

(10) To address all matters relating to this stipulation to Regional Forester, U. S. Forest Service, Forest Service Building, Ogden, Utah. at _____ who is the authorized representative of the Secretary of Agriculture, or to such other representative as may from time to time, be designated, provided that such designation shall be in writing and be delivered to the lessee (permittee) or his agent.

(11) If all or any part of the leased (permitted) lands lie within a municipal watershed, or are, in the opinion of the authorized representative of the Secretary of Agriculture, primarily valuable for watershed protection, the lessee (permittee) shall reseed or otherwise restore the vegetative cover, as required by the authorized representative of the Secretary of Agriculture, for watershed protection and erosion prevention on any areas damaged because of the operation.

This lease authorizes mining by underground methods only.

No roads or tipple sites will be located on national forest lands without obtaining prior written approval of the forest supervisor.

HUNTINGTON CORPORATION

Lessee (Permittee)

By Laurence G. Duerig
Laurence G. Duerig, Secretary

2F-14

By Frederick L. Anderson
Frederick L. Anderson, Forester

7/90

TABLE OF CONTENTS (cont)

3.5	ENVIRONMENTAL PROTECTION	37
3.5.1	<u>Preservation of Land Use</u>	37
3.5.1.1	Projected Impacts of Mining on Current and Future Land Use	
3.5.1.2	Control Measures to Mitigate Impacts	
3.5.2	<u>Protection of Human Values</u>	40
3.5.2.1	Projected Impact of Mining on Human Values, Historical and Cultural	
3.5.2.2	Control Measures to Mitigate Impacts	
3.5.3	<u>Protection of Hydrologic Balance</u>	41
3.5.3.1	Control Measures to Mitigate Impacts	
3.5.4	<u>Preservation of Soil Resources</u>	44
3.5.4.1	Projected Impacts of Mining on Soil Resources	
3.5.4.2	Control Measures to Mitigate Impacts	
3.5.5	<u>Protection of Vegetative Resources</u>	47
3.5.5.1	Projected Impacts of Mining on Vegetative Resources	
3.5.5.2	Mitigating Measures to be Employed to Reduce Impacts on Vegetative Resources	
3.5.5.3	Monitoring Procedures	
3.5.6	<u>Protection of Fish and Wildlife</u>	50
3.5.6.1	Projected Impacts of Mining on Fish and Wildlife	
3.5.6.2	Mitigating Measures to be Employed to Protect Fish and Wildlife	
3.5.6.3	Monitoring Procedures	
3.5.7	<u>Protection of Air Quality</u>	55
3.5.7.1	Projected Impacts of Mining Operation on Air Quality	
3.5.7.2	Mitigating Measures to be Employed to Control Air Pollutants	
3.5.7.3	Air Quality Monitoring Plan	
3.5.8	<u>Waste Disposal Plans (Spoils, Coal Processing Wastes, Mine Development Wastes, Non-coal Wastes, Removal Handling and Storage.</u> . . .	57

APPENDIXES

A	Existing Structures	3A-1
B	Culinary Water System	3B-1
C	Fee Property Lease Addition	3C-1
D	Road Reclamation Plan	3D-1
E	Toxic Materials & Handling	3E-1
F	Slope Stability Analysis	3F-1
G	Interim Reclamation Plan	3G-1
H	Renewable Resource Survey and Subsidence	3H-1
I	Blind Canyon Intake and Fan Portals	3I-1
J	Upper Bear Canyon Intake Portal and Emergency Escapeway	3J-1
K	Sediment Pond Material	3K-1

LIST OF FIGURES

3.4-1	Typical Panel Recovery	14
3.4-2	Typical Pillar Extraction	15
3.4-3	Coal and Geography Map, Hiawatha NE Quadrangle	23
3.4-4	Core Samples Measurements	24
3.4-5	Core Samples Measurements	25
3.4-6	Core Samples Measurements	26
3.6-1	Typical Portal Seal	65
3.6-2	Typical Slope Reclamation	70

LIST OF TABLES

3.4-1	Coal Reserves - Bear Canyon Mine	27
3.4-2	Sign Maintenance	31
3.4-3	Scheduled Sequence of Underground Activity	36

LIST OF PLATES

Plate 3-1	Cross Sections	Plate 3-4	Bear Canyon No.1 Mine
Plate 3-1a	Cross Sections	Plate 3-4a	Bear Canyon No.1 Mine
Plate 3-2	Post Mining Topography		(Hiawatha Seam)
Plate 3-3	Subsidence Map	Plate 3-5	Road Details

3.3.14 Total Area for Surface Disturbance During Permit Term

Total area of surface disturbance during the permit term is approx 16 acres. Individual areas are shown on Plate 3-2.

3.3.15 Additional Area for Surface Disturbance for Life of Mine

Surface disturbance in addition to what has already been disturbed is not anticipated.

3.3.16 Detailed Construction Schedule

Construction of coal handling and processing facilities began on 1 April 1981, and were largely completed by 1 Nov 1985. Construction of truck scale and caretaker dwelling was completed by 1 Dec 1985. Construction of shop complex began on 15 Aug 1983, and completed on 1 Oct 1985. Construction of the new bath house and road widening over Bear Creek began in the summer of 1990.

3.4 OPERATION

Co-Op started its mining operation through an existing mine in the Bear Canyon Seam and later extended into the Hiawatha Seam below. Access to the lower Hiawatha seam was made in the summer of 1986 through two new portals in the outcrop, and through a rock slope tunnel from the Bear Canyon seam. The following mining plans pertain to the existing operation in these two seams.

TABLE OF CONTENTS (cont.)

7.3	RECLAMATION HYDROLOGY	90
7.3.1	<u>Post-Mining Rehabilitation</u>	90
7.3.2	<u>Restoration of Natural Channels</u>	90
7.3.3	<u>Bear Creek Channel Reclamation</u>	92
7.3.4	<u>Sedimentation Ponds Reclamation</u>	94
7.4	REFERENCES	96

APPENDIXES

A	Drill Hole Logs	7A-1
B	Discharge Permit	7B-1
C	Water Rights	7C-1
D	Agreement with Huntington City	7D-1
E	Slope Stability Analysis, Sedimentation Pond "A"	7E-1
F	Computer Sizing Runs (Sedimentation Ponds, Ditches and Culverts	7F-1
G	Bear Creek Flood Stage	7G-1
H	Reclamation Channel Sizing	7H-1
I	Sedimentation Pond Certification	7I-1
J	Probable Hydrologic Consequence Determination	7J-1
K	B.T.C.A. Areas	7K-1
L	Gentry Mountain Cumulative Hydrologic Impact Assessment	7L-1

GENERAL

Upon inspection of the Mine permit area it was found that the areas described below exist in the undisturbed zones and that surface runoff going through these areas does not pass through the sediment pond treatment facilities. In order to provide adequate treatment for these areas, straw bale dikes and/or silt fences will be installed as indicated on Plate 7-1. The sediment control structures will be positioned so that surface runoff passes through them before entering Bear Creak. Treatment facilities will be maintained for each area until approved and determined that adequate revegetation cancels the need for treatment. These areas are designated as "Best Technology Currently Available" or BTCA Areas. Drainage from these areas will be monitored as possible to show compliance with the state and federal limitations.

OUTSLOPE BANK OF UPPER STORAGE PAD.

During construction of the Upper Storage Pad (Plate 7-1) some fill was apparently overcast down the face of the slope below. The area covers approximately 800 sq ft. A silt fence will be installed and maintained at the inlet to culvert C-8U. In 1991, culvert C-8U will be eliminated, and the drainage will go to Sediment pond "A". The runoff volume for this area is calculated to be 0.0013 acre ft.

AREA NEAR PORTAL NO.1

This area lies between the upper lamphouse/mine portal bermed pad and the portal access road, extending from the road junction on the south to just north of the upper office trailer at the beginning of the Cattle Co. Road. The area is approx. 0.28 acres. A silt fence is installed at the north end of the area where runoff flows down hill from the Cattle Co. Road area. Runoff from the area passes through a silt fence near the inlet to culvert C-6U. Runoff volume from this area is calculated to be 0.019 acre ft.

BALL PARK TOPSOIL PILE

The ball park covers 1.2 acres. Straw bale dikes and/or silt fences will be installed on the south east side, in line with the natural flow to treat runoff before it enters Bear creak. Runoff volume from this area is calculated to be 0.082 acre ft.

TOPSOIL STOCKPILE

The main topsoil storage pile covers approx 0.1 acres. The area is encircled by an 18 in. berm and is protected by established vegetation. Runoff volume from this area is calculated to be 0.0068 acre ft.

Note: Runoff volumes are based on the 10 yr 24 hr event of 2.25 in. and runoff CN of 82.

TABLE OF CONTENTS

8	SOIL RESOURCES	1
8.1	SCOPE	1
8.2	METHODOLOGY	1
8.3	SOIL INFORMATION	5
8.3.1	<u>Soils Identification</u>	5
8.3.2	<u>Soils Description</u>	5
8.4	PRIME FARMLAND DETERMINATION	11
8.5	SOILS, PHYSICAL AND CHEMICAL PROPERTIES	11
8.6	SELECTED OVERBURDEN MATERIALS OR SUBSTITUTES	12
8.6.1	<u>Main Topsoil Storage Pile</u>	12
8.6.2	<u>Ball Park Topsoil Storage Pile</u>	14
8.6.3	<u>Topsoil Summary</u>	18
8.7	REMOVAL, STORAGE AND PROTECTION OF SOILS	18
8.7.1	<u>Physical and Chemical Properties of Soils</u>	18
8.7.1	<u>Soil Removal, Handling, Storage, and Protection Plans</u>	19
	8.7.1.1 Topsoil Removal	
	8.7.1.2 Topsoil Stockpile	
	8.7.1.3 Topsoil Protection	
8.8	REDISTRIBUTION OF SOILS	24
8.9	NUTRIENTS AND SOIL AMENDMENTS	25
8.10	EFFECTS OF MINING OPERATIONS ON TOPSOIL, NUTRIENTS, AND SOIL AMENDMENTS	26
8.11	MITIGATION AND CONTROL PLANS	27

APPENDIXES

A	Soil Test Reports	8A-1
B	SCS Soil Survey	8B-1
C	Prime Farm Lands	8C-1
D	Substitute Topsoil Material	8D-1

LIST OF FIGURES

Figure 8.6-1	Photographs of Ball Park Area	16
Figure 8.6-2	Ball Park Topsoil Storage Pile	17

LIST OF TABLES

Table 8.6-1	Ball Park Seed List	15
Table 8.6-2	Summary Table	18
Table 8.7-1	Analytical Parameters for Baseline Soils Data	20

LIST OF PLATES

Plate 8-1	Soils Map
Plate 8-2	Topsoil Storage Pile
Plate 8-3	Topsoil Storage Pile Location
Plate 8-4	Ballpark Topsoil Pile

has been purchased to relieve the deficiencies in the present stockpile. These results are attached in Appendix 8-A.

8.6 SELECTED OVERBURDEN MATERIALS OR SUBSTITUTES

There are approx 16 acres of disturbed area at the Bear Canyon Mine site. Of the 15.63 acres, approx 3.8 acres were constructed prelaw, and although no topsoil was saved, native material is available as down-cast material. In order to show that the downcast material is adequate and suitable as final reclamation plant growth material for the 3.8 acres, procedures outlined in Appendix 8-D will be followed.

The remaining approx 12 acres of disturbance will be covered with 6 in. of topsoil during reclamation. This will require approx 9,550 cu yds of topsoil. There are two existing topsoil storage areas on site (Plate 8-3), with storage quantities that meet this requirement.

8.6.1 Main Topsoil Storage Pile

The original topsoil storage pile was located north-east of the scale house in Bear Canyon. This pile consisted of approx 2,600 cu yds of topsoil stripped from the Bear Canyon disturbance. In 1990 this pile is proposed to be moved to the location shown on Plate 8-3. During the construction of the new storage pile and culvert

extension, additional topsoil will be recovered and incorporated into the pile following methods described in Section 8.7 and other applicable section of the mine plan. Surplus suitable plant growth material will be recovered from below the original Topsoil Pile when the area is graded for the proposed Bath house and from the new topsoil pile area. The new pile will be marked and protected by a berm and vegetation to prevent soil loss (Plate 8-2) as defined in Section 8.7.1.3. With the experience of Trail Canyon and the expected condition of the material to be recovered, Co-Op is confident that the deficiency will be covered. The SCS is scheduled to do a survey of the proposed material in Oct 1990.

8.6.3 Topsoil Summary

The following table summarizes the information discussed in the previous Sections:

Table 8.6-2 Summary Table

Total mine disturbance	15.63 acres
Area with topsoil (pre-law, down-cast material)*	3.8 acres
Area requiring topsoil	11.83 acres
Topsoil required	
11.83 acres x 6 in. depth	9,545 cu yds
Topsoil stored	
Upper site	3,600 cu yds
Ball Park site	3,400 cu yds
Total topsoil available	7,000 cu yds
Additional plant growth material to be recovered**	2,545 cu yds

* Downcast material to be used as substitute plant growth material.

** If only 3 to 4 ft of additional material is available at the existing and proposed topsoil site, the Ball Park site material will not be required for reclamation.

8.7 REMOVAL, STORAGE AND PROTECTION OF SOILS

8.7.1 Physical and Chemical Properties of Soils

The 1982 Co-Op field investigations provided information on the physical and chemical properties of soils in the permit area and is discussed in Appendix A. A rating for topsoil is included on the forms, as are some chemical properties. Soils found on-site are listed in the Soils Legend and shown on Plate 8-1. In studies during the 1984 field season on site sampling was analyzed

for the required chemical properties in all horizons (see Appendix A).

8.7.1 Soil Removal, Handling, Storage, and Protection Plans

Prior to the start of all new construction, topsoil will be analyzed as outlined in Table 8.7-1, in accordance with Division recommendations to determine the extent and depth of suitable plant growth medium and will be separately salvaged and stockpiled. Topsoil is stockpiled, consolidated and protected from wind and water erosion and contamination which might lessen its capability to support vegetation. The following subsections deal specifically with the various phases of the topsoil and subsoil handling plan.

8.7.1.1 Topsoil Removal

The depth of topsoil removed previous to 1990 was determined by the amount of A and B horizon material as defined in OSM Regulation 30 CFR 783.22. Existing vegetation was removed and topsoil was collected prior to excavation or other disturbance operations within the affected areas. The topsoil removed in these areas consists of A horizon quality material and B horizon quality material with virtually no distinctive difference. The C horizon material was not removed since it was not sufficiently capable of supporting diverse vegetation due to the excessive rock.

Table 8.7-1 Analytical Parameters for Baseline Soils Data

Test to be Performed	Reported As	Suggested Methods ¹
Soil Color	Hue Value/Chroma	Munsell notation
Soil texture	% sand, silt, clay	Hydrometer method. Black et al. 1965. Methods of soil analysis. ASA Mono No. 9, Part 1, method 43-5, pages 562-566.
pH	standard units	ASA Mono. No. 9, part c (2 ed). 1982. Method 10-3.2, page 171. pH performed on saturation paste, method 10-2.3.1, page 169.
Organic Carbon	%	ASA Mono No. 9, Part 2, 1982 (2 ed). Method 29-5.3. pages 571-573.
Saturation Percentage	%	SP = 100(total wt of water)/ (wt of oven-dry soil). Wts of water and soil known when making a saturated paste.
Alkalinity	meq/ liter	Std. Methods for Examination of waters and waste water, 15 ed., 1980, Method 403.4. Bromocresol green-method red indicator.
Electrical Conductivity	mmhos/cm @ 25°C	ASA Mono. No. 9, Part 2 1982, (2 ed). Method 10-3.3, pages 172-173. Use saturation paste extract.
CaCO ₃	%	ASA Mono. No. 9, Part 2, 1982 (2 ed). Method 11-2.4, pages 188-191.

Table 8.7-1 Analytical Parameters for Baseline Soils Data (cont)

Test to be Performed	Reported As	Suggested Methods ¹
Soluble Potassium, Magnesium, Calcium & Sodium	meq/l	ASA Mono. No. 9, Part 2, (2 ed), 1982. Method 10-3.4. pages 173-174.
Sodium Adsorption Ratio ²	SAR calculated from soluble Ca, Mg & Na (meq/l)	$\frac{[Na^+]}{([Ca^{2+} + Mg^{2+}]/2)^{0.5}}$
Total N	%	ASA Mono. No. 9, Part 2 (2 ed), 1982. Method 31-3, pages 610-616.
Available Phosphorus	mg/Kg	ASA Mono. No. 9, Part 2, (2 ed), 1982. Method 24-5.4, pages 421-422.
Available Water Capacity	in/in	USDA SCS Soil Survey Investigation Report No. 1, Method 4C1, page 24.
Rock Fragments	% Volume	USDA SCS Soil Survey Investigation Report No. 1, Method 3B, page 18.

¹These are suggested methods, other equivalent methods may be used if described and can be justified prior to sampling.

²If samples have a SAR greater than 12 for clay textured soils or greater than 15 for sandy textured soils, then exchangeable sodium percentage should be analyzed.

Note: This table is from Table 1 of the Department's "Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining", April 1988.

The equipment used for topsoil removal consists of bulldozers, front-end loaders, and dump trucks. The use of bulldozers requires pushing of the topsoil to a collection point for loading into dump trucks or other means of transportation to the designated stockpile. Adequate supervisory personnel are present at the time of the topsoil removal to instruct the equipment operators in the proper techniques of topsoil removal and to ensure that required horizons are removed and stored.

8.7.1.2 Topsoil Stockpile

Plans involving topsoil storage can be labeled as "short term" or "long term" depending on completion of activities in each area and the reclamation schedule presented.

Short-Term Topsoil Storage Areas. Short-term stockpiles of topsoil will be for areas to be reclaimed almost immediately upon cutting. At final grade topsoil will be redistributed promptly to minimize natural degradation processes. No short-term piles are anticipated at this time. If a need arises, a site-specific plan will be submitted prior to disturbance.

Long-Term Topsoil Storage Areas. During any new construction of areas that will be used for the duration of the mining operation within the permit area, topsoil will be collected and stockpiled. The topsoil will be used for post-mining reclamation.

Topsoil is presently being stored within areas of the permit boundary (Section 8.6). These piles should be considered "long term".

8.7.1.3 Topsoil Protection

The short-term topsoil stockpile will be sprayed with water or temporarily vegetated to retard erosion. The long-term topsoil stockpile will be protected by the following operational steps:

1. A stable surface will be provided in an area outside the influence of active operations.
2. As a stockpile is completed, it will be left in a rough condition to minimize erosion.
3. Stockpiles will be situated out of drainages to prevent water erosion.
4. Storage piles will be vegetated with quick growing, soil-stabilizing plants. Revegetation will involve the immediate seeding of stockpiles during the next planting season with the seed mixture recommended in Section 9.5, in compliance with the requirements of the appropriate land management agency.

5. Signs will be posted to protect the stockpiles from accidental use as fill or from other inadvertent material contamination. The establishment of noxious plant species will be prevented.
6. Stockpiled topsoil will not be removed or otherwise disturbed until required for redistribution on a prepared and regraded disturbed area.

8.8 REDISTRIBUTION OF SOILS

Following backfilling and regrading (Section 3.6.4) and prior to topsoil redistribution, regraded land will be scarified by a ripper to a depth of 14 in. in order to reduce surface compaction, provide a roughened surface assuring topsoil adherence, and promote root penetration. Steep slope areas which must remain after abandonment will receive special ripping to create ledges, crevices, pockets, and screes. This will allow better soil retention and vegetation establishment.

Prior to seeding, topsoil will be distributed on areas to be reclaimed. Topsoil redistribution procedures will ensure an approx uniform thickness of 6 inches as indicated by Soil Survey - March 1980 (Appendix 8-B). Topsoil will be redistributed in the fall of the year (Oct.) suitable for establishment of permanent vegetation. A very roughened seed bed will be left in all cases.

To minimize compaction of the topsoil following redistribution, travel on reclaimed areas will not be allowed. Co-Op will exercise care to guard against erosion during and after application of topsoil and will employ wood fiber mulch and tackifiers to ensure the stability of topsoil on the graded slopes. The specific methods to be implemented are defined in Section 9.

The soil stabilization methodology that will be used includes the placement of crushed and heavier material at the toe of road fill slopes, and the random placement of large rocks and boulders on the surface. This procedure will enhance the microclimate as well as make the reclaimed area more aesthetically compatible with the undisturbed surroundings. Erosion control matting will be installed on steep slopes where it is determined that the use is required for the proper establishment of vegetation and erosion control. The detailed revegetation plan to be submitted in the last five year permit renewal prior to reclamation, will include maps showing the areas to receive matting.

8.9 NUTRIENTS AND SOIL AMENDMENTS

Chemical analysis for micronutrients will be conducted by testing soil extracts from the redistributed material as outlined in Table 8.7-1. All necessary fertilization and/or neutralizing compounds will be applied according to the results of the soil sampling and analysis program approved by the division.

8.10 EFFECTS OF MINING OPERATIONS ON TOPSOIL, NUTRIENTS, AND SOIL AMENDMENTS

Since the Bear Canyon Mine is an underground mine, the impact of mining on soils will be minor overall. The impacts of surface operations and mining facilities on soil resources consist of coverage of soil by land-fills¹ and refuse, disturbance of soils during construction activities, erosion created by removing vegetation, reduced forage growth due to nutrient degradation, reduced livestock capacity, and particulate emissions to the air.

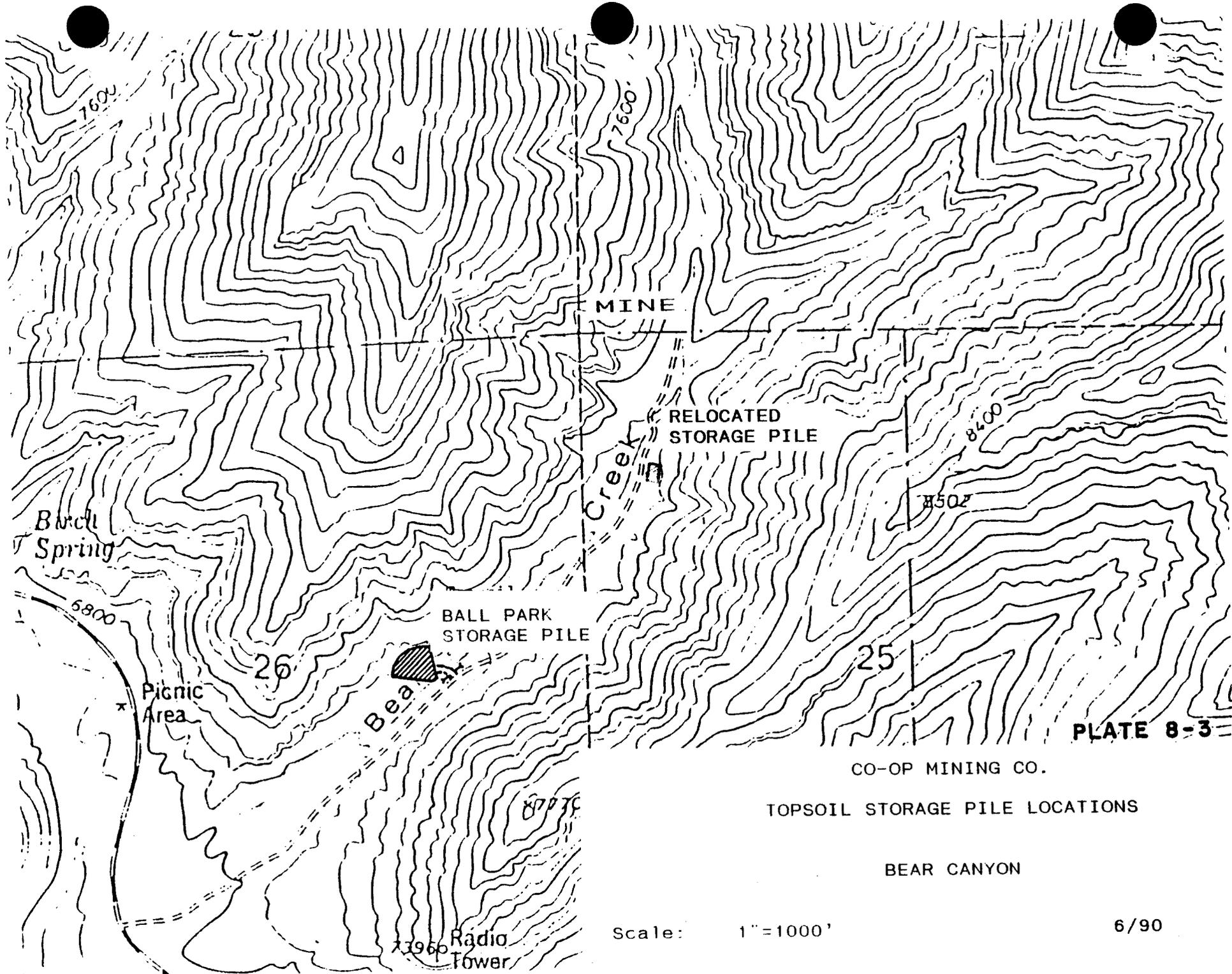
The areas in which soils have been disturbed to date within the permit area, includes the loadout area, offices, shops and substations, roads, portal areas, and the topsoil areas. Additional acreage may be disturbed in the future if Co-Op elects to proceed with certain projects it is considering.

¹Coverage of soil by landfills occurred pre-SMCRA.

8.11 MITIGATION AND CONTROL PLANS

Detailed Interim Reclamation Plans are included in Appendix 3-G of this Reclamation Plan in regard to stockpiling, long and short-term plans, and goals for final reclamation.

Co-Op is committed to take whatever steps are necessary to minimize loss of soil through erosion. Whenever rills or gullies become evident, will be filled, regraded, rip-rapped and re-seeded tackified, and mulched. This work will commence prior to any significant loss (Rills and Gullies, less than 9 in.).



MINE

RELOCATED
STORAGE PILE

BALL PARK
STORAGE PILE

Picnic
Area

Radio
Tower

Buck
Spring

Creek

26

25

PLATE 8-3

CO-OP MINING CO.

TOPSOIL STORAGE PILE LOCATIONS

BEAR CANYON

Scale: 1" = 1000'

6/90

TABLE OF CONTENTS

9	VEGETATION	1
9.1	SCOPE	1
9.2	METHODOLOGY	1
9.2.1	<u>Sample Point Selection</u>	2
9.2.2	<u>Sample Adequacy Determination</u>	2
9.2.3	<u>Vegetation Cover Estimation</u>	3
9.2.4	<u>Shrub Density and Height Estimation</u>	3
9.2.5	<u>Tree Density and Basal Area Estimation</u>	4
9.3	EXISTING RESOURCE	4
9.3.1	<u>SCS Productivity Estimates</u>	4
9.3.2	<u>Sampling Methodology</u>	5
9.3.3	<u>Vegetation Types</u>	6
9.3.3.1	Grass Vegetation Types	
9.3.3.2	Riparian Vegetation Types	
9.3.3.3	Pinyon-Juniper Type	
9.3.3.4	Sagebrush	
9.3.3.5	Bare Cliffs and Talus	
9.4	THREATENED AND ENDANGERED SPECIES	10
9.5	VEGETATION RECLAMATION PLAN	11
9.5.1	<u>Phase 1 - Backfilling and Grading</u>	13
9.5.2	<u>Phase 2 - Site Preparation</u>	13
9.5.3	<u>Phase 3 - Seeding and Mulching</u>	13
9.5.3.1	Drill Seeding	
9.5.3.2	Hydroseeding	
9.5.3.3	Mulching	
9.5.4	<u>Phase 4 - Planting</u>	17
9.5.4.1	Planting Procedure	
9.5.4.2	Field Storage	
9.5.5	<u>Recommended Seed Mix</u>	22
9.5.5.1	Noxious Weeds	
9.5.6	<u>Revegetation Cost Estimate</u>	25
9.6	RECLAMATION VEGETATION MONITORING	26

APPENDIXES

A	Vegetation Analysis	9A-1
B	SCS Letter	9B-1

LIST OF FIGURES

9.5-1	Correct Planting Procedures	19
9.5-2	Seedling Storage	20

LIST OF TABLES

9.3-1	Vegetation Types	6
9.5-1	Revegetation Schedule	12
9.5-2	Suggested Ratios of Tack to Fiber	15
9.5-2	Recommended Seed Mix, Riparian-Creek Bottom	22
9.5-3	Recommended Seed Mix, Pinyon Juniper Grass	23
9.5-4	Revegetation Cost Estimate	25

LIST OF PLATES

Plate 9-1 Vegetation Map

9.5.1 Phase 1 - Backfilling and Grading

Backfilling and Grading plans are found in Section 3.6.4 of this plan. Roads will be brought back to a reasonable configuration as described in Appendix 3-D.

9.5.2 Phase 2 - Site Preparation

Site stability will be largely accomplished through the grading, compacting and the utilization of a tackifying agent. However, terracing and erosion control matting will be required on some of the steeper slopes of more than 2:1. See Section 3.6.4. Mapping of each area receiving each control measure will be submitted with the detailed revegetation plan in the last five year permit renewal prior to reclamation.

Soil redistribution and stabilization will be completed as defined in Section 8.8 of this plan.

9.5.3 Phase 3 - Seeding and Mulching

The entire area of disturbance will be drilled or hydroseeded during the first Fall following the complete abandonment and earth work (September through November). Spring seeding was considered too speculative to be implemented based on the variation in Spring moisture regimes.

9.5.3.1 Drill Seeding

The largest portion of the recontoured site will facilitate drill seeding. The balance of the area would then be hydroseeded (Section 9.5.3.1). In order to lessen compaction, a rangeland drill seeder pulled behind a small crawler tractor will be utilized. The seed mix and rate of application is given in Section 9.5.5.

All drill seeded areas will be mulched with two tons per acre alfalfa, straw or grass hay. The mulch will be certified as weed free by the county agriculture agent. Copies of this certification, along with weight tickets from a certified scale will be submitted to the Division.

9.5.3.2 Hydroseeding

Steep slopes will be seeded with a hydro-seeder or possibly hand seeded. The seed mix and rate of application is given in Section 9.5.5.

All hydroseeded or hand seeded areas, will be lightly raked to insure adequate soil/seed contact. On slopes greater than 2:1, a two step hydroseeding methods will be used. One half of the seed amount will be applied and raked and then the remaining seed will be applied.

In combination with the seed, the following rates of tackifier will be utilized:

Table 9.5-2 Suggested Ratios of Tack to Fiber

<u>slope angle (deg)</u>	<u>slope ratio (rise:run)</u>	<u>percent slope</u>	<u>lbs. Tack per ton fiber</u>	<u>ratio tack to fiber</u>
14	1 : 4	25	60(min)*	1 : 30
26	1 : 2	50	80	1 : 25
33	1 : 1 1/2	66	100	1 : 20
45	1 : 1	100	120	1 : 16
57	1 1/2 : 1	150	140	1 : 14
64	2 : 1	200	160(min)	1 : 12

* 60 pounds is suggested as a minimum to insure excellent stabilization; however, in many conditions 40 pounds of Tack per acre has given excellent results on a 1:4 or less slope.

(Rates of Tack were developed with respect to velocity and erosive power of water which is proportional to the square root of the slope.) An empirical factor was determined from laboratory and field studies to arrive at the minimum Tack fiber ratio. Thus, 60 pounds of Tack per ton of fiber is about minimum for slopes up to 20 pct and the empirical factor is determined as 60 divided 20 pct = For a 100 pct slope (1:1 or 45 degrees) the ratio of Tack to fiber is calculated as:

(100 pct) (12) = 120 pounds. Tackifier to be used for Hydroseeding and Hydromulching to Serve as Mulch or Soil Binder.

9.5.3.3 Mulching

Following the seeding effort the entire area of disturbance will be hydromulched and fertilized. The rate of application of the wood fiber mulch is:

1,200 to 1,500 lbs/acre on flat areas or gentle slopes
2,000 to 2,500 lbs/acre on slopes exceeding 3:1 (horiz
to vert) slopes

The mulch will also be fortified with Tack as previously indicated according to slope. Fertilization and/or neutralizing compounds required according to Section 8.9. will be incorporated in the mulch slurry.

9.5.5 Recommended Seed Mix

All seed obtained will comply with all state and federal seed laws. Copies of certificates for testing and poundage of seed purchased, will be submitted to the division. Any changes in the approved seed mixes will first be cleared with the Division.

Table 9.5-2 Recommended Seed Mix, Riparian-Creek Bottom

<u>Species</u>	<u>Lbs/Acre P.L.S.</u>
<u>Grasses</u>	
Phalaris arundinacea	1
Oryzopsis hymenoides	3
Stipa viridula	2
Bromus marginatus	6
Agropyron dasystachyum	5
<u>Forbs</u>	
Clematis ligusticifolia	2
Arnica cordifolia	1
Artemisia ludoviciana	.15
Vicia americana	3.5
Achillea millefolium lanulosa	.25
Melilotus officinalis	3
<u>Shrubs</u>	
Rosa woodsii	4
Rhus trilobata	3
Chrysothamnus nauseosus var. albicaulis	.5
Sambucus cerulea (raw-uncleaned)	5
TOTAL	<u>39.4 lbs/acre</u>

Rates are designed for hydroseeding

Drill seeded area would be 1/2 the listed application rate.

Species to be planted:

<u>Species</u>	<u>Linear Ft Spacing</u>	<u>Number per Acre</u>
Populus angustifolia	5 ft	1,072
Rosa woodsii	8 x 8	680

9.5.5 Recommended Seed Mix

All seed obtained will comply with all state and federal seed laws. Copies of certificates for testing and poundage of seed purchased, will be submitted to the division. Any changes in the approved seed mixes will first be cleared with the Division. Costs listed below were gathered from suppliers in Nov. 1990.

It is currently recommended by the State of Utah, Division of Oil, Gas & Mining (DOGGM) that riparian areas such as the one in Bear Canyon Mine site not be seeded. It is often impractical to attempt to seed these narrow corridors in conjunction with the surrounding seeded areas. Instead it is recommended that the operator plant woody plant seedlings.

Table 9.5-2 Recommended Seed Mix, Riparian-Creek Bottom

<u>Scientific Name</u>	<u>Common Name</u>	<u>Plants/ac</u>	<u>Cost/ac*</u>
<u>Populus angustifolia</u>	Cottonwood	150	\$120
<u>Prunus virginiana</u>	Chokecherry	150	\$120
<u>Rosa woodsii</u>	Wood's Rose	500	\$400
<u>Sambucus caerulea</u>	Elderberry	100	\$ 80
<u>Salix spp.</u>	Willow	2000	\$400
	TOTAL	2900	\$1120

* Cost of all (except Salix spp.) estimates plant material cost only (labor not included).

Salix should be cut from a source area in close proximity to the mine site and planted in the reclaimed area. The cost of this species is based on estimated labor to accomplish this.

After two years the seeding effort will be evaluated and planting will be instigated in the event it appears necessary to bring the density and diversity of woody species up to the confidence levels of the corresponding reference area. The same species will be planted as listed above under shrubs. In addition, the following tree species will be planted:

<u>Species</u>	<u>Number per Acre</u>	<u>Spacing within Clumps*</u>
<u>Pinus edules</u>	18	5 ft
<u>Acer glabrum torr.</u>	18	5 ft
<u>Prunus virginiana</u>	5	25 ft

* Clumps spaces at 30 yd. intervals for wildlife cover

9.5.5.1 Noxious Weeds

The following weeds are officially designated as noxious for the State of Utah, as per the authority vested in the Commissioner of Agriculture under Section 4-17-3, Utah Noxious Weed Act, and will be controlled as directed by the Emery County, Extension Agent if found within the permit area:

Bermudagrass	<u>Cynodon dactylon</u>
Bindweed	<u>Convolvulus spp.</u>
Broadleaved Peppergrass	<u>Lepidium latifolium</u>
Canada Thistle	<u>Cirsium arvense</u>
Dyers Woad	<u>Isatis tinctoria</u>
Johnson Grass	<u>Sorghum halepense</u>
Leafy Spurge	<u>Euphorbia esula</u>
Musk Thistle	<u>Carduus nutans</u>
Quackgrass	<u>Agropyron repens</u>
Russian Knapweed	<u>Centaurea repens</u>
Scotch Thistle	<u>Onopordium acanthium</u>
Whitetop	<u>Cardaria spp.</u>

9.6 RECLAMATION VEGETATION MONITORING

All reclaimed areas will be monitored to determine when bond release parameters are achieved. Success standards will be based on the reference area. Qualitative (ocular estimates) monitoring will be completed each year until bond release with the intent of identifying problem areas. Quantitative monitoring will be made during years 2, 3, 5, 9 and 10 until bond releases. Both the final reclaimed area and reference area will be sampled for cover, density (woody plants). Species composition data will be collected and compiled every two years, using cover sampling data. Productivity measurements will be collected during years 9 and 10 of the bond liability period.

The success of the reclamation effort will be evaluated by detailed sampling of cover, woody plant density and production of reference and reclaimed areas. The data from the reclaimed areas and the reference area will be collected during the same growing season. If there is no significant difference in cover woody plant density and production between the reclaimed areas and the reference areas when tested at the 90 pct significance level using a one-tailed t-test, then the areas will be judged to adequately reclaimed relative to cover and production.

Wood plant density standards will be sampled for each reference area as well as the reclaimed areas and the success of

the reclaimed area based on the results from the reference areas (90 pct pre-mining stock level survival at bond release) cover, woody plant density on reclaimed and reference areas will be measured using the same methods employed during the baseline studies. At the time of bond release, trees and shrubs, used to achieve success, will be healthy and at least 80 pct will have been in place for at least eight growing seasons. No trees and shrubs in place for less than two growing seasons will be counted in determining stocking adequacy.

Standard methods, as outlined in Chapter 9, Vegetative Resources, will be applied to determine the degree of success for revegetation attempts. Production will be measured using a Harvest methodology. Shrub density data will be collected, using 1 m x 50 m transects.

One of the greatest challenges of revegetation is to create reclaimed areas which have a large number of desirable species. Species diversity on the reclaimed areas will be encouraged by including a variety of grasses, forbs, and shrubs in seeding and planting mixes.

Species diversity will be judged adequate when the relative cover and pct distribution of biomass for the major life form groups approx that which occurs in the reference areas. That is, if the relative cover by perennial grasses is 50 pct in the

reference areas, then the relative cover by perennial grasses on the reclaimed areas should also be approx 50 pct. This same relationship should also hold true for productivity. If most of the cover and production were being provided by annual forbs on the reclaimed areas and by perennial grasses on the reference areas, then the reclamation would be judged unsuccessful.

The purpose of the above procedures is to demonstrate that based on cover, production, woody plant density, and species diversity, the disturbed areas have been returned to stable plant communities capable of withstanding the intended post-mining land use.

2.2.2 Holders of Leasehold Interest in Surface Area and Coal Rights

The names and addresses of holders of record in Leasehold interest are listed below: Coal mining lease by and between Co-Op Mining Co. and Peabody Coal Co., executed 1 December 1975 (Plate 2-1).

T16S, R7E SLBM	Sec. 14 SW 1/4, SE 1/4
	Sec. 23 E1/2, E1/2 W1/2
	Sec. 24 All West of N-S Fault
	Sec. 25 All West of N-S Fault
(Fed. Lease U024316)	Sec. 13 W 1/2 W 1/2
	Sec. 14, E 1/2 NW 1/4, NE 1/4
(Fed. Lease U024318)	Sec. 26 E 1/2 NW 1/4

The right to mine and remove from, and use for purposes incident to mining, including access roads, camp facilities, surface operations, storage of coal, and other activities. Also unrestricted use of all access roads leading to and from property. Lease is binding on the successors to the parties of the lease. Co-Op also holds Federal Lease U024316 (See Appendix 2-F, Plate 2-1).

2.2.3 Purchase of Record Under a Real Estate Contract for Surface Area Coal

See Appendix 2-B Title Insurance Policy and Property Title.

2.2.4 Operator, if Different from Applicant

Same as above.

2.5.1 Waiver of Owners of Nearby Occupied Dwellings

Applicant does not propose to conduct or locate surface facilities within 300 feet of an occupied dwelling.

2.6 PERMIT TERM INFORMATION - ANTICIPATED FOR EACH PHASE

2.6.1 Starting Date

The mine started construction in 1981 and was in production by late fall of 1981. Mining in the 160 acre Lease addition area is proposed to begin in the spring of 1989 (Appendix 3-K).

2.6.2 Termination Dates

Termination dates anticipated for each phase of mining are nebulous at this time although a detailed estimate of production and reserves are included in the Geology Section and a projection of 22-years appears realistic (from 1990). The final termination date for the mining operation is expected to be 2012.

2.6.3 Numbers or Surface Acres Affected

The anticipated disturbance by the Bear Canyon Mine totals about 16 acres. Plate 2-1 shows potential property expansion and future facilities of the mine.

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TABLE OF CONTENTS

3	OPERATION AND RECLAMATION PLAN	1
3.1	SCOPE	1
3.2	SURFACE FACILITIES - EXISTING	1
3.3	SURFACE FACILITIES - NEW	1
3.3.1	<u>Site Selection and Preparation of Proposed Facilities</u>	1
3.3.2	<u>Portals</u>	2
3.3.3	<u>Surface Buildings and Structures</u>	2
3.3.4	<u>Coal Handling, Storage and Loading</u>	5
3.3.5	<u>Power System, Transmission Lines and Substations</u>	5
3.3.6	<u>Water Supply System</u>	5
3.3.7	<u>Water Diversion Structures</u>	6
3.3.8	<u>Sedimentation Control and Water Treatment Facilities</u>	6
3.3.9	<u>Storage, Waste and Refuse Areas</u>	6
3.3.10	<u>Transportation, Roads and Parking Areas</u>	6
3.3.11	<u>Topsoil Storage Piles</u>	8
3.3.12	<u>Explosives Storage and Handling</u>	8
3.3.13	<u>Relocation or Use of Public Roads</u>	9
	3.3.13.1 Protective Measures	
	3.3.13.3 Cross Section	
3.3.14	<u>Total Area for Surface Disturbance During Permit Term</u>	10
3.3.15	<u>Additional Area for Surface Disturbance for Life of Mine</u>	10
3.3.16	<u>Detailed Construction Schedule</u>	10

TABLE OF CONTENTS (cont)

3.4	OPERATION	10
3.4.1	<u>Mining Plans</u>	11
3.4.1.1	Advance-Retreat Mining Procedures	
3.4.1.2	Mining Methods	
3.4.1.3	Ventilation, Water System, Dust Suppression, and Dewatering	
3.4.2	<u>Barrier Pillars</u>	17
3.4.2.1	Property Boundaries	
3.4.2.2	Outcrop Protection	
3.4.2.3	Protection of Natural Surface Structures & Streams	
3.4.2.4	Protection of Manmade Features (Surface & Subsurface)	
3.4.2.5	Protection of Oil, Gas and Water Wells	
3.4.3	<u>Conservation of Coal Resource</u>	20
3.4.3.1	Minable Reserves	
3.4.3.2	Recovery Factors	
3.4.4	<u>Equipment Selection</u>	29
3.4.4.1	Surface Equipment	
3.4.5	<u>Mine Safety, Fire Protection and Security</u> .	29
3.4.5.1	Signs	
3.4.5.2	Fences and Gates	
3.4.5.3	Hazardous and Flammable Materials Contingency Plan	
3.4.5.4	Compliance with Regulations	
3.4.6	<u>Operations Schedule</u>	35
3.4.6.1	Annual Production for Permit Time	
3.4.6.2	Operating Schedule	
3.4.6.3	Employment	

TABLE OF CONTENTS (cont)

3.5	ENVIRONMENTAL PROTECTION	37
3.5.1	<u>Preservation of Land Use</u>	37
3.5.1.1	Projected Impacts of Mining on Current and Future Land Use	
3.5.1.2	Control Measures to Mitigate Impacts	
3.5.2	<u>Protection of Human Values</u>	40
3.5.2.1	Projected Impact of Mining on Human Values, Historical and Cultural	
3.5.2.2	Control Measures to Mitigate Impacts	
3.5.3	<u>Protection of Hydrologic Balance</u>	41
3.5.3.1	Control Measures to Mitigate Impacts	
3.5.4	<u>Preservation of Soil Resources</u>	44
3.5.4.1	Projected Impacts of Mining on Soil Resources	
3.5.4.2	Control Measures to Mitigate Impacts	
3.5.5	<u>Protection of Vegetative Resources</u>	47
3.5.5.1	Projected Impacts of Mining on Vegetative Resources	
3.5.5.2	Mitigating Measures to be Employed to Reduce Impacts on Vegetative Resources	
3.5.5.3	Monitoring Procedures	
3.5.6	<u>Protection of Fish and Wildlife</u>	50
3.5.6.1	Projected Impacts of Mining on Fish and Wildlife	
3.5.6.2	Mitigating Measures to be Employed to Protect Fish and Wildlife	
3.5.6.3	Monitoring Procedures	
3.5.7	<u>Protection of Air Quality</u>	55
3.5.7.1	Projected Impacts of Mining Operation on Air Quality	
3.5.7.2	Mitigating Measures to be Employed to Control Air Pollutants	
3.5.7.3	Air Quality Monitoring Plan	
3.5.8	<u>Waste Disposal Plans (Spoils, Coal Processing Wastes, Mine Development Wastes, Non-coal Wastes, Removal Handling and Storage.</u> . . .	57

TABLE OF CONTENTS (cont)

3.6	RECLAMATION PLAN	59
3.6.1	<u>Contemporaneous Reclamation</u>	61
3.6.2	<u>Soil Removal and Storage</u>	61
3.6.3	<u>Final Abandonment</u>	61
3.6.3.1	Sealing of Mine Openings. Drill Holes, Wells, etc.	
3.6.3.2	Removal of Surface Structures	
3.6.3.3	Disposition of Dams, Ponds and Diversions	
3.6.4	<u>Backfilling and Grading Plans</u>	68
3.6.4.1	Recontouring	
3.6.4.2	Removal or Reduction of Highwall	
3.6.4.3	Terracing and Erosion Control	
3.6.4.4	Soil Redistribution and Stabilization	
3.6.5	<u>Revegetation Plan</u>	77
3.6.5.1	Mulching	
3.6.5.2	Irrigation	
3.6.5.3	Management	
3.6.5.4	Vegetative Monitoring	
3.6.6	<u>Schedule of Reclamation</u>	80
3.6.7	<u>Reclamation Monitoring</u>	81
3.6.8	<u>Reclamation Bonding</u>	83
3.6.8.1	Detailed Timetable for Completion of Major Reclamation Processes	
3.6.8.2	Reclamation Cost and Bonding	
3.6.8.3	Modifications to Bonding	
3.6.9	<u>Alluvial Valley Floor Determination R614-302- 320</u>	93
3.6.10	<u>Temporary Cessation</u>	94
3.6.10.1	Temporary Portal Seals	

APPENDIXES

A	Existing Structures	3A-1
B	Culinary Water System	3B-1
C	Fee Property Lease Addition	3C-1
D	Road Reclamation Plan	3D-1
E	Toxic Materials & Handling	3E-1
F	Slope Stability Analysis	3F-1
G	Interim Reclamation Plan	3G-1
H	Renewable Resource Survey and Subsidence	3H-1
I	Blind Canyon Intake and Fan Portals	3I-1
J	Upper Bear Canyon Intake Portal and Emergency Escapeway	3J-1
K	Sediment Pond Material	3K-1

LIST OF FIGURES

3.4-1	Typical Panel Recovery	14
3.4-2	Typical Pillar Extraction	15
3.4-3	Coal and Geography Map, Hiawatha NE Quadrangle	23
3.4-4	Core Samples Measurements	24
3.4-5	Core Samples Measurements	25
3.4-6	Core Samples Measurements	26
3.6-1	Typical Portal Seal	65
3.6-2	Typical Slope Reclamation	70

LIST OF TABLES

3.4-1	Coal Reserves - Bear Canyon Mine	27
3.4-2	Sign Maintenance	31
3.4-3	Scheduled Sequence of Underground Activity	36

The Bear Canyon Haul Road is a primary road approx 1800 ft long from the gate to the scale house. The road is 30 ft wide and crowned in the middle (Plate 3-5). Drainage is provided by ditches on each side and culverts are installed where needed.

The mine area/portal access road is a primary road, approx 2,112 ft long and drainage structures are also in place (Plates 3-1 and 3-5). Three other primary roads provide access to the Sediment Pond A, the coal preparation facility and to the bathhouse. Sections of these three roads are found on Plate 3-1a.

There is one ancillary (jeep trail) road shown near the portal on plate 2-4, but it is not in use.

Roads are maintained in such a manner that the performance standards will be met throughout the life of the entire transportation facility, including maintenance of the surface, shoulders, parking and side areas, and erosion control structures for safe and efficient utilization of the road.

Reclamation of roads and parking areas is treated in the same manner as other working areas. Any asphalt or treated surfaces will be removed prior to rehabilitated upon completion of mining. See Plates 3-1, 3-1a, 3-2 and 3-5, and road agreement under Appendix 3-D.

3.5.1.1 Projected Impacts of Mining on Current and Future Land Use

The tentative acreage to be disturbed for each activity described above are as follows:

Mine Shop Area	1.76	acres
Mine Access Road	2.15	acres
Portal Conveyor and Pad Areas	9.4	acres
Sediment Treatment Area	.5	acres
Scale Area	<u>1.82</u>	<u>acres</u>
Total	15.63	acres

The management objectives and the impacts from the Bear Canyon Mine pertaining to these objectives are described in detail in Chapter 4.

Impacts. Approx 16 acres of soil will be disturbed within the permit area. This includes loadout areas, offices, shops and substations, roads, portal areas, bath house and the topsoil storage area. The reduction in desirable plant species will temporarily reduce forage production and wildlife capacities. The short-term negative impact of vegetation removal would be outweighed by the positive impacts of revegetation and improved fire protection and prevention.

Wildlife in the area will adapt to the operation in a relative short time as witnessed by existing coal operations. Proposed construction may temporarily disrupt wildlife if human disturbance

is not kept to a minimum. These topics are discussed in detail in the Wildlife Report, Chapter 10.

3.5.1.2 Control Measures to Mitigate Impacts

Reclamation activities in the permit area will be directed toward minimizing the overall impact of coal mining. This can be accomplished by careful planning of the disturbed areas that must be later reclaimed. Reclamation activities are defined in Section 3.6.

The proposed mine surface operation facility area, will be returned to a wildlife/grazing habitat at the conclusion of the mining operation. The pre-mining and proposed post-mining uses are therefore identical for all areas (Chapter 4).

3.5.2 Protection of Human Values

There are no public parks nor historical sites worthy of preservation in the permit area.

- b. Water rights could be purchased for springs damaged by Co-Op, or, alternate water shares could be substituted (Appendix 7-C).
- c. A well could be drilled at the affected site to provide an alternate supply (since artisan conditions do not exist).
- d. Water produced in the mine could be piped to the affected site.
- e. Water shares presently owned could be transferred.

Alternative d. may mean treating of poorer quality water and pumping to overcome elevation differences.

In the unlikely event that mining adversely affects a water source, Co-Op will select an alternative after considering all possibilities of each site-specific circumstance. Forest Service approval will be obtained for water effected on Federal Lease U-024316.

3.5.4 Preservation of Soil Resources

Co-Op is prepared to meet the requirements specified by 30 CFR 784.15. Backfilling, soil stabilization, compacting, grading and any other necessary operations will be performed when necessary with the best technology available, as approved by the regulatory agency. Section 3.6, Reclamation Plan, provides a detailed

discussion of the reclamation effort.

3.5.4.1 Projected Impacts of Mining on Soil Resources

Since the Bear Canyon Mine is an underground mine at the site of an old works, the overall impact of mining on soils will be minor. The impacts of surface operations and mining facilities on soil resources consist of coverage of soil by facilities, disturbance of soils during construction activities, erosion created by removing vegetation, reduced forage growth due to nutrient degradation, reduced wildlife capacity and particulate emissions to the air. However, the abandoned mine had large accumulations of debris which has now been cleaned up, which to a large degree constitutes enhancement.

3.5.4.2 Control Measures to Mitigate Impacts

The objectives of the proposed backfilling as soon as operation are concluded in each disturbed area, the removed topsoil will be redistributed on the site in a 6 in. uniform lift. Methods and techniques are detailed in Section 3.6.4.4, Soil Redistribution and Stabilization.

Topsoil Removal and Protection. Before new construction or mining activity that will disturb the surface of undisturbed areas, topsoil will be removed from the effected area. Vegetation

will first be removed, then topsoil will be segregated from other materials, removed and stockpiled separately in a stable approved site within the permit area. The stockpile will be protected from erosion, compaction, or contamination and will be stabilized with interim revegetation procedures.

Backfill, Compaction and Grading. Disturbed surface areas will be backfilled, compacted and graded according to the approved time schedule. Wherever possible, backfilling will return the various soil horizons to their original site and make them compatible with surrounding areas. Compaction will help the returned soils remain in place. Grading will restore the contour to as near the original state as possible. Post Mining Topography is shown on Plate 3-2.

Since this mine produces no acid-forming or toxic-forming materials, backfilling required to cover such materials will be limited (Appendix 3-E).

Physical and Chemical Soil Stabilization. Soils will be stabilized by physical and chemical methods before planting. This will include placement of crushed heavy material at the top of road-fill slopes, for example. Other approved and proven methods will be

employed as necessary. Chemical stabilization will include the addition of neutralizing chemicals to soils shown to be excessively acidic or basic. Nutrients and soil amendments will be added in the amounts indicated by soil testing (Section 8.9) so approved post-mining land use can be sustained.

Biological Soil Stabilization. Returned soils will be stabilized biologically by revegetation of disturbed areas. This stabilization effect will be accomplished by the new vegetative cover, particularly small shrubs and trees. This aspect of soil stabilization will begin as soon as topsoil is redistributed. Section 3.6.5, Revegetation Plan, provides specific detail on the aspect of the reclamation plan.

3.5.5 Protection of Vegetative Resources

Co-Op has maintained a commitment to reclaim the unused disturbed areas to the extent of the cover of the natural vegetation on the mine plan area. Chapter 9, Vegetative resources, provides a preliminary report on the vegetative resources of the area.

3.5.5.1 Projected Impacts of Mining on Vegetative Resources

Since the Bear Canyon Mine is an underground mine, the overall impact on surface vegetation is minor. The effects of surface operations on vegetation from new construction areas, on-site

erosion and reduction of desirable plant species which will reduce forage production and wildlife capacity.

Vegetated areas adjacent to the disturbed areas are protected from coal fines primarily by utilization of dust controls, such as water sprays on the coal handling facilities and watering of the coal haul roads. One of the major areas, located in the canyon below the Upper Storage Pad, does show past impact from coal fines; however, it is not established that this impact is negative or detrimental to the vegetation. As an added precaution, however, this area is planned to be drained into the sediment pond in 1991, to prevent possible coal fine accumulation from reaching Bear Creek.

Waste dumping or other disturbance on undisturbed areas is not permitted. Disturbed area perimeter markers delineate the boundaries of disturbance. Employees are trained not to dump or otherwise disturb areas outside those boundaries.

It is not felt that monitoring of these areas by photos is necessary, or even feasible, since long-range photos would give only a very general overview, and close-up photos would be so specific to a small area as to not be representative. In lieu of photo monitoring, it is proposed to visually check the areas on at least a yearly basis, and if it appears that coal fine accumulation or other impacts are occurring from the operation, additional

R614-301-528.330 Disposal of Non-Coal Waste. Co-Op has undertaken a massive clean-up operation wherein large quantities of scrap have already been removed from the permit area. This operation was completed (1 Sept 1983) the balance of the salvageable equipment is being stored in the designated area.

The equipment which is not scrapped out is temporarily stored in the storage yard in Bear Canyon. This site is situated in such a manner to insure that whatever runoff results from the area will pass through designated sediment facilities.

The non-coal waste (other than rock refuse) generated in the operation of the mine is placed in metal dumpsters which are strategically located on the property. A local trash collector is contracted to replace these bins when they are approx 80 pct full,

Appendix 3-E addresses a comprehensive plan to handle toxic or contaminated material in the course of reclamation.

vegetation standard is achieved, the sediment control structures will be removed.

3.6.1 Contemporaneous Reclamation

Interim Reclamation (during operations) has occurred in areas that are no longer needed or that require short term stabilization. These areas were seeded and mulched. Other areas may be reclaimed at different times during the operation as specific activities are concluded (Appendix 3-G). This same procedure will apply to any area which becomes available during the life of the mine, and will be implemented upon the first available favorable season.

3.6.2 Soil Removal and Storage

Topsoil material has been removed from disturbed areas, prior to 1990, as described in Sec 8.7 (Removal, Storage and Protection of Soils), of this plan. Prior to the start of any new construction, topsoil material will be analyzed, salvaged and stockpiled according to the procedures discussed in the same section.

3.6.3 Final Abandonment

Co-Op anticipated that the post-mining land uses of the permit area will be the same as the pre-mining. State and local governments have not proposed any land use changes for the post-mining period.

3.6.4 Backfilling and Grading Plans

The objective of the proposed backfilling, soil stabilizing, compacting, contouring and grading process is to achieve a reclaimed surface which will provide a variety of topographic features and enhance post-mining land use.

The steps to be taken in the backfill, soil stabilization, compaction, contouring and grading problems are described in the following subsections. Stability analysis of highwalls and backfilled areas are discussed in Appendix 3-F.

Backfilling operations, utilizing equipment such as rubber-tired scrapers, bulldozers, backhoes, front-end loaders and dump trucks, will be conducted in the portal and treatment facility areas. Holes or depressions will be filled when the mining operation is concluded. Compaction operations utilizing equipment such as sheeps-foot tampers, will be conducted to stabilize all filled holes and depressions.

In general, the backfilling and grading operation will take place in the following manner:

- a. All mining portals will be sealed and backfilled as previously described in Section 3.6.3.1.

3.6.4.3 Terracing and Erosion Control

Site stability will be largely accomplished through the grading, compacting and the utilization of a tackifying agent. However, on those areas with slopes of more than 2:1, terracing and erosion control matting will be used to enhance erosion control.

Terraces effectively decrease the angle of repose of the slope in question. In accomplishing this you effectively modify the site and change those conditions which preclude vegetation from becoming established. Second, you change the severity of erosion and, in fact, use those surface waters which heretofore were destructive in nature. This is accomplished by creating basins wherein the water has time to soak in and thus can be utilized by vegetation.

By utilizing a small crawler tractor (JD450) terraces can be contoured with the resulting terrace creating a bench effect and spaced at 12 ft intervals down the slope. A terrace of 8 ft, toed toward the hill is thus created. Planting is then instigated at approximately 2 ft distance from the cut face to minimize the detrimental effect of potential sluffing.

On a small portion of the disturbed area it may be necessary to utilize hand labor to construct small terraces, approximately 18 in. benches on a contour of 4 ft intervals. These terraces are constructed utilizing a "Region 6" hand tool and would only be

implemented in areas deemed hazardous for equipment and or in sensitive areas such as along Bear Creek where down cast material could adversely effect the drainage. This, in turn, decreases the impact on adjacent watersheds and improves quality of surface waters.

Those areas which are terraced provide a more favorable ecosystem than that of an equivalent slope. It facilitates better utilization of grasses and forage for grazing animals; to some degree it modifies climate in that severity of wind and weather is somewhat diminished. Also, the cut face acts in much the same as a snow drift fence does in trapping and causing small areas of snow

The need to terrace all of the steeper slopes within the mine plan area currently is not anticipated. Erosion control measures to be employed, will be specific to each situation. Mulching, silt fences, straw, etc. will be used as described in Section 7.2.6, to reduce and limit rainfall/erosion impacts.

3.6.4.4 Soil Redistribution and Stabilization

Soil redistribution and stabilization will be completed as defined in Section 8.8 of this plan. Co-Op will exercise care to guard against erosion during and after application of topsoil and will employ the necessary measures to ensure the stability of topsoil on graded slopes.

In addition to the vegetative stabilization discussed in Section 3.6.5, Revegetation Plan, physical stabilization of the soil is also planned. The specific methods to be implemented are defined in Chapter 8 and 9.

3.6.5 Revegetation Plan

All disturbed areas will be planted and revegetated during the first appropriate season following grading and topsoil redistribution procedures and will include, the addition of remedial soil treatments. A permanent, diverse vegetative cover, using approved seed mixes listed in Chapter 9, Section 9.5, will be established on all reclaimed areas. See Section 9.4 for full reclamation revegetation plan.

The operator will submit a detailed revegetation plan in the last Five-Year Permit Renewal prior to reclamation. The plan will include detailed map(s) of sufficient scale to show exact areas and methods of revegetation (i.e., drill seeding, terraces, netting, etc...) based on the best available technology and final mine site conditions.

Gently sloping and flat areas will be seeded with a drill seeder. Steeper slopes will be seeded with a hydroseeder or by hand. Many shrubs and all trees will be planted by hand setting to ensure a permanent plant cover.

Seedlings will be planted in Apr - May or Sept - Oct depending on availability and sequence of completion, plants will be grouped to provide wildlife cover. Spacing within the group is defined in Chapter 9 and will be correlated to the reference area.

3.6.5.1 Mulching

On all reclaimed areas a wood fiber mulch will be used to enhance moisture retention required for seed germination. Tackifier will be added to the mulch to help it adhere to the soil. A min of 60 lbs tackifier/ton fiber will be applied, with steeper sloping areas requiring more as shown in Section 9.5. Some steeply sloped areas may require erosion control matting. These areas will be noted on the detailed revegetation plan and maps to be submitted in the last Five-Year Permit Renewal prior to reclamation.

3.6.5.2 Irrigation

Since the species used for reclamation are known for their survival characteristics, it is felt that artificial application of additional water will not be required. Should lower than average precipitation or irregularities in distribution of precipitation occur following the initiation of reclamation procedures which temporarily precludes vegetation establishment, a preferred course of action would be to replant problem areas.

3.6.8 Reclamation Bonding

BOND

CO-OP MINING COMPANY

BEAR CANYON MINE

ACT/015/025, EMERY COUNTY, UTAH

3.6.8.1 Detailed Timetable for Completion of Major Reclamation Processes

The following schedule of reclamation is proposed to be initiated within 90 days (weather permitting) of final abandonment of the mining operation:

	<u>Actual Time</u>
a. Seal Portal - 1 week	1 week
b. Remove Structures - 2.5 weeks	3.5 weeks
c. Soil Placement (backfilling and grading)	
1. Upper Pad - 1 weeks (including road)	4.5 weeks
2. Channel Restoration - 1.5 weeks	6 weeks
3. Lower Pad and Diversions - 1.5 weeks (including road)	7.5 weeks
d. Seed-bed Material and Handling - 1 week	8.5 weeks
e. Reseeding and Fertilizing - 1 week	9.5 weeks
f. Mulching - .5 week	10 weeks
g. Protective Fencing - 2 weeks (concurrently)	10 weeks

Summary of Reclamation Cost Estimate

a.	Seal Portals and Backfill	\$ 35,000.00
b.	Removal Structures	\$ 32,595.00
c.	Solid Waste Removal	\$ 2,451.44
d.	Soil Placement (backfilling and grading)	\$ 42,760.00
e.	Channel Restoration	\$ 16,892.24
f.	Drill Seeding	\$ 7,128.00
g.	Hydroseeding	\$ 11,669.00
h.	Riparian Area Seeding	\$ 2,210.00
i.	Baseball Park Seeding	\$ 3,495.00
j.	Retaining Wall Removal	\$ 442.66
k.	Borehole Plugging	\$ 343.40
l.	Maintenance and Monitoring of Subsidence, Vegetation and Erosion (10 yr bond liability period)	\$ 19,460.00
m.	Hydrology Monitoring (10 yr bond liability period)	\$ 23,072.00
n.	Supervision (10 weeks)	\$ 9,640.00
o.	Mobilization and Demobilization	<u>\$ 2,500.00</u>
		\$209,658.74
	10 pct Contingency	<u>\$ 20,965.87</u>
	(1990 dollars)	\$230,624.61

<u>Escalated Values</u>	<u>Escalation Factor</u>
1991 - \$234,868	1.84% (actual)
1992 - \$239,190	1.84% (est)
1993 - \$243,591	1.84% (est)
1994 - \$248,073	1.84% (est)
1995 - \$252,637	1.84% (est)

An irrevocable letter of credit was posted in July 1990 for \$290,000 by Co-Op (C. W. Mining Co.).

NOTE: Section 3.6.8.3 modification and adjustment

Reclamation Costs (cont)

<u>Cross Conveyor</u>		
Labor - 3 men x 176.80/day x 1 day	\$	530.40
Equipment (hauling) truck + operator x 6 hrs x 70.48/hr		422.88
loader + operator x 8 hrs x \$118.30 (950B - 2 1/2 cu. yd. bucket)		946.40
Crane - 2 hrs. @ \$101.70/hr.		<u>203.40</u>
Subtotal	\$	2,103.08
c. Waste Removal		
Labor - 2 men x \$176.80/day x 4 days	\$	1,414.40
Hauling - truck + operator x 8 hrs x \$70.48/hr		563.84
Loader (+ operator) - 4 hrs x \$118.30		<u>473.20</u>
SUBTOTAL	\$	2,451.44
d. Soil Placement and Seed-Bed Material & Handling		
SUBTOTAL	\$	42,760.00
e. Channel Restoration (pulling culverts, reshaping channel, rip- rap and gabion structures)		
Backhoe + operator x \$221.33 x 48 hrs	\$	10,623.84
Labor - 4 men x \$176.80/day x 4 days		1,414.40
Cat x 1 day @ \$124.50/hr		996.00
Gabion Structures @ \$63.00/sy (53.3 sy)		3,358.00
Miscellaneous Rip-rap- \$500.00		<u>500.00</u>
SUBTOTAL	\$	16,892.24
f. Drill Seeding (Section 9.5)		
8 acres x \$ 891.00/acre		
SUBTOTAL	\$	7,128.00
g. Hydroseeding (Section 9.5)		
7 acres x \$1,667.00/acre		
SUBTOTAL	\$	11,669.00
h. Riparian Area Planting (Section 9.5)		
1 acre x \$2,210.00/acre		
SUBTOTAL	\$	2,210.00

and siltation, air and water pollution, and damage to public or private property.

The road is located along the canyon floor above the stream, and along the stable slope leading to the portals. The overall grade of the road does not exceed 1:V:10h (10 pct) and the maximum pitch grade does not exceed 1V:6.5h (15 pct). The horizontal alignment is consistent with the existing topography and with the volume, speed, and weight of anticipated traffic.

As mentioned earlier, the initial road was constructed under pre-law conditions, using the cut/fill side-cast method. A stability analyses was performed on the road by Dames & Moore in 1981 (Appendix 3-F). Their conclusion was that the Bear Canyon Portal Access Road has a stability factor of safety of a minimum of 1.43, and ranges upward to 2.15.

There are 3 other Primary roads within the Permit Area. Following is a description of each of these:

- a. Road to Sediment Pond A. This road is 430 ft long and was constructed to allow access to the Sediment Pond and to facilitate cleaning of the drainage to the pond. The road is in actuality the disturbed drainage ditch to sediment "Pond A", and is used infrequently to clean sediment from "Pond A". The road has an overall slope of approximately 4.0 pct and does not exceed 15 pct at any point. The horizontal alignment

is consistent with the existing topography and with the volume, speed, and weight of anticipated traffic.

- b. Road to the Coal Preparation Facility. This road is 600 ft long, and was constructed to provide access to the Coal Preparation Facility. The road has an overall slope of approximately 10.0 pct, and does not exceed 15 pct at any point. The horizontal alignment is consistent with the existing topography and with the volume speed, and weight of the anticipated traffic.

- c. Bathhouse Road. This road is 160 ft long, and provides access to the bathhouse. The road has an overall slope of approximately 3.0 pct, and does not exceed 15 pct at any point. The horizontal alignment is consistent with the existing topography and with the volume, speed, and weight of the anticipated traffic.

Ditches and culverts have been added to the roads to control run-off and safely pass the run-off from a 10-year, 24-hour precipitation event. (see Plates 3-1 and 3-5). Ditches shall be maintained at a minimum depth of 1.8 ft, and at least 30 in. of headwater depth will be maintained at the inlet of the 18 in. culverts. Culverts are fitted with trash racks to prevent plugging, and buried and compacted a minimum of 30 in. to prevent crushing. In areas where velocities of run-off exceed 5 fps,

erosion protection such as straw bales at 100 ft intervals or 6 in. median diameter rip rap on a bed of 2 in. gravel/sand 6 in. thick shall be maintained. Rock or concrete headwalls shall be provided at the inlet to all culverts, and rip rap or other erosion protection shall be provided at the outlet.

The roads are surfaces with 4 in. of -3/4 gravel, and is maintained in such a manner that the approved design standards are met throughout the life of the facility. Damage to the roads from use or weather events shall be promptly repaired.

These roads shall be removed upon completion of the mining operation. The timing and procedure of removal and reclamation is discussed in detail under the Backfilling and Grading Plan in Sec. 3.6.4.

Ancillary Roads

The only Ancillary Road on the permit area is a jeep trail that was constructed pre-law, probably as a cattle trail. This road is shown on Plate 2-2, Surface Facilities Map. The road is blocked off and is not used; therefore, no maintenance or reclamation plan is proposed for this trail.

TOXIC MATERIALS & HANDLING

Any material that is contaminated with coal, as determined by visual observation, will be placed against the highwall and buried beneath a min of 2 ft of fill material during reclamation. Material that is contaminated with oil or grease or any other potentially acid or toxic matter, as determined by visual means, will be placed against the highwall and covered with a min of 4 ft fill, top soiled, and reclaimed. Interim isolation of such material will be by use of berms created by a backhoe or loader.

Since the roof material from the mine has shown a high SAR value, any roof rock that is stored on the surface will be isolated by a berm as long as it is stored on site. During reclamation, this material will be placed against the top of the highwall and covered with a minimum of 4 ft of material, covered with required plant growth medium and revegetated.

Covering Coal and Acid and Toxic Forming materials

The pH, acid-base potential, texture and electrical conductivity of these materials must be included on the date reported.

Co-Op reply. Co-Op submitted a sample to CT&E testing for this data and the results are included attached. Co-Op will commit to removing any and all such material or disposing of them in a manner

METHODOLOGY

Phase 1 - Earth Moving

The pad down slopes will be brought back to a reasonable configuration by implementation of a crawler tractor. The actual method will involve smooth contouring of the existing soil and walking the crawler up and down the slope attempting to minimize compaction while at the same time creating small indentations by the grouser on the track. This methodology creates an enhanced micro-climate for the establishment of seed and guarantees sufficient compaction as to assure integrity and stability of embankment and prohibit failure.

Phase 2 - Seeding and Mulching

The entire disturbed area will be hydroseeded during the mid fall season with a Target completion date of 15 October. The seed mix and rate of application for interim reclamation is shown in Table 3G-1. Hydro-seeding and mulching will be carried out in conjunction with the earth work of Phase 1. All hydroseeded or hand seeded areas will be lightly raked to insure adequate soil/seed contact. Recommendations for the hydroseeding and mulching operation are shown in Table 3G-2.

Form 4-67b
October 1955)

255-016

UNITED STATES
DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Land Office
Post Office Box No. 777
Salt Lake City 10, Utah
Office Salt Lake City, Utah
Serial No. Utah 024316

LEASE OF COAL LANDS UNDER THE ACT OF
FEBRUARY 25, 1920, AS AMENDED

This lease, entered into on May 1, 19 58, by the United States
of America, the lessor, through the Bureau of Land Management, and Huntington
Corporation, Box 1001, Palo Alto, California

the lessee, pursuant and subject to the terms and provisions of the act of
February 25, 1920 (41 Stat. 437), as amended, hereinafter referred to as the act,
and to all reasonable regulations of the Secretary of the Interior now in force
which are made a part hereof,

WITNESSETH:

Section 1. Rights of lessee.--The lessor, in consideration of the rents and
royalties to be paid and the conditions to be observed as hereinafter set forth,
does hereby grant and lease to the lessee the exclusive right and privilege to
mine and dispose of all the coal in the following-described tracts of land,
situated in the State of Utah

T. 16 S., R. 7 E., SL Mer, Utah

- Sec. 10: NE, NW, SE, SW
- Sec. 11: All
- Sec. 12: NW
- Sec. 13: NW
- Sec. 14: NE, NW

containing 1,800 acres, more or less, together with the right to construct
all such works, buildings, plants, structures, and appliances as may be necessary
and convenient for the mining and preparation of the coal for market, the manu-
facture of coke or other products of coal, the housing and welfare of employees, and,
subject to the conditions herein provided, to use so much of the surface as may
reasonably be required in the exercise of the rights and privileges herein granted.

Sec. 2. In consideration of the foregoing, the lessee hereby agrees:

(a) Bond.--To maintain the bond furnished upon the issuance of this lease,
which bond is conditioned upon compliance with all the provisions of the lease,
and to increase the amount of or furnish such other bond as may be required.

(b) Rental.--To pay the lessor annually, in advance, for each acre or part
thereof covered by this lease, beginning with the date hereof, the following
rentals: 25 cents for the first year, 50 cents for the second, third, fourth,
and fifth years, respectively, and \$1 for the sixth and each succeeding year
during the continuance of the lease, such rental for any year to be credited
against the first royalties as they accrue under the lease during the year for
which the rental was paid.

(c) Royalty.--To pay the lessor a royalty of 15 cents on every ton of
2,000 pounds of coal mined during the first 20 years succeeding the execution of
this lease. Royalties shall be payable quarterly within 30 days from the ex-
piration of the quarter in which the coal is mined.

(d) Minimum production.--Beginning with the sixth year of the lease, except when operations are interrupted by strikes, the elements, or casualties not attributable to the lessee, or unless on application and showing made, operations shall be suspended when market conditions are such that the lessee cannot operate except at a loss or suspended for the other reasons specified in section 39 of the act, to mine coal each year and pay a royalty thereon to a value of \$1 an acre or fraction thereof. Operations under this lease shall be continuous except in the circumstances described or unless the lessee shall pay a royalty, less rent, on such minimum amount of the leased deposits, for one year in advance, in which case operations may be suspended for that year.

(e) Payments.--Unless otherwise directed by the lessor, to make rental, royalty, or other payments to the Regional Mining Supervisor of the United States Geological Survey of the region in which the leased lands are situated. All remittances must be made payable to the United States Geological Survey.

(f) Plats, reports, maps.--At such times and in such form as the lessor may prescribe, to furnish a plat showing development work and improvements on the leased lands and a report with respect to stockholders, investment, depreciation, and costs. To furnish in such form as the lessor may prescribe, within 30 days from the expiration of each quarter a report covering such quarter, certified by the superintendent of the mine, or by such other agent having personal knowledge of the facts as may be designated by the lessee for such purpose, showing the amount of leased deposits mined during the quarter, the character and quality thereof, amount of its products and byproducts disposed of and price received therefor, and amount in storage or held for sale. To keep and prepare maps of the leased lands in accordance with the regulations in 30 CFR, Part 211.

(g) Weights.--To determine accurately the weight or quantity and quality of all leased deposits mined, and to enter accurately the weight or quantity and quality thereof in due form in books to be kept and preserved by the lessee for such purposes.

(h) Inspection.--To permit at all reasonable times (1) inspection by any duly authorized officer of the Department, of the leased premises and all surface and underground improvements, works, machinery, equipment, and all books and records pertaining to operations and surveys or investigations under this lease; and (2) the lessor to make copies of and extracts from any or all books and records pertaining to operations under this lease, if desired.

(i) Assignment of lease or interest therein.--To file for approval with the office prescribed in the regulations, within 90 days from the date of final execution, any assignment, sublease, or transfer made of this lease, whether by direct assignment, working agreement, transfer of royalty interest, or otherwise. Such instrument will take effect the first day of the month following its final approval by the Bureau of Land Management, or if the assignee requests, the first day of the month of the approval.

(j) Nondiscrimination.--In connection with the performance of work under this lease, the lessee agrees not to discriminate against any employee or applicant for employment because of race, religion, color or national origin. The aforesaid provision shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The lessee agrees to post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of the nondiscrimination clause. The lessee further agrees to insert the foregoing provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials.

(k) Lands disposed of with the coal deposits reserved to the United States.--If the lands embraced herein have been or shall hereafter be disposed of under laws reserving to the United States the deposits of coal therein, to comply with all conditions as are or may hereafter be provided by the laws and regulations reserving such coal.

(l) Operations, wages, freedom of purchase.--To comply with the operating regulations (30 CFR, Part 211), to exercise reasonable diligence, skill, and care in the operation of the property, and to carry on all operations in accordance with approved methods and practices as provided in the operating regulations, having due regard for the prevention of injury to life, health or property, and of waste or damage to any water or mineral deposits; to fairly and justly weigh or measure the coal mined by each miner; to pay all wages due miners and employees, both above and below ground, at least twice each month in lawful money of the United States; to accord all miners and employees complete freedom of purchase; to restrict the workday to not exceeding eight hours in any one day for underground workers, except in cases of emergency; to employ no boy under the age of sixteen and no girl or woman, without regard to age, in any mine below the surface; unless the laws of the State otherwise provide, in which case the State laws control.

(m) Taxes.--To pay when due, all taxes lawfully assessed and levied under the laws of the State or the United States upon improvements, output of mines, or other rights, property, or assets of the lessee.

(n) Overriding royalties.--Not to create, by assignment or otherwise, an overriding royalty interest in excess of 50 percent of the rate of royalty first payable to the United States under this lease or an overriding royalty interest which when added to any other outstanding overriding royalty interest exceeds that percentage, excepting, that where an interest in the leasehold or in an operating agreement is assigned, the assignor may retain an overriding royalty interest in excess of the above limitation if he shows to the satisfaction of the Bureau of Land Management, that he has made substantial investments for improvements on the land covered by the assignment.

(o) Delivery of premises in case of forfeiture.--In case of forfeiture of this lease, to deliver up to the lessor in good order and condition the land leased, including all buildings, and underground timbering and such other supports and structures as are necessary for the preservation of the mine or deposit.

Sec. 3. The lessor expressly reserves:

(a) Rights reserved.--The right to permit for joint or several use such easements or rights-of-way, including easements in tunnels upon, through, or in the land leased, occupied, or used as may be necessary or appropriate to the working of the same or other lands containing the deposits described in the act, and the treatment and shipment of the products thereof by or under authority of the Government, its lessees or permittees, and for other public purposes.

(b) Disposition of surface.--The right to lease, sell, or otherwise dispose of the surface of the leased lands under existing law or laws hereafter enacted, insofar as said surface is not necessary for the use of the lessee in the extraction and removal of the coal therein, or to dispose of any resource in such lands which will not unreasonably interfere with operations under this lease.

(c) Monopoly and fair prices.--Full power and authority to promulgate and enforce all the provisions of section 30 of the act to insure the sale of the production of said leased lands to the United States and to the public at reasonable prices, to prevent monopoly, and to safeguard the public welfare.

(d) Readjustment of terms.--The right reasonably to readjust and fix royalties payable hereunder and other terms and conditions at the end of 20 years from the date hereof and thereafter at the end of each succeeding 20-year period during the continuance of this lease unless otherwise provided by law at the time of the expiration of any such period. Unless the lessee files objections to the proposed terms or a relinquishment of the lease within 30 days after receipt of the notice of proposed terms for a 20-year period, he will be deemed to have agreed to such terms.

(e) Waiver of conditions.--The right to waive any breach of the conditions contained herein, except the breach of such conditions as are required by the act, but any such waiver shall extend only to the particular breach so waived and shall not limit the rights of the lessor with respect to any future breach; nor shall the waiver of a particular cause of forfeiture prevent cancellation of this lease for any other cause, or for the same cause occurring at another time.

Sec. 4. Relinquishment of lease.--Upon a satisfactory showing that the public interest will not be impaired, the lessee may surrender the entire lease or any legal subdivision thereof. A relinquishment must be filed in duplicate in the appropriate land office. Upon its acceptance it shall be effective as of the date

it is filed, subject to the continued obligation of the lessee and his surety to make payment of all accrued rentals and royalties and to provide for the preservation of any mines or productive works or permanent improvements on the leased lands in accordance with the regulations and terms of the lease.

Sec. 5. Protection of the surface, natural resources, and improvements.--The lessee agrees to take such reasonable steps as may be needed to prevent operations from unnecessarily: (1) Causing or contributing to soil erosion or damaging any forage and timber growth thereon; (2) polluting the waters of springs, streams, wells, or reservoirs; (3) damaging crops, including forage, timber, or improvements of a surface owner; or (4) damaging range improvements whether owned by the United States or by its grazing permittees or lessees; and upon any partial or total relinquishment or the cancellation or expiration of this lease, or at any other time prior thereto when required by the lessor and to the extent deemed necessary by the lessor, to fill any sump holes, ditches and other excavations, remove or cover all debris, and, so far as reasonably possible, restore the surface of the leased land to its former condition, including the removal of structures as and if required. The lessor may prescribe the steps to be taken and restoration to be made with respect to lands of the United States and improvements thereon.

Sec. 6. Removal of equipment, etc., on termination of lease.--Upon termination of this lease, by surrender or forfeiture, the lessee shall have the privilege at any time within a period of 90 days thereafter of removing from the premises all machinery, equipment, tools and materials, other than underground timbering placed by the lessee in or on the leased lands, which are not necessary for the preservation of the mine. Any materials, tools, appliances, machinery, structures, and equipment, subject to removal as above provided, which are allowed to remain on the leased lands shall become the property of the lessor on expiration of the 90-day period or such extension thereof as may be granted because of adverse climatic conditions, but the lessee shall remove any or all of such property where so directed by the lessor.

Sec. 7. Proceedings in case of default.--If the lessee shall not comply with any of the provisions of the act or the regulations thereunder or default in the performance or observance of any of the provisions of this lease, and such default shall continue for a period of 30 days after service of written notice thereof by the lessor, the lessor may institute appropriate proceedings in a court of competent jurisdiction for the forfeiture and cancellation of this lease as provided in section 31 of the act (30 U.S.C., sec. 188). If the lessee fails to take prompt and necessary steps to prevent loss or damage to the mine, property, or premises, or danger to the employees, the lessor may enter on the premises and take such measures as may be deemed necessary to prevent such loss or damage or to correct the dangerous or unsafe condition of the mine or works thereof, which shall be at the expense of the lessee. However, the lessee shall not be held responsible for delays or casualties occasioned by causes beyond the lessee's control.

Sec. 8. Heirs and successors in interest.--Each obligation hereunder shall extend to, and be binding upon, and every benefit hereof shall inure to, the heirs, executors, administrators, successors, or assigns of the respective parties hereto.

Sec. 9. Unlawful interest.--No Member of, or Delegate to, Congress or Resident Commissioner, after his election or appointment, or either before or after he has qualified and during his continuance in office, and no officer, agent, or employee of the Department of the Interior, except as provided in 43 CFR 7.4(e)(1), shall be admitted to any share or part in this lease or derive any benefit that may arise therefrom; and the provisions of section 3741 of the Revised Statutes of the United States, as amended (41 U.S.C., sec. 22), and sections 431, 432, and 433, title 18, U.S.Code, relating to contracts, enter into and form a part of this lease so far as the same may be applicable.

IN WITNESS WHEREOF:

James L. French
Thomas G. Conroy
(Witnesses to signature of lessee)

THE UNITED STATES OF AMERICA,
By [Signature]
(Signing Officer) APR 14 1958
Manager Land Office
(Title) (Date)

HUNTINGTON CORPORATION
(Lessee's signature)
By Laurence G. [Signature]
(Lessee's signature)
Laurence G. [Signature] Secretary

(If this lease is executed by a corporation, it must bear the corporate seal)

By [Signature] 7/90
Frederick L. [Signature]

1952
UNITED STATES
DEPARTMENT OF THE INTERIOR
Bureau of Land Management

STIPULATION FOR LANDS UNDER JURISDICTION OF DEPARTMENT OF AGRICULTURE

The lands embraced in this lease (permit) issued under the Mineral Leasing Act of February 25, 1920 (41 Stat. 437, 30 U.S.C., 1946 ed., sec. 181 et seq.), as amended, the Mineral Leasing Act for Acquired Lands of August 7, 1947 (61 Stat. 913, 30 U.S.C., 1946 ed., Supp. III, sec. 351 et seq.) the act of September 1, 1949 (63 Stat. 683, 30 U.S.C., 1946 ed., Supp. III, sec. 192c) the act of June 30, 1950 (64 Stat. 311, 16 U.S.C., 1946 ed., Supp. IV, sec. 508(b)) or under the authority of any of the acts cited in section 402 of the President's Reorganization Plan No. 3 of 1946 (60 Stat. 1097, 5 U.S.C. 1946 ed., sec. 133 y-16, note) being under the jurisdiction of the Secretary of Agriculture, the lessee (permittee) hereby agrees:

(1) To conduct all operations authorized by this lease (permit) with due regard for good land management, not to cut or destroy timber without first obtaining permission from the authorized representative of the Secretary of Agriculture, and to pay for all such timber cut or destroyed at the rates prescribed by such representative; to avoid unnecessary damage to improvements, timber, crops, or other cover; unless otherwise authorized by the Secretary of Agriculture, not to drill any well, carry on operations, make excavations, construct tunnels, drill, or otherwise disurb the surface of the leased (permitted) lands within 200 feet of any building standing on the leased (permitted) lands and whenever required in writing by the authorized representative of the Secretary of Agriculture to fence or fill all sump holes, ditches and other excavations, remove or cover all debris, and so far as reasonably possible, restore the surface of the leased (permitted) lands to their former condition, including the removal of structures as and if required, and when required by such representative to bury all pipelines below plow depth.

(2) To do all in his power to prevent and suppress forest, brush or grass fires on the leased (permitted) land and in its vicinity, and to require his employees, contractors, subcontractors, and employees of contractors or subcontractors to do likewise. Unless prevented by circumstances over which he has no control, the lessee (permittee) shall place his employees, contractors, subcontractors, and employees of contractors and subcontractors employed on the leased (permitted) land at the disposal of any authorized officer of the Department of Agriculture for the purpose of fighting forest, brush, or grass fires on or originating on the leased (permitted) lands or on adjacent areas or caused by the negligence of the lessee (permittee) or his employees, contractors, subcontractors and employees of contractors and subcontractors, with the understanding that payment for such services shall be made at rates to be determined by the authorized representative of the Secretary of Agriculture, which rates shall not be less than the current rates of pay prevailing in the vicinity for services of a similar character: Provided, that if the lessee (permittee), his employees, contractors, subcontractors, or employees of contractors or subcontractors, caused or could have prevented the origin or spread of said fire or fires, no payment shall be made for services so rendered.

During periods of serious fire danger to forest, brush, or grass, as may be specified by the authorized representative of the Secretary of Agriculture, the lessee (permittee) shall prohibit smoking and the building of camp and lunch fires by his employees, contractors, subcontractors, and employees of contractors or subcontractors within the leased (permitted) area except at established camps, and shall enforce this prohibition by all means within his power: Provided, that the authorized representative of the Secretary of Agriculture may designate safe places where, after all inflammable material has been cleared away, campfires may be built for the purpose of heating lunches and where, at the option of the lessee (permittee), smoking may be permitted.

The lessee (permittee) shall not burn rubbish, trash or other inflammable materials except with the consent of the authorized representative of the Secretary of Agriculture and shall not use explosives in such a manner as to scatter inflammable materials on the surface of the land during the forest, brush, or grass fire season, except as authorized to do so on areas approved by such representative.

2F-7

7/90

The lessee (permittee) shall build or construct such structures or do such clearing on the leased land as the authorized representative of the Secretary of Agriculture decides is essential for forest, brush, and grass fire prevention which is or may be necessitated by the exercise of the privileges authorized by this lease (permit) and shall maintain such structures at his headquarters or at the appropriate location.

(3) In the location, design, construction and maintenance of all authorized works, buildings, plants, waterways, roads, telegraph or telephone lines, pipelines, reservoirs, tanks, pumping stations, or other structures or clearances, the lessee (permittee) shall be held responsible for any damage or injury to the land, including, but not limited to, extensive scarring and erosion of the land, pollution of the water resources and any damage to the watershed. Where construction, operation, or maintenance of any of the facilities on or connected with this lease (permit) causes damage to the watershed or pollution of the water resources, the lessee (permittee) agrees to repair such damage and to take such corrective measures to prevent further pollution or damage to the watershed as are deemed necessary by the authorized representative of the Secretary of Agriculture.

(4) To pay the lessor (permitter) or his tenant or the surface owner or his tenant, as the case may be, for any and all damage to or destruction of property caused by lessee's (permittee's) operations hereunder; to save and hold the lessor (permitter) or the surface owner or their tenants harmless from all damage or claims for damage to persons or property resulting from lessee's (permittee's) operations under this lease (permit).

(5) To recognize existing uses and commitments, in the form of Department of Agriculture grazing, timber cutting, and special use permits, water developments, ditch, road, trail, pipeline, telephone line, and fence rights-of-way and other similar improvements, and to conduct his operations so as to interfere as little as possible with the rights and privileges granted by these permits or with other existing uses.

(6) To install and maintain cattle guards to prevent the passage of livestock in any openings made in fences by the lessee (permittee) or his contractors to provide access to the lands covered by this lease (permit) for automotive and other equipment.

(7) If lessee (permittee) shall construct any camp on the land, such camp shall be located at a place approved by the authorized representative of the Secretary of Agriculture, and such representative shall have authority to require that such camp be kept in a neat and sanitary condition.

(8) To comply with all the rules and regulations of the Secretary of Agriculture governing the national forests or other lands under his jurisdiction which are embraced in this lease (permit).

(9) Unless otherwise authorized, prior to the beginning of operations to appoint and maintain at all times during the term of this lease (permit) a local agent upon whom may be served written orders or notices respecting matters contained in this stipulation, and to inform the authorized representative of the Secretary of Agriculture, in writing, of the name and address of such agent. If a substitute agent is appointed, the lessee (permittee) shall immediately so inform the said representative.

(10) To address all matters relating to this stipulation to Regional Forester, U. S. Forest Service, Forest Service Building, Ogden, Utah. at _____ who is the authorized representative of the Secretary of Agriculture, or to such other representative as may from time to time, be designated, provided that such designation shall be in writing and be delivered to the lessee (permittee) or his agent.

(11) If all or any part of the leased (permitted) lands lie within a municipal watershed or are, in the opinion of the authorized representative of the Secretary of Agriculture, primarily valuable for watershed protection, the lessee (permittee) shall reseed or otherwise restore the vegetative cover, as required by the authorized representative of the Secretary of Agriculture, for watershed protection and erosion prevention on any areas damaged because of the operation.

This lease authorizes mining by underground methods only.

No roads or tipple sites will be located on national forest lands without obtaining prior written approval of the forest supervisor.

HUNTINGTON CORPORATION
Lessee (Permittee)
Laurence S. Duong
By: _____
Secretary

2F-8
By: *Frederick L. Anderson*
Frederick L. Anderson, President

7/90

Form 4-696
(October 1956)

255-018

UNITED STATES
DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Land Office

Post Office Box No. 777
Salt Lake City 10, Utah

Office Salt Lake City, Utah

Serial No. Utah 024318

LEASE OF COAL LANDS UNDER THE ACT OF
FEBRUARY 25, 1920, AS AMENDED

This lease, entered into on May 1, 1958, by the United States of America, the lessor, through the Bureau of Land Management, and Huntington Corporation, Box 1001, Palo Alto, California

the lessee, pursuant and subject to the terms and provisions of the act of February 25, 1920 (41 Stat. 437), as amended, hereinafter referred to as the act, and to all reasonable regulations of the Secretary of the Interior now in force which are made a part hereof,

WITNESSETH:

Section 1. Rights of lessee.--The lessor, in consideration of the rents and royalties to be paid and the conditions to be observed as hereinafter set forth, does hereby grant and lease to the lessee the exclusive right and privilege to mine and dispose of all the coal in the following-described tracts of land, situated in the State of Utah

T. 16 S., R. 7 E., 31 Mer, Utah

T. 16 S., R. 8 E., 31 Mer, Utah

Sec. 24: SE1/4, E1/4
Sec. 25: N1/4, SW1/4, W1/4, SE1/4
Sec. 26: E1/4

Sec. 19: Lots 2, 3, 4, SW1/4, SE1/4, E1/4

containing 820.39 acres, more or less, together with the right to construct all such works, buildings, plants, structures, and appliances as may be necessary and convenient for the mining and preparation of the coal for market, the manufacture of coke or other products of coal, the housing and welfare of employees, and, subject to the conditions herein provided, to use so much of the surface as may reasonably be required in the exercise of the rights and privileges herein granted.

Sec. 2. In consideration of the foregoing, the lessee hereby agrees:

(a) Bond.--To maintain the bond furnished upon the issuance of this lease, which bond is conditioned upon compliance with all the provisions of the lease, and to increase the amount of or furnish such other bond as may be required.

(b) Rental.--To pay the lessor annually, in advance, for each acre or part thereof covered by this lease, beginning with the date hereof, the following rentals: 25 cents for the first year, 50 cents for the second, third, fourth, and fifth years, respectively, and \$1 for the sixth and each succeeding year during the continuance of the lease, such rental for any year to be credited against the first royalties as they accrue under the lease during the year for which the rental was paid.

(c) Royalty.--To pay the lessor a royalty of 15 cents on every ton of 2,000 pounds of coal mined during the first 20 years succeeding the execution of this lease. Royalties shall be payable quarterly within 30 days from the expiration of the quarter in which the coal is mined.

(d) Minimum production.--Beginning with the sixth year of the lease, except when operations are interrupted by strikes, the elements, or casualties not attributable to the lessee, or unless on application and showing made, operations shall be suspended when market conditions are such that the lessee cannot operate except at a loss or suspended for the other reasons specified in section 39 of the act, to mine coal each year and pay a royalty thereon to a value of \$1 an acre or fraction thereof. Operations under this lease shall be continuous except in the circumstances described or unless the lessee shall pay a royalty, less rent, on such minimum amount of the leased deposits, for one year in advance, in which case operations may be suspended for that year.

(e) Payments.--Unless otherwise directed by the lessor, to make rental, royalty, or other payments to the Regional Mining Supervisor of the United States Geological Survey of the region in which the leased lands are situated. All remittances must be made payable to the United States Geological Survey.

(f) Plats, reports, maps.--At such times and in such form as the lessor may prescribe, to furnish a plat showing development work and improvements on the leased lands and a report with respect to stockholders, investment, depreciation, and costs. To furnish in such form as the lessor may prescribe, within 30 days from the expiration of each quarter a report covering such quarter, certified by the superintendent of the mine, or by such other agent having personal knowledge of the facts as may be designated by the lessee for such purpose, showing the amount of leased deposits mined during the quarter, the character and quality thereof, amount of its products and byproducts disposed of and price received therefor, and amount in storage or held for sale. To keep and prepare maps of the leased lands in accordance with the regulations in 30 CFR, Part 211.

(g) Weights.--To determine accurately the weight or quantity and quality of all leased deposits mined, and to enter accurately the weight or quantity and quality thereof in due form in books to be kept and preserved by the lessee for such purposes.

(h) Inspection.--To permit at all reasonable times (1) inspection by any duly authorized officer of the Department, of the leased premises and all surface and underground improvements, works, machinery, equipment, and all books and records pertaining to operations and surveys or investigations under this lease; and (2) the lessor to make copies of and extracts from any or all books and records pertaining to operations under this lease, if desired.

(i) Assignment of lease or interest therein.--To file for approval with the office prescribed in the regulations, within 90 days from the date of final execution, any assignment, sublease, or transfer made of this lease, whether by direct assignment, working agreement, transfer of royalty interest, or otherwise. Such instrument will take effect the first day of the month following its final approval by the Bureau of Land Management, or if the assignee requests, the first day of the month of the approval.

(j) Nondiscrimination.--In connection with the performance of work under this lease, the lessee agrees not to discriminate against any employee or applicant for employment because of race, religion, color or national origin. The aforesaid provision shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The lessee agrees to post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of the nondiscrimination clause. The lessee further agrees to insert the foregoing provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials.

(k) Lands disposed of with the coal deposits reserved to the United States.--If the lands embraced herein have been or shall hereafter be disposed of under laws reserving to the United States the deposits of coal therein, to comply with all conditions as are or may hereafter be provided by the laws and regulations reserving such coal.

(l) Operations, wages, freedom of purchase.--To comply with the operating regulations (30 CFR, Part 211), to exercise reasonable diligence, skill, and care in the operation of the property, and to carry on all operations in accordance with approved methods and practices as provided in the operating regulations, having due regard for the prevention of injury to life, health or property, and of waste or damage to any water or mineral deposits; to fairly and justly weigh or measure the coal mined by each miner; to pay all wages due miners and employees, both above and below ground, at least twice each month in lawful money of the United States; to accord all miners and employees complete freedom of purchase; to restrict the workday to not exceeding eight hours in any one day for underground workers, except in cases of emergency; to employ no boy under the age of sixteen and no girl or woman, without regard to age, in any mine below the surface; unless the laws of the State otherwise provide, in which case the State laws control.

(m) Taxes.--To pay when due, all taxes lawfully assessed and levied under the laws of the State or the United States upon improvements, output of mines, or other rights, property, or assets of the lessee.

(n) Overriding royalties.--Not to create, by assignment or otherwise, an overriding royalty interest in excess of 50 percent of the rate of royalty first payable to the United States under this lease or an overriding royalty interest which when added to any other outstanding overriding royalty interest exceeds that percentage, excepting, that where an interest in the leasehold or in an operating agreement is assigned, the assignor may retain an overriding royalty interest in excess of the above limitation if he shows to the satisfaction of the Bureau of Land Management, that he has made substantial investments for improvements on the land covered by the assignment.

(o) Delivery of premises in case of forfeiture.--In case of forfeiture of this lease, to deliver up to the lessor in good order and condition the land leased, including all buildings, and underground timbering and such other supports and structures as are necessary for the preservation of the mine or deposit.

Sec. 3. The lessor expressly reserves:

(a) Rights reserved.--The right to permit for joint or several use such easements or rights-of-way, including easements in tunnels upon, through, or in the land leased, occupied, or used as may be necessary or appropriate to the working of the same or other lands containing the deposits described in the act, and the treatment and shipment of the products thereof by or under authority of the Government, its lessees or permittees, and for other public purposes.

(b) Disposition of surface.--The right to lease, sell, or otherwise dispose of the surface of the leased lands under existing law or laws hereafter enacted, insofar as said surface is not necessary for the use of the lessee in the extraction and removal of the coal therein, or to dispose of any resource in such lands which will not unreasonably interfere with operations under this lease.

(c) Monopoly and fair prices.--Full power and authority to promulgate and enforce all the provisions of section 30 of the act to insure the sale of the production of said leased lands to the United States and to the public at reasonable prices, to prevent monopoly, and to safeguard the public welfare.

(d) Readjustment of terms.--The right reasonably to readjust and fix royalties payable hereunder and other terms and conditions at the end of 20 years from the date hereof and thereafter at the end of each succeeding 20-year period during the continuance of this lease unless otherwise provided by law at the time of the expiration of any such period. Unless the lessee files objections to the proposed terms or a relinquishment of the lease within 30 days after receipt of the notice of proposed terms for a 20-year period, he will be deemed to have agreed to such terms.

(e) Waiver of conditions.--The right to waive any breach of the conditions contained herein, except the breach of such conditions as are required by the act, but any such waiver shall extend only to the particular breach so waived and shall not limit the rights of the lessor with respect to any future breach; nor shall the waiver of a particular cause of forfeiture prevent cancellation of this lease for any other cause, or for the same cause occurring at another time.

Sec. 4. Relinquishment of lease.--Upon a satisfactory showing that the public interest will not be impaired, the lessee may surrender the entire lease or any legal subdivision thereof. A relinquishment must be filed in duplicate in the appropriate land office. Upon its acceptance it shall be effective as of the date

it is filed, subject to the continued obligation of the lessee and his surety to make payment of all accrued rentals and royalties and to provide for the preservation of any mines or productive works or permanent improvements on the leased lands in accordance with the regulations and terms of the lease.

Sec. 5. Protection of the surface, natural resources, and improvements.--The lessee agrees to take such reasonable steps as may be needed to prevent operations from unnecessarily: (1) Causing or contributing to soil erosion or damaging any forage and timber growth thereon; (2) polluting the waters of springs, streams, wells, or reservoirs; (3) damaging crops, including forage, timber, or improvements of a surface owner; or (4) damaging range improvements whether owned by the United States or by its grazing permittees or lessees; and upon any partial or total relinquishment or the cancellation or expiration of this lease, or at any other time prior thereto when required by the lessor and to the extent deemed necessary by the lessor, to fill any sump holes, ditches and other excavations, remove or cover all debris, and, so far as reasonably possible, restore the surface of the leased land to its former condition, including the removal of structures as and if required. The lessor may prescribe the steps to be taken and restoration to be made with respect to lands of the United States and improvements thereon.

Sec. 6. Removal of equipment, etc., on termination of lease.--Upon termination of this lease, by surrender or forfeiture, the lessee shall have the privilege at any time within a period of 90 days thereafter of removing from the premises all machinery, equipment, tools and materials, other than underground timbering placed by the lessee in or on the leased lands, which are not necessary for the preservation of the mine. Any materials, tools, appliances, machinery, structures, and equipment, subject to removal as above provided, which are allowed to remain on the leased lands shall become the property of the lessor on expiration of the 90-day period or such extension thereof as may be granted because of adverse climatic conditions, but the lessee shall remove any or all of such property where so directed by the lessor.

Sec. 7. Proceedings in case of default.--If the lessee shall not comply with any of the provisions of the act or the regulations thereunder or default in the performance or observance of any of the provisions of this lease, and such default shall continue for a period of 30 days after service of written notice thereof by the lessor, the lessor may institute appropriate proceedings in a court of competent jurisdiction for the forfeiture and cancellation of this lease as provided in section 31 of the act (30 U.S.C., sec. 188). If the lessee fails to take prompt and necessary steps to prevent loss or damage to the mine, property, or premises, or danger to the employees, the lessor may enter on the premises and take such measures as may be deemed necessary to prevent such loss or damage or to correct the dangerous or unsafe condition of the mine or works thereof, which shall be at the expense of the lessee. However, the lessee shall not be held responsible for delays or casualties occasioned by causes beyond the lessee's control.

Sec. 8. Heirs and successors in interest.--Each obligation hereunder shall extend to, and be binding upon, and every benefit hereof shall inure to, the heirs, executors, administrators, successors, or assigns of the respective parties hereto.

Sec. 9. Unlawful interest.--No Member of, or Delegate to, Congress or Resident Commissioner, after his election or appointment, or either before or after he has qualified and during his continuance in office, and no officer, agent, or employee of the Department of the Interior, except as provided in 43 CFR 7.4(e)(1), shall be admitted to any share or part in this lease or derive any benefit that may arise therefrom; and the provisions of section 3741 of the Revised Statutes of the United States, as amended (41 U.S.C., sec. 22), and sections 431, 432, and 433, title 18, U.S. Code, relating to contracts, enter into and form a part of this lease so far as the same may be applicable.

IN WITNESS WHEREOF:

THE UNITED STATES OF AMERICA,

By *[Signature]*
(Signing Officer)

Manager Land Office MAY 1 - 1953

(Title) (Date)

HUNTINGTON CORPORATION

(Lessee's signature)

By *Laurence G. Duerig*

(Lessee's signature)

Laurence G. Duerig, Secretary

James B. [Signature]

Thomas D. [Signature]
(Witnesses to signature of lessee)

(If this lease is executed by a corporation, it must bear the corporate seal)

1952
UNITED STATES
DEPARTMENT OF THE INTERIOR
Bureau of Land Management

STIPULATION FOR LANDS UNDER JURISDICTION OF DEPARTMENT OF AGRICULTURE

The lands embraced in this lease (permit) issued under the Mineral Leasing Act of February 25, 1920 (41 Stat. 437, 30 U.S.C., 1946 ed., sec. 181 et seq.), as amended, the Mineral Leasing Act for Acquired Lands of August 7, 1947 (61 Stat. 913, 30 U.S.C., 1946 ed., Supp. III, sec. 351 et seq.) the act of September 1, 1949 (63 Stat. 683, 30 U.S.C., 1946 ed., Supp. III, sec. 192c) the act of June 30, 1950 (64 Stat. 311, 16 U.S.C., 1946 ed., Supp. IV, sec. 508(b)) or under the authority of any of the acts cited in section 402 of the President's Reorganization Plan No. 3 of 1946 (60 Stat. 1097, 5 U.S.C. 1946 ed., sec. 133 y-16, note) being under the jurisdiction of the Secretary of Agriculture, the lessee (permittee) hereby agrees:

(1) To conduct all operations authorized by this lease (permit) with due regard for good land management, not to cut or destroy timber without first obtaining permission from the authorized representative of the Secretary of Agriculture, and to pay for all such timber cut or destroyed at the rates prescribed by such representative; to avoid unnecessary damage to improvements, timber, crops, or other cover; unless otherwise authorized by the Secretary of Agriculture, not to drill any well, carry on operations, make excavations, construct tunnels, drill, or otherwise disurb the surface of the leased (permitted) lands within 200 feet of any building standing on the leased (permitted) lands and whenever required in writing by the authorized representative of the Secretary of Agriculture to fence or fill all sump holes, ditches and other excavations, remove or cover all debris, and so far as reasonably possible, restore the surface of the leased (permitted) lands to their former condition, including the removal of structures as and if required, and when required by such representative to bury all pipelines below plow depth.

(2) To do all in his power to prevent and suppress forest, brush or grass fires on the leased (permitted) land and in its vicinity, and to require his employees, contractors, subcontractors, and employees of contractors or subcontractors to do likewise. Unless prevented by circumstances over which he has no control, the lessee (permittee) shall place his employees, contractors, subcontractors, and employees of contractors and subcontractors employed on the leased (permitted) land at the disposal of any authorized officer of the Department of Agriculture for the purpose of fighting forest, brush, or grass fires on or originating on the leased (permitted) lands or on adjacent areas or caused by the negligence of the lessee (permittee) or his employees, contractors, subcontractors and employees of contractors and subcontractors, with the understanding that payment for such services shall be made at rates to be determined by the authorized representative of the Secretary of Agriculture, which rates shall not be less than the current rates of pay prevailing in the vicinity for services of a similar character: Provided, that if the lessee (permittee), his employees, contractors, subcontractors, or employees of contractors or subcontractors, caused or could have prevented the origin or spread of said fire or fires, no payment shall be made for services so rendered.

During periods of serious fire danger to forest, brush, or grass, as may be specified by the authorized representative of the Secretary of Agriculture, the lessee (permittee) shall prohibit smoking and the building of camp and lunch fires by his employees, contractors, subcontractors, and employees of contractors or subcontractors within the leased (permitted) area except at established camps, and shall enforce this prohibition by all means within his power: Provided, that the authorized representative of the Secretary of Agriculture may designate safe places where, after all inflammable material has been cleared away, campfires may be built for the purpose of heating lunches and where, at the option of the lessee (permittee), smoking may be permitted.

The lessee (permittee) shall not burn rubbish, trash or other inflammable materials except with the consent of the authorized representative of the Secretary of Agriculture and shall not use explosives in such a manner as to scatter inflammable materials on the surface of the land during the forest, brush, or grass fire season, except as authorized to do so or on areas approved by such representative.

The lessee (permittee) shall build or construct such roads or do such clearing on the leased land as the authorized representative of the Secretary of Agriculture decides is essential for forest, brush, and grass fire prevention which is or may be necessitated by the exercise of the privileges authorized by this lease (permit) and shall maintain such roads at his headquarters or at the appropriate location on the leased land.

(3) In the location, design, construction and maintenance of all authorized ditches, buildings, plants, waterways, roads, telegraph or telephone lines, pipelines, reservoirs, tanks, pumping stations, or other structures or clearances, the lessee (permittee) shall do all things reasonably necessary to prevent or reduce to the fullest extent scarring and erosion of the land, pollution of the water resources and any damage to the watershed. Where construction, operation, or maintenance of any of the facilities on or connected with this lease (permit) causes damage to the watershed or pollution of the water resources, the lessee (permittee) agrees to repair such damage and to take such corrective measures to prevent further pollution or damage to the watershed as are deemed necessary by the authorized representative of the Secretary of Agriculture.

(4) To pay the lessor (permitter) or his tenant or the surface owner or his tenant, as the case may be, for any and all damage to or destruction of property caused by lessee's (permittee's) operations hereunder; to save and hold the lessor (permitter) or the surface owner or their tenants harmless from all damage or claims for damage to persons or property resulting from lessee's (permittee's) operations under this lease (permit).

(5) To recognize existing uses and commitments, in the form of Department of Agriculture grazing, timber cutting, and special use permits, water developments, ditch, road, trail, pipeline, telephone line, and fence rights-of-way and other similar improvements, and to conduct his operations so as to interfere as little as possible with the rights and privileges granted by these permits or with other existing uses.

(6) To install and maintain cattle guards to prevent the passage of livestock in any openings made in fences by the lessee (permittee) or his contractors to provide access to the lands covered by this lease (permit) for automotive and other equipment.

(7) If lessee (permittee) shall construct any camp on the land, such camp shall be located at a place approved by the authorized representative of the Secretary of Agriculture, and such representative shall have authority to require that such camp be kept in a neat and sanitary condition.

(8) To comply with all the rules and regulations of the Secretary of Agriculture governing the national forests or other lands under his jurisdiction which are embraced in this lease (permit).

(9) Unless otherwise authorized, prior to the beginning of operations to appoint and maintain at all times during the term of this lease (permit) a local agent upon whom may be served written orders or notices respecting matters contained in this stipulation, and to inform the authorized representative of the Secretary of Agriculture, in writing, of the name and address of such agent. If a substitute agent is appointed, the lessee (permittee) shall immediately so inform the said representative.

(10) To address all matters relating to this stipulation to Regional Forester, U. S. Forest Service, Forest Service Building, Ogden, Utah.

at _____ who is the authorized representative of the Secretary of Agriculture, or to such other representative as may from time to time, be designated, provided that such designation shall be in writing and be delivered to the lessee (permittee) or his agent.

(11) If all or any part of the leased (permitted) lands lie within a municipal watershed, or are, in the opinion of the authorized representative of the Secretary of Agriculture, primarily valuable for watershed protection, the lessee (permittee) shall reseed or otherwise restore the vegetative cover, as required by the authorized representative of the Secretary of Agriculture, for watershed protection and erosion prevention on any areas damaged because of the operation.

This lease authorizes mining by underground methods only.
No roads or tipple sites will be located on national forest lands without obtaining prior written approval of the forest supervisor.

HUNTINGTON CORPORATION

Lessee (Permittee)

By Laurence G. Duerig
Laurence G. Duerig, Secretary

2F-14

Frederick L. Anderson
Frederick L. Anderson, Forester

7/90

TABLE OF CONTENTS (cont)

7.3	RECLAMATION HYDROLOGY	90
7.3.1	<u>Post-Mining Rehabilitation</u>	90
7.3.2	<u>Restoration of Natural Channels</u>	90
7.3.3	<u>Bear Creek Channel Reclamation</u>	92
7.3.4	<u>Sedimentation Ponds Reclamation</u>	94
7.4	REFERENCES	96

APPENDIXES

A	Drill Hole Logs	7A-1
B	Discharge Permit	7B-1
C	Water Rights	7C-1
D	Agreement with Huntington City	7D-1
E	Slope Stability Analysis, Sedimentation Pond "A"	7E-1
F	Computer Sizing Runs (Sedimentation Ponds, Ditches and Culverts	7F-1
G	Bear Creek Flood Stage	7G-1
H	Reclamation Channel Sizing	7H-1
I	Sedimentation Pond Certification	7I-1
J	Probable Hydrologic Consequence Determination	7J-1
K	B.T.C.A. Areas	7K-1
L	Gentry Mountain Cumulative Hydrologic Impact Assessment	7L-1

GENERAL

Upon inspection of the Mine permit area it was found that the areas described below exist in the undisturbed zones and that surface runoff going through these areas does not pass through the sediment pond treatment facilities. In order to provide adequate treatment for these areas, straw bale dikes and/or silt fences will be installed as indicated on Plate 7-1. The sediment control structures will be positioned so that surface runoff passes through them before entering Bear Creak. Treatment facilities will be maintained for each area until approved and determined that adequate revegetation cancels the need for treatment. These areas are designated as "Best Technology Currently Available" or BTCA Areas. Drainage from these areas will be monitored as possible to show compliance with the state and federal limitations.

OUTSLOPE BANK OF UPPER STORAGE PAD.

During construction of the Upper Storage Pad (Plate 7-1) some fill was apparently overcast down the face of the slope below. The area covers approximately 800 sq ft. A silt fence will be installed and maintained at the inlet to culvert C-8U. In 1991, culvert C-8U will be eliminated, and the drainage will go to Sediment pond "A". The runoff volume for this area is calculated to be 0.0013 acre ft.

AREA NEAR PORTAL NO.1

This area lies between the upper lamphouse/mine portal bermed pad and the portal access road, extending from the road junction on the south to just north of the upper office trailer at the beginning of the Cattle Co. Road. The area is approx. 0.28 acres. A silt fence is installed at the north end of the area where runoff flows down hill from the Cattle Co. Road area. Runoff from the area passes through a silt fence near the inlet to culvert C-6U. Runoff volume from this area is calculated to be 0.019 acre ft.

BALL PARK TOPSOIL PILE

The ball park covers 1.2 acres. Straw bale dikes and/or silt fences will be installed on the south east side, in line with the natural flow to treat runoff before it enters Bear creak. Runoff volume from this area is calculated to be 0.082 acre ft.

TOPSOIL STOCKPILE

The main topsoil storage pile covers approx 0.1 acres. The area is encircled by an 18 in. berm and is protected by established vegetation. Runoff volume from this area is calculated to be 0.0068 acre ft.

Note: Runoff volumes are based on the 10 yr 24 hr event of 2.25 in. and runoff CN of 82.

TABLE OF CONTENTS

8	SOIL RESOURCES	1
8.1	SCOPE	1
8.2	METHODOLOGY	1
8.3	SOIL INFORMATION	5
8.3.1	<u>Soils Identification</u>	5
8.3.2	<u>Soils Description</u>	5
8.4	PRIME FARMLAND DETERMINATION	11
8.5	SOILS, PHYSICAL AND CHEMICAL PROPERTIES	11
8.6	SELECTED OVERBURDEN MATERIALS OR SUBSTITUTES	12
8.6.1	<u>Main Topsoil Storage Pile</u>	12
8.6.2	<u>Ball Park Topsoil Storage Pile</u>	14
8.6.3	<u>Topsoil Summary</u>	18
8.7	REMOVAL, STORAGE AND PROTECTION OF SOILS	18
8.7.1	<u>Physical and Chemical Properties of Soils</u>	18
8.7.1	<u>Soil Removal, Handling, Storage, and Protection Plans</u>	19
	8.7.1.1 Topsoil Removal	
	8.7.1.2 Topsoil Stockpile	
	8.7.1.3 Topsoil Protection	
8.8	REDISTRIBUTION OF SOILS	24
8.9	NUTRIENTS AND SOIL AMENDMENTS	25
8.10	EFFECTS OF MINING OPERATIONS ON TOPSOIL, NUTRIENTS, AND SOIL AMENDMENTS	26
8.11	MITIGATION AND CONTROL PLANS	27

APPENDIXES

A	Soil Test Reports	8A-1
B	SCS Soil Survey	8B-1
C	Prime Farm Lands	8C-1
D	Substitute Topsoil Material	8D-1

LIST OF FIGURES

Figure 8.6-1	Photographs of Ball Park Area	16
Figure 8.6-2	Ball Park Topsoil Storage Pile	17

LIST OF TABLES

Table 8.6-1	Ball Park Seed List	15
Table 8.6-2	Summary Table	18
Table 8.7-1	Analytical Parameters for Baseline Soils Data	20

LIST OF PLATES

Plate 8-1	Soils Map
Plate 8-2	Topsoil Storage Pile
Plate 8-3	Topsoil Storage Pile Location
Plate 8-4	Ballpark Topsoil Pile

has been purchased to relieve the deficiencies in the present stockpile. These results are attached in Appendix 8-A.

8.6 SELECTED OVERBURDEN MATERIALS OR SUBSTITUTES

There are approx 16 acres of disturbed area at the Bear Canyon Mine site. Of the 15.63 acres, approx 3.8 acres were constructed prelaw, and although no topsoil was saved, native material is available as down-cast material. In order to show that the downcast material is adequate and suitable as final reclamation plant growth material for the 3.8 acres, procedures outlined in Appendix 8-D will be followed.

The remaining approx 12 acres of disturbance will be covered with 6 in. of topsoil during reclamation. This will require approx 9,550 cu yds of topsoil. There are two existing topsoil storage areas on site (Plate 8-3), with storage quantities that meet this requirement.

8.6.1 Main Topsoil Storage Pile

The original topsoil storage pile was located north-east of the scale house in Bear Canyon. This pile consisted of approx 2,600 cu yds of topsoil stripped from the Bear Canyon disturbance. In 1990 this pile is proposed to be moved to the location shown on Plate 8-3. During the construction of the new storage pile and culvert

extension, additional topsoil will be recovered and incorporated into the pile following methods described in Section 8.7 and other applicable section of the mine plan. Surplus suitable plant growth material will be recovered from below the original Topsoil Pile when the area is graded for the proposed Bath house and from the new topsoil pile area. The new pile will be marked and protected by a berm and vegetation to prevent soil loss (Plate 8-2) as defined in Section 8.7.1.3. With the experience of Trail Canyon and the expected condition of the material to be recovered, Co-Op is confident that the deficiency will be covered. The SCS is scheduled to do a survey of the proposed material in Oct 1990.

8.6.3 Topsoil Summary

The following table summarizes the information discussed in the previous Sections:

Table 8.6-2 Summary Table

Total mine disturbance	15.63 acres
Area with topsoil (pre-law, down-cast material)*	3.8 acres
Area requiring topsoil	11.83 acres
Topsoil required	
11.83 acres x 6 in. depth	9,545 cu yds
Topsoil stored	
Upper site	3,600 cu yds
Ball Park site	3,400 cu yds
Total topsoil available	7,000 cu yds
Additional plant growth material to be recovered**	2,545 cu yds

* Downcast material to be used as substitute plant growth material.

** If only 3 to 4 ft of additional material is available at the existing and proposed topsoil site, the Ball Park site material will not be required for reclamation.

8.7 REMOVAL, STORAGE AND PROTECTION OF SOILS

8.7.1 Physical and Chemical Properties of Soils

The 1982 Co-Op field investigations provided information on the physical and chemical properties of soils in the permit area and is discussed in Appendix A. A rating for topsoil is included on the forms, as are some chemical properties. Soils found on-site are listed in the Soils Legend and shown on Plate 8-1. In studies during the 1984 field season on site sampling was analyzed

for the required chemical properties in all horizons (see Appendix A).

8.7.1 Soil Removal, Handling, Storage, and Protection Plans

Prior to the start of all new construction, topsoil will be analyzed as outlined in Table 8.7-1, in accordance with Division recommendations to determine the extent and depth of suitable plant growth medium and will be separately salvaged and stockpiled. Topsoil is stockpiled, consolidated and protected from wind and water erosion and contamination which might lessen its capability to support vegetation. The following subsections deal specifically with the various phases of the topsoil and subsoil handling plan.

8.7.1.1 Topsoil Removal

The depth of topsoil removed previous to 1990 was determined by the amount of A and B horizon material as defined in OSM Regulation 30 CFR 783.22. Existing vegetation was removed and topsoil was collected prior to excavation or other disturbance operations within the affected areas. The topsoil removed in these areas consists of A horizon quality material and B horizon quality material with virtually no distinctive difference. The C horizon material was not removed since it was not sufficiently capable of supporting diverse vegetation due to the excessive rock.

Table 8.7-1 Analytical Parameters for Baseline Soils Data

Test to be Performed	Reported As	Suggested Methods ¹
Soil Color	Hue Value/Chroma	Munsell notation
Soil texture	% sand, silt, clay	Hydrometer method. Black et al. 1965. Methods of soil analysis. ASA Mono No. 9, Part 1, method 43-5, pages 562-566.
pH	standard units	ASA Mono. No. 9, part c (2 ed). 1982. Method 10-3.2, page 171. pH performed on saturation paste, method 10-2.3.1, page 169.
Organic Carbon	%	ASA Mono No. 9, Part 2, 1982 (2 ed). Method 29-5.3. pages 571-573.
Saturation Percentage	%	SP = 100(total wt of water)/ (wt of oven-dry soil). Wts of water and soil known when making a saturated paste.
Alkalinity	meq/ liter	Std. Methods for Examination of waters and waste water, 15 ed., 1980, Method 403.4. Bromocresol green-method red indicator.
Electrical Conductivity	mmhos/cm @ 25°C	ASA Mono. No. 9, Part 2 1982, (2 ed). Method 10-3.3, pages 172-173. Use saturation paste extract.
CaCO ₃	%	ASA Mono. No. 9, Part 2, 1982 (2 ed). Method 11-2.4, pages 188-191.

Table 8.7-1 Analytical Parameters for Baseline Soils Data (cont)

Test to be Performed	Reported As	Suggested Methods ¹
Soluble Potassium, Magnesium, Calcium & Sodium	meq/l	ASA Mono. No. 9, Part 2, (2 ed), 1982. Method 10-3.4. pages 173-174.
Sodium Adsorption Ratio ²	SAR calculated from soluble Ca, Mg & Na (meq/l)	$\frac{[Na^+]}{([Ca^{2+} + Mg^{2+}]/2)^{0.5}}$
Total N	%	ASA Mono. No. 9, Part 2 (2 ed), 1982. Method 31-3, pages 610-616.
Available Phosphorus	mg/Kg	ASA Mono. No. 9, Part 2, (2 ed), 1982. Method 24-5.4, pages 421-422.
Available Water Capacity	in/in	USDA SCS Soil Survey Investigation Report No. 1, Method 4C1, page 24.
Rock Fragments	% Volume	USDA SCS Soil Survey Investigation Report No. 1, Method 3B, page 18.

¹These are suggested methods, other equivalent methods may be used if described and can be justified prior to sampling.

²If samples have a SAR greater than 12 for clay textured soils or greater than 15 for sandy textured soils, then exchangeable sodium percentage should be analyzed.

Note: This table is from Table 1 of the Department's "Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining", April 1988.

The equipment used for topsoil removal consists of bulldozers, front-end loaders, and dump trucks. The use of bulldozers requires pushing of the topsoil to a collection point for loading into dump trucks or other means of transportation to the designated stockpile. Adequate supervisory personnel are present at the time of the topsoil removal to instruct the equipment operators in the proper techniques of topsoil removal and to ensure that required horizons are removed and stored.

8.7.1.2 Topsoil Stockpile

Plans involving topsoil storage can be labeled as "short term" or "long term" depending on completion of activities in each area and the reclamation schedule presented.

Short-Term Topsoil Storage Areas. Short-term stockpiles of topsoil will be for areas to be reclaimed almost immediately upon cutting. At final grade topsoil will be redistributed promptly to minimize natural degradation processes. No short-term piles are anticipated at this time. If a need arises, a site-specific plan will be submitted prior to disturbance.

Long-Term Topsoil Storage Areas. During any new construction of areas that will be used for the duration of the mining operation within the permit area, topsoil will be collected and stockpiled. The topsoil will be used for post-mining reclamation.

Topsoil is presently being stored within areas of the permit boundary (Section 8.6). These piles should be considered "long term".

8.7.1.3 Topsoil Protection

The short-term topsoil stockpile will be sprayed with water or temporarily vegetated to retard erosion. The long-term topsoil stockpile will be protected by the following operational steps:

1. A stable surface will be provided in an area outside the influence of active operations.
2. As a stockpile is completed, it will be left in a rough condition to minimize erosion.
3. Stockpiles will be situated out of drainages to prevent water erosion.
4. Storage piles will be vegetated with quick growing, soil-stabilizing plants. Revegetation will involve the immediate seeding of stockpiles during the next planting season with the seed mixture recommended in Section 9.5, in compliance with the requirements of the appropriate land management agency.

5. Signs will be posted to protect the stockpiles from accidental use as fill or from other inadvertent material contamination. The establishment of noxious plant species will be prevented.
6. Stockpiled topsoil will not be removed or otherwise disturbed until required for redistribution on a prepared and regraded disturbed area.

8.8 REDISTRIBUTION OF SOILS

Following backfilling and regrading (Section 3.6.4) and prior to topsoil redistribution, regraded land will be scarified by a ripper to a depth of 14 in. in order to reduce surface compaction, provide a roughened surface assuring topsoil adherence, and promote root penetration. Steep slope areas which must remain after abandonment will receive special ripping to create ledges, crevices, pockets, and screes. This will allow better soil retention and vegetation establishment.

Prior to seeding, topsoil will be distributed on areas to be reclaimed. Topsoil redistribution procedures will ensure an approx uniform thickness of 6 inches as indicated by Soil Survey - March 1980 (Appendix 8-B). Topsoil will be redistributed in the fall of the year (Oct.) suitable for establishment of permanent vegetation. A very roughened seed bed will be left in all cases.

To minimize compaction of the topsoil following redistribution, travel on reclaimed areas will not be allowed. Co-Op will exercise care to guard against erosion during and after application of topsoil and will employ wood fiber mulch and tackifiers to ensure the stability of topsoil on the graded slopes. The specific methods to be implemented are defined in Section 9.

The soil stabilization methodology that will be used includes the placement of crushed and heavier material at the toe of road fill slopes, and the random placement of large rocks and boulders on the surface. This procedure will enhance the microclimate as well as make the reclaimed area more aesthetically compatible with the undisturbed surroundings. Erosion control matting will be installed on steep slopes where it is determined that the use is required for the proper establishment of vegetation and erosion control. The detailed revegetation plan to be submitted in the last five year permit renewal prior to reclamation, will include maps showing the areas to receive matting.

8.9 NUTRIENTS AND SOIL AMENDMENTS

Chemical analysis for micronutrients will be conducted by testing soil extracts from the redistributed material as outlined in Table 8.7-1. All necessary fertilization and/or neutralizing compounds will be applied according to the results of the soil sampling and analysis program approved by the division.

8.10 EFFECTS OF MINING OPERATIONS ON TOPSOIL, NUTRIENTS, AND SOIL AMENDMENTS

Since the Bear Canyon Mine is an underground mine, the impact of mining on soils will be minor overall. The impacts of surface operations and mining facilities on soil resources consist of coverage of soil by land-fills¹ and refuse, disturbance of soils during construction activities, erosion created by removing vegetation, reduced forage growth due to nutrient degradation, reduced livestock capacity, and particulate emissions to the air.

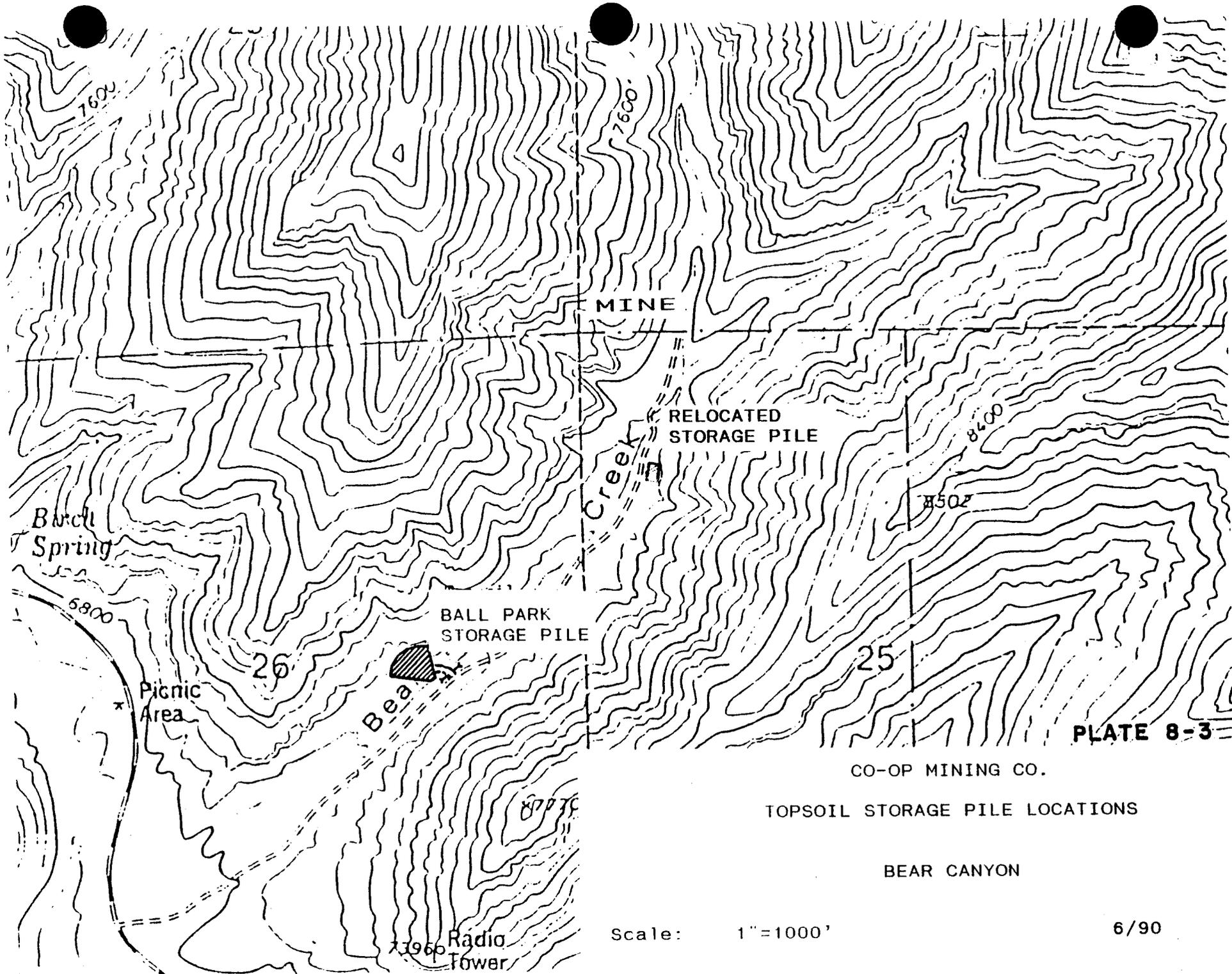
The areas in which soils have been disturbed to date within the permit area, includes the loadout area, offices, shops and substations, roads, portal areas, and the topsoil areas. Additional acreage may be disturbed in the future if Co-Op elects to proceed with certain projects it is considering.

¹Coverage of soil by landfills occurred pre-SMCRA.

8.11 MITIGATION AND CONTROL PLANS

Detailed Interim Reclamation Plans are included in Appendix 3-G of this Reclamation Plan in regard to stockpiling, long and short-term plans, and goals for final reclamation.

Co-Op is committed to take whatever steps are necessary to minimize loss of soil through erosion. Whenever rills or gullies become evident, will be filled, regraded, rip-rapped and re-seeded tackified, and mulched. This work will commence prior to any significant loss (Rills and Gullies, less than 9 in.).



MINE

RELOCATED STORAGE PILE

BALL PARK STORAGE PILE

Picnic Area

Radio Tower

Bridle Spring

Creek

26

25

PLATE 8-3

CO-OP MINING CO.

TOPSOIL STORAGE PILE LOCATIONS

BEAR CANYON

Scale: 1" = 1000'

6/90

TABLE OF CONTENTS

9	VEGETATION	1
9.1	SCOPE	1
9.2	METHODOLOGY	1
9.2.1	<u>Sample Point Selection</u>	2
9.2.2	<u>Sample Adequacy Determination</u>	2
9.2.3	<u>Vegetation Cover Estimation</u>	3
9.2.4	<u>Shrub Density and Height Estimation</u>	3
9.2.5	<u>Tree Density and Basal Area Estimation</u>	4
9.3	EXISTING RESOURCE	4
9.3.1	<u>SCS Productivity Estimates</u>	4
9.3.2	<u>Sampling Methodology</u>	5
9.3.3	<u>Vegetation Types</u>	6
	9.3.3.1 Grass Vegetation Types	
	9.3.3.2 Riparian Vegetation Types	
	9.3.3.3 Pinyon-Juniper Type	
	9.3.3.4 Sagebrush	
	9.3.3.5 Bare Cliffs and Talus	
9.4	THREATENED AND ENDANGERED SPECIES	10
9.5	VEGETATION RECLAMATION PLAN	11
9.5.1	<u>Phase 1 - Backfilling and Grading</u>	13
9.5.2	<u>Phase 2 - Site Preparation</u>	13
9.5.3	<u>Phase 3 - Seeding and Mulching</u>	13
	9.5.3.1 Drill Seeding	
	9.5.3.2 Hydroseeding	
	9.5.3.3 Mulching	
9.5.4	<u>Phase 4 - Planting</u>	17
	9.5.4.1 Planting Procedure	
	9.5.4.2 Field Storage	
9.5.5	<u>Recommended Seed Mix</u>	22
	9.5.5.1 Noxious Weeds	
9.5.6	<u>Revegetation Cost Estimate</u>	25
9.6	RECLAMATION VEGETATION MONITORING	26

APPENDIXES

A	Vegetation Analysis	9A-1
B	SCS Letter	9B-1

LIST OF FIGURES

9.5-1	Correct Planting Procedures	19
9.5-2	Seedling Storage	20

LIST OF TABLES

9.3-1	Vegetation Types	6
9.5-1	Revegetation Schedule	12
9.5-2	Suggested Ratios of Tack to Fiber	15
9.5-2	Recommended Seed Mix, Riparian-Creek Bottom	22
9.5-3	Recommended Seed Mix, Pinyon Juniper Grass	23
9.5-4	Revegetation Cost Estimate	25

LIST OF PLATES

Plate 9-1 Vegetation Map

9.5.1 Phase 1 - Backfilling and Grading

Backfilling and Grading plans are found in Section 3.6.4 of this plan. Roads will be brought back to a reasonable configuration as described in Appendix 3-D.

9.5.2 Phase 2 - Site Preparation

Site stability will be largely accomplished through the grading, compacting and the utilization of a tackifying agent. However, terracing and erosion control matting will be required on some of the steeper slopes of more than 2:1. See Section 3.6.4. Mapping of each area receiving each control measure will be submitted with the detailed revegetation plan in the last five year permit renewal prior to reclamation.

Soil redistribution and stabilization will be completed as defined in Section 8.8 of this plan.

9.5.3 Phase 3 - Seeding and Mulching

The entire area of disturbance will be drilled or hydroseeded during the first Fall following the complete abandonment and earth work (September through November). Spring seeding was considered too speculative to be implemented based on the variation in Spring moisture regimes.

9.5.3.1 Drill Seeding

The largest portion of the recontoured site will facilitate drill seeding. The balance of the area would then be hydroseeded (Section 9.5.3.1). In order to lessen compaction, a rangeland drill seeder pulled behind a small crawler tractor will be utilized. The seed mix and rate of application is given in Section 9.5.5.

All drill seeded areas will be mulched with two tons per acre alfalfa, straw or grass hay. The mulch will be certified as weed free by the county agriculture agent. Copies of this certification, along with weight tickets from a certified scale will be submitted to the Division.

9.5.3.2 Hydroseeding

Steep slopes will be seeded with a hydro-seeder or possibly hand seeded. The seed mix and rate of application is given in Section 9.5.5.

All hydroseeded or hand seeded areas, will be lightly raked to insure adequate soil/seed contact. On slopes greater than 2:1, a two step hydroseeding methods will be used. One half of the seed amount will be applied and raked and then the remaining seed will be applied.

In combination with the seed, the following rates of tackifier will be utilized:

Table 9.5-2 Suggested Ratios of Tack to Fiber

<u>slope angle (deg)</u>	<u>slope ratio (rise:run)</u>	<u>percent slope</u>	<u>lbs. Tack per ton fiber</u>	<u>ratio tack to fiber</u>
14	1 : 4	25	60(min)*	1 : 30
26	1 : 2	50	80	1 : 25
33	1 : 1 1/2	66	100	1 : 20
45	1 : 1	100	120	1 : 16
57	1 1/2 : 1	150	140	1 : 14
64	2 : 1	200	160(min)	1 : 12

* 60 pounds is suggested as a minimum to insure excellent stabilization; however, in many conditions 40 pounds of Tack per acre has given excellent results on a 1:4 or less slope.

(Rates of Tack were developed with respect to velocity and erosive power of water which is proportional to the square root of the slope.) An empirical factor was determined from laboratory and field studies to arrive at the minimum Tack fiber ratio. Thus, 60 pounds of Tack per ton of fiber is about minimum for slopes up to 20 pct and the empirical factor is determined as 60 divided 20 pct = For a 100 pct slope (1:1 or 45 degrees) the ratio of Tack to fiber is calculated as:

(100 pct) (12) = 120 pounds. Tackifier to be used for Hydroseeding and Hydromulching to Serve as Mulch or Soil Binder.

9.5.3.3 Mulching

Following the seeding effort the entire area of disturbance will be hydromulched and fertilized. The rate of application of the wood fiber mulch is:

1,200 to 1,500 lbs/acre on flat areas or gentle slopes
2,000 to 2,500 lbs/acre on slopes exceeding 3:1 (horiz
to vert) slopes

The mulch will also be fortified with Tack as previously indicated according to slope. Fertilization and/or neutralizing compounds required according to Section 8.9. will be incorporated in the mulch slurry.

9.5.5 Recommended Seed Mix

All seed obtained will comply with all state and federal seed laws. Copies of certificates for testing and poundage of seed purchased, will be submitted to the division. Any changes in the approved seed mixes will first be cleared with the Division.

Table 9.5-2 Recommended Seed Mix, Riparian-Creek Bottom

<u>Species</u>	<u>Lbs/Acre P.L.S.</u>
<u>Grasses</u>	
Phalaris arundinacea	1
Oryzopsis hymenoides	3
Stipa viridula	2
Bromus marginatus	6
Agropyron dasystachyum	5
<u>Forbs</u>	
Clematis ligusticifolia	2
Arnica cordifolia	1
Artemisia ludoviciana	.15
Vicia americana	3.5
Achillea millefolium lanulosa	.25
Melilotus officinalis	3
<u>Shrubs</u>	
Rosa woodsii	4
Rhus trilobata	3
Chrysothamnus nauseosus var. albicauiis	.5
Sambucus cerulea (raw-uncleaned)	5
TOTAL	39.4 lbs/acre

Rates are designed for hydroseeding

Drill seeded area would be 1/2 the listed application rate.

Species to be planted:

<u>Species</u>	<u>Linear Ft Spacing</u>	<u>Number per Acre</u>
Populus angustifolia	5 ft	1,072
Rosa woodsii	8 x 8	680

9.5.5 Recommended Seed Mix

All seed obtained will comply with all state and federal seed laws. Copies of certificates for testing and poundage of seed purchased, will be submitted to the division. Any changes in the approved seed mixes will first be cleared with the Division. Costs listed below were gathered from suppliers in Nov. 1990.

It is currently recommended by the State of Utah, Division of Oil, Gas & Mining (DOG M) that riparian areas such as the one in Bear Canyon Mine site not be seeded. It is often impractical to attempt to seed these narrow corridors in conjunction with the surrounding seeded areas. Instead it is recommended that the operator plant woody plant seedlings.

Table 9.5-2 Recommended Seed Mix, Riparian-Creek Bottom

<u>Scientific Name</u>	<u>Common Name</u>	<u>Plants/ac</u>	<u>Cost/ac*</u>
<u>Populus angustifolia</u>	Cottonwood	150	\$120
<u>Prunus virginiana</u>	Chokecherry	150	\$120
<u>Rosa woodsii</u>	Wood's Rose	500	\$400
<u>Sambucus caerulea</u>	Elderberry	100	\$ 80
<u>Salix spp.</u>	Willow	2000	\$400
	TOTAL	<u>2900</u>	<u>\$1120</u>

* Cost of all (except Salix spp.) estimates plant material cost only (labor not included).

Salix should be cut from a source area in close proximity to the mine site and planted in the reclaimed area. The cost of this species is based on estimated labor to accomplish this.

Table 9.5-3 Recommended Seed Mix, Pinyon Juniper Grass

<u>Scientific Name</u>	<u>Common Name</u>	<u>PLS lbs/ac</u>	<u>Cost/ac*</u>
SHRUBS			
<u>Amelanchier utahensis</u>	Serviceberry	2.0	\$64.00
<u>Artemisia tridentata</u>	Big Sagebrush (Vasey)	0.2	\$ 6.80
<u>Cercocarpus ledifolius</u>	Mtn. Mahogany	2.0	\$76.00
<u>Chrysothamnus nauseosus</u>	Rubber Rabbitbrush	0.5	\$16.50
<u>Rhus trilobata</u>	Squawbush	1.0	\$14.70
FORBS			
<u>Achillea millifolium</u>	Yarrow	0.1	\$ 1.60
<u>Aster chilensis</u>	Pacific Aster	0.2	\$18.00
<u>Hedysarum boreale</u>	Norther Sweetvetch	1.5	\$60.00
<u>Linum lewsii</u>	Lewis Flax	1.0	\$10.00
<u>Melilotus officinalis</u>	Yellow Sweetclover	1.0	\$ 0.45
<u>Pentstemon palmeri</u>	Palmer's Pentstemon	0.5	\$ 7.13
GRASSES			
<u>Elymus cinereus</u>	Gt. Basin Wildrye	3.0	\$12.15
<u>Elymus lanceolatus</u>	Thickspike Wheatgrass	2.0	\$ 4.20
<u>Elymus smithii</u>	Western Wheatgrass	3.0	\$ 9.60
<u>Elymus spicatus</u>	Bluebunch Wheatgrass	3.0	\$ 5.55
<u>Stipa hymenoides</u>	Indian Ricegrass	2.0	\$18.80
TOTAL		23.0	\$325.48

* Rates based on drill seeding pure live seed (PLS). The rate would be doubled if the seeding method employed is surface broadcasted.

After two years the seeding effort will be evaluated and planting will be instigated in the event it appears necessary to bring the density and diversity of woody species up to the confidence levels of the corresponding reference area. The same species will be planted as listed above under shrubs. In addition, the following tree species will be planted:

<u>Species</u>	<u>Number per Acre</u>	<u>Spacing within Clumps*</u>
<u>Pinus edules</u>	18	5 ft
<u>Acer glabrum torr.</u>	18	5 ft
<u>Prunus virginiana</u>	5	25 ft

* Clumps spaces at 30 yd. intervals for wildlife cover

9.5.5.1 Noxious Weeds

The following weeds are officially designated as noxious for the State of Utah, as per the authority vested in the Commissioner of Agriculture under Section 4-17-3, Utah Noxious Weed Act, and will be controlled as directed by the Emery County, Extension Agent if found within the permit area:

Bermudagrass	<u>Cynodon dactylon</u>
Bindweed	<u>Convolvulus spp.</u>
Broadleaved Peppergrass	<u>Lepidium latifolium</u>
Canada Thistle	<u>Cirsium arvense</u>
Dyers Woad	<u>Isatis tinctoria</u>
Johnson Grass	<u>Sorghum halepense</u>
Leafy Spurge	<u>Euohorbia esula</u>
Musk Thistle	<u>Carduus nutans</u>
Quackgrass	<u>Agropyron repens</u>
Russian Knapweed	<u>Centaurea repens</u>
Scotch Thistle	<u>Onopordium acanthium</u>
Whitetop	<u>Cardaria spp.</u>

9.6 RECLAMATION VEGETATION MONITORING

All reclaimed areas will be monitored to determine when bond release parameters are achieved. Success standards will be based on the reference area. Qualitative (ocular estimates) monitoring will be completed each year until bond release with the intent of identifying problem areas. Quantitative monitoring will be made during years 2, 3, 5, 9 and 10 until bond releases. Both the final reclaimed area and reference area will be sampled for cover, density (woody plants). Species composition data will be collected and compiled every two years, using cover sampling data. Productivity measurements will be collected during years 9 and 10 of the bond liability period.

The success of the reclamation effort will be evaluated by detailed sampling of cover, woody plant density and production of reference and reclaimed areas. The data from the reclaimed areas and the reference area will be collected during the same growing season. If there is no significant difference in cover woody plant density and production between the reclaimed areas and the reference areas when tested at the 90 pct significance level using a one-tailed t-test, then the areas will be judged to adequately reclaimed relative to cover and production.

Wood plant density standards will be sampled for each reference area as well as the reclaimed areas and the success of

the reclaimed area based on the results from the reference areas (90 pct pre-mining stock level survival at bond release) cover, woody plant density on reclaimed and reference areas will be measured using the same methods employed during the baseline studies. At the time of bond release, trees and shrubs, used to achieve success, will be healthy and at least 80 pct will have been in place for at least eight growing seasons. No trees and shrubs in place for less than two growing seasons will be counted in determining stocking adequacy.

Standard methods, as outlined in Chapter 9, Vegetative Resources, will be applied to determine the degree of success for revegetation attempts. Production will be measured using a Harvest methodology. Shrub density data will be collected, using 1 m x 50 m transects.

One of the greatest challenges of revegetation is to create reclaimed areas which have a large number of desirable species. Species diversity on the reclaimed areas will be encouraged by including a variety of grasses, forbs, and shrubs in seeding and planting mixes.

Species diversity will be judged adequate when the relative cover and pct distribution of biomass for the major life form groups approx that which occurs in the reference areas. That is, if the relative cover by perennial grasses is 50 pct in the

reference areas, then the relative cover by perennial grasses on the reclaimed areas should also be approx 50 pct. This same relationship should also hold true for productivity. If most of the cover and production were being provided by annual forbs on the reclaimed areas and by perennial grasses on the reference areas, then the reclamation would be judged unsuccessful.

The purpose of the above procedures is to demonstrate that based on cover, production, woody plant density, and species diversity, the disturbed areas have been returned to stable plant communities capable of withstanding the intended post-mining land use.

TABLE OF CONTENTS

3	OPERATION AND RECLAMATION PLAN	1
3.1	SCOPE	1
3.2	SURFACE FACILITIES - EXISTING	1
3.3	SURFACE FACILITIES - NEW	1
3.3.1	<u>Site Selection and Preparation of Proposed Facilities</u>	1
3.3.2	<u>Portals</u>	2
3.3.3	<u>Surface Buildings and Structures</u>	2
3.3.4	<u>Coal Handling, Storage and Loading</u>	5
3.3.5	<u>Power System, Transmission Lines and Substations</u>	5
3.3.6	<u>Water Supply System</u>	5
3.3.7	<u>Water Diversion Structures</u>	6
3.3.8	<u>Sedimentation Control and Water Treatment Facilities</u>	6
3.3.9	<u>Storage, Waste and Refuse Areas</u>	6
3.3.10	<u>Transportation, Roads and Parking Areas</u>	6
3.3.11	<u>Topsoil Storage Piles</u>	8
3.3.12	<u>Explosives Storage and Handling</u>	8
3.3.13	<u>Relocation or Use of Public Roads</u>	9
	3.3.13.1 Protective Measures	
	3.3.13.3 Cross Section	
3.3.14	<u>Total Area for Surface Disturbance During Permit Term</u>	10
3.3.15	<u>Additional Area for Surface Disturbance for Life of Mine</u>	10
3.3.16	<u>Detailed Construction Schedule</u>	10

TABLE OF CONTENTS (cont)

3.4	OPERATION	10
3.4.1	<u>Mining Plans</u>	11
3.4.1.1	Advance-Retreat Mining Procedures	
3.4.1.2	Mining Methods	
3.4.1.3	Ventilation, Water System, Dust Suppression, and Dewatering	
3.4.2	<u>Barrier Pillars</u>	17
3.4.2.1	Property Boundaries	
3.4.2.2	Outcrop Protection	
3.4.2.3	Protection of Natural Surface Structures & Streams	
3.4.2.4	Protection of Manmade Features (Surface & Subsurface)	
3.4.2.5	Protection of Oil, Gas and Water Wells	
3.4.3	<u>Conservation of Coal Resource</u>	20
3.4.3.1	Minable Reserves	
3.4.3.2	Recovery Factors	
3.4.4	<u>Equipment Selection</u>	29
3.4.4.1	Surface Equipment	
3.4.5	<u>Mine Safety, Fire Protection and Security</u>	29
3.4.5.1	Signs	
3.4.5.2	Fences and Gates	
3.4.5.3	Hazardous and Flammable Materials Contingency Plan	
3.4.5.4	Compliance with Regulations	
3.4.6	<u>Operations Schedule</u>	35
3.4.6.1	Annual Production for Permit Time	
3.4.6.2	Operating Schedule	
3.4.6.3	Employment	

TABLE OF CONTENTS (cont)

3.5	ENVIRONMENTAL PROTECTION	37
3.5.1	<u>Preservation of Land Use</u>	37
3.5.1.1	Projected Impacts of Mining on Current and Future Land Use	
3.5.1.2	Control Measures to Mitigate Impacts	
3.5.2	<u>Protection of Human Values</u>	40
3.5.2.1	Projected Impact of Mining on Human Values, Historical and Cultural	
3.5.2.2	Control Measures to Mitigate Impacts	
3.5.3	<u>Protection of Hydrologic Balance</u>	41
3.5.3.1	Control Measures to Mitigate Impacts	
3.5.4	<u>Preservation of Soil Resources</u>	44
3.5.4.1	Projected Impacts of Mining on Soil Resources	
3.5.4.2	Control Measures to Mitigate Impacts	
3.5.5	<u>Protection of Vegetative Resources</u>	47
3.5.5.1	Projected Impacts of Mining on Vegetative Resources	
3.5.5.2	Mitigating Measures to be Employed to Reduce Impacts on Vegetative Resources	
3.5.5.3	Monitoring Procedures	
3.5.6	<u>Protection of Fish and Wildlife</u>	50
3.5.6.1	Projected Impacts of Mining on Fish and Wildlife	
3.5.6.2	Mitigating Measures to be Employed to Protect Fish and Wildlife	
3.5.6.3	Monitoring Procedures	
3.5.7	<u>Protection of Air Quality</u>	55
3.5.7.1	Projected Impacts of Mining Operation on Air Quality	
3.5.7.2	Mitigating Measures to be Employed to Control Air Pollutants	
3.5.7.3	Air Quality Monitoring Plan	
3.5.8	<u>Waste Disposal Plans (Spoils, Coal Processing Wastes, Mine Development Wastes, Non-coal Wastes, Removal Handling and Storage.</u> . . .	57

TABLE OF CONTENTS (cont)

3.6	RECLAMATION PLAN	59
3.6.1	<u>Contemporaneous Reclamation</u>	61
3.6.2	<u>Soil Removal and Storage</u>	61
3.6.3	<u>Final Abandonment</u>	61
3.6.3.1	Sealing of Mine Openings. Drill Holes, Wells, etc.	
3.6.3.2	Removal of Surface Structures	
3.6.3.3	Disposition of Dams, Ponds and Diversions	
3.6.4	<u>Backfilling and Grading Plans</u>	68
3.6.4.1	Recontouring	
3.6.4.2	Removal or Reduction of Highwall	
3.6.4.3	Terracing and Erosion Control	
3.6.4.4	Soil Redistribution and Stabilization	
3.6.5	<u>Revegetation Plan</u>	77
3.6.5.1	Mulching	
3.6.5.2	Irrigation	
3.6.5.3	Management	
3.6.5.4	Vegetative Monitoring	
3.6.6	<u>Schedule of Reclamation</u>	80
3.6.7	<u>Reclamation Monitoring</u>	81
3.6.8	<u>Reclamation Bonding</u>	83
3.6.8.1	Detailed Timetable for Completion of Major Reclamation Processes	
3.6.8.2	Reclamation Cost and Bonding	
3.6.8.3	Modifications to Bonding	
3.6.9	<u>Alluvial Valley Floor Determination R614-302- 320</u>	93
3.6.10	<u>Temporary Cessation</u>	94
3.6.10.1	Temporary Portal Seals	

APPENDIXES

A	Existing Structures	3A-1
B	Culinary Water System	3B-1
C	Fee Property Lease Addition	3C-1
D	Road Reclamation Plan	3D-1
E	Toxic Materials & Handling	3E-1
F	Slope Stability Analysis	3F-1
G	Interim Reclamation Plan	3G-1
H	Renewable Resource Survey and Subsidence	3H-1
I	Blind Canyon Intake and Fan Portals	3I-1
J	Upper Bear Canyon Intake Portal and Emergency Escapeway	3J-1
K	Sediment Pond Material	3K-1

LIST OF FIGURES

3.4-1	Typical Panel Recovery	14
3.4-2	Typical Pillar Extraction	15
3.4-3	Coal and Geography Map, Hiawatha NE Quadrangle	23
3.4-4	Core Samples Measurements	24
3.4-5	Core Samples Measurements	25
3.4-6	Core Samples Measurements	26
3.6-1	Typical Portal Seal	65
3.6-2	Typical Slope Reclamation	70

LIST OF TABLES

3.4-1	Coal Reserves - Bear Canyon Mine	27
3.4-2	Sign Maintenance	31
3.4-3	Scheduled Sequence of Underground Activity	36

The Bear Canyon Haul Road is a primary road approx 1800 ft long from the gate to the scale house. The road is 30 ft wide and crowned in the middle (Plate 3-5). Drainage is provided by ditches on each side and culverts are installed where needed.

The mine area/portal access road is a primary road, approx 2,112 ft long and drainage structures are also in place (Plates 3-1 and 3-5). Three other primary roads provide access to the Sediment Pond A, the coal preparation facility and to the bathhouse. Sections of these three roads are found on Plate 3-1a.

There is one ancillary (jeep trail) road shown near the portal on plate 2-4, but it is not in use.

Roads are maintained in such a manner that the performance standards will be met throughout the life of the entire transportation facility, including maintenance of the surface, shoulders, parking and side areas, and erosion control structures for safe and efficient utilization of the road.

Reclamation of roads and parking areas is treated in the same manner as other working areas. Any asphalt or treated surfaces will be removed prior to rehabilitated upon completion of mining. See Plates 3-1, 3-1a, 3-2 and 3-5, and road agreement under Appendix 3-D.

3.5.1.1 Projected Impacts of Mining on Current and Future Land Use

The tentative acreage to be disturbed for each activity described above are as follows:

Mine Shop Area	1.76	acres
Mine Access Road	2.15	acres
Portal Conveyor and Pad Areas	9.4	acres
Sediment Treatment Area	.5	acres
Scale Area	<u>1.82</u>	<u>acres</u>
Total	15.63	acres

The management objectives and the impacts from the Bear Canyon Mine pertaining to these objectives are described in detail in Chapter 4.

Impacts. Approx 16 acres of soil will be disturbed within the permit area. This includes loadout areas, offices, shops and substations, roads, portal areas, bath house and the topsoil storage area. The reduction in desirable plant species will temporarily reduce forage production and wildlife capacities. The short-term negative impact of vegetation removal would be outweighed by the positive impacts of revegetation and improved fire protection and prevention.

Wildlife in the area will adapt to the operation in a relative short time as witnessed by existing coal operations. Proposed construction may temporarily disrupt wildlife if human disturbance

is not kept to a minimum. These topics are discussed in detail in the Wildlife Report, Chapter 10.

3.5.1.2 Control Measures to Mitigate Impacts

Reclamation activities in the permit area will be directed toward minimizing the overall impact of coal mining. This can be accomplished by careful planning of the disturbed areas that must be later reclaimed. Reclamation activities are defined in Section 3.6.

The proposed mine surface operation facility area, will be returned to a wildlife/grazing habitat at the conclusion of the mining operation. The pre-mining and proposed post-mining uses are therefore identical for all areas (Chapter 4).

3.5.2 Protection of Human Values

There are no public parks nor historical sites worthy of preservation in the permit area.

- b. Water rights could be purchased for springs damaged by Co-Op, or, alternate water shares could be substituted (Appendix 7-C).
- c. A well could be drilled at the affected site to provide an alternate supply (since artisan conditions do not exist).
- d. Water produced in the mine could be piped to the affected site.
- e. Water shares presently owned could be transferred.

Alternative d. may mean treating of poorer quality water and pumping to overcome elevation differences.

In the unlikely event that mining adversely affects a water source, Co-Op will select an alternative after considering all possibilities of each site-specific circumstance. Forest Service approval will be obtained for water effected on Federal Lease U-024316.

3.5.4 Preservation of Soil Resources

Co-Op is prepared to meet the requirements specified by 30 CFR 784.15. Backfilling, soil stabilization, compacting, grading and any other necessary operations will be performed when necessary with the best technology available, as approved by the regulatory agency. Section 3.6, Reclamation Plan, provides a detailed

discussion of the reclamation effort.

3.5.4.1 Projected Impacts of Mining on Soil Resources

Since the Bear Canyon Mine is an underground mine at the site of an old works, the overall impact of mining on soils will be minor. The impacts of surface operations and mining facilities on soil resources consist of coverage of soil by facilities, disturbance of soils during construction activities, erosion created by removing vegetation, reduced forage growth due to nutrient degradation, reduced wildlife capacity and particulate emissions to the air. However, the abandoned mine had large accumulations of debris which has now been cleaned up, which to a large degree constitutes enhancement.

3.5.4.2 Control Measures to Mitigate Impacts

The objectives of the proposed backfilling as soon as operation are concluded in each disturbed area, the removed topsoil will be redistributed on the site in a 6 in. uniform lift. Methods and techniques are detailed in Section 3.6.4.4, Soil Redistribution and Stabilization.

Topsoil Removal and Protection. Before new construction or mining activity that will disturb the surface of undisturbed areas, topsoil will be removed from the effected area. Vegetation

will first be removed, then topsoil will be segregated from other materials, removed and stockpiled separately in a stable approved site within the permit area. The stockpile will be protected from erosion, compaction, or contamination and will be stabilized with interim revegetation procedures.

Backfill, Compaction and Grading. Disturbed surface areas will be backfilled, compacted and graded according to the approved time schedule. Wherever possible, backfilling will return the various soil horizons to their original site and make them compatible with surrounding areas. Compaction will help the returned soils remain in place. Grading will restore the contour to as near the original state as possible. Post Mining Topography is shown on Plate 3-2.

Since this mine produces no acid-forming or toxic-forming materials, backfilling required to cover such materials will be limited (Appendix 3-E).

Physical and Chemical Soil Stabilization. Soils will be stabilized by physical and chemical methods before planting. This will include placement of crushed heavy material at the top of road-fill slopes, for example. Other approved and proven methods will be

employed as necessary. Chemical stabilization will include the addition of neutralizing chemicals to soils shown to be excessively acidic or basic. Nutrients and soil amendments will be added in the amounts indicated by soil testing (Section 8.9) so approved post-mining land use can be sustained.

Biological Soil Stabilization. Returned soils will be stabilized biologically by revegetation of disturbed areas. This stabilization effect will be accomplished by the new vegetative cover, particularly small shrubs and trees. This aspect of soil stabilization will begin as soon as topsoil is redistributed. Section 3.6.5, Revegetation Plan, provides specific detail on the aspect of the reclamation plan.

3.5.5 Protection of Vegetative Resources

Co-Op has maintained a commitment to reclaim the unused disturbed areas to the extent of the cover of the natural vegetation on the mine plan area. Chapter 9, Vegetative resources, provides a preliminary report on the vegetative resources of the area.

3.5.5.1 Projected Impacts of Mining on Vegetative Resources

Since the Bear Canyon Mine is an underground mine, the overall impact on surface vegetation is minor. The effects of surface operations on vegetation from new construction areas, on-site

erosion and reduction of desirable plant species which will reduce forage production and wildlife capacity.

Vegetated areas adjacent to the disturbed areas are protected from coal fines primarily by utilization of dust controls, such as water sprays on the coal handling facilities and watering of the coal haul roads. One of the major areas, located in the canyon below the Upper Storage Pad, does show past impact from coal fines; however, it is not established that this impact is negative or detrimental to the vegetation. As an added precaution, however, this area is planned to be drained into the sediment pond in 1991, to prevent possible coal fine accumulation from reaching Bear Creek.

Waste dumping or other disturbance on undisturbed areas is not permitted. Disturbed area perimeter markers delineate the boundaries of disturbance. Employees are trained not to dump or otherwise disturb areas outside those boundaries.

It is not felt that monitoring of these areas by photos is necessary, or even feasible, since long-range photos would give only a very general overview, and close-up photos would be so specific to a small area as to not be representative. In lieu of photo monitoring, it is proposed to visually check the areas on at least a yearly basis, and if it appears that coal fine accumulation or other impacts are occurring from the operation, additional

R614-301-528.330 Disposal of Non-Coal Waste. Co-Op has undertaken a massive clean-up operation wherein large quantities of scrap have already been removed from the permit area. This operation was completed (1 Sept 1983) the balance of the salvageable equipment is being stored in the designated area.

The equipment which is not scrapped out is temporarily stored in the storage yard in Bear Canyon. This site is situated in such a manner to insure that whatever runoff results from the area will pass through designated sediment facilities.

The non-coal waste (other than rock refuse) generated in the operation of the mine is placed in metal dumpsters which are strategically located on the property. A local trash collector is contracted to replace these bins when they are approx 80 pct full,

Appendix 3-E addresses a comprehensive plan to handle toxic or contaminated material in the course of reclamation.

vegetation standard is achieved, the sediment control structures will be removed.

3.6.1 Contemporaneous Reclamation

Interim Reclamation (during operations) has occurred in areas that are no longer needed or that require short term stabilization. These areas were seeded and mulched. Other areas may be reclaimed at different times during the operation as specific activities are concluded (Appendix 3-G). This same procedure will apply to any area which becomes available during the life of the mine, and will be implemented upon the first available favorable season.

3.6.2 Soil Removal and Storage

Topsoil material has been removed from disturbed areas, prior to 1990, as described in Sec 8.7 (Removal, Storage and Protection of Soils), of this plan. Prior to the start of any new construction, topsoil material will be analyzed, salvaged and stockpiled according to the procedures discussed in the same section.

3.6.3 Final Abandonment

Co-Op anticipated that the post-mining land uses of the permit area will be the same as the pre-mining. State and local governments have not proposed any land use changes for the post-mining period.

3.6.4 Backfilling and Grading Plans

The objective of the proposed backfilling, soil stabilizing, compacting, contouring and grading process is to achieve a reclaimed surface which will provide a variety of topographic features and enhance post-mining land use.

The steps to be taken in the backfill, soil stabilization, compaction, contouring and grading problems are described in the following subsections. Stability analysis of highwalls and backfilled areas are discussed in Appendix 3-F.

Backfilling operations, utilizing equipment such as rubber-tired scrappers, bulldozers, backhoes, front-end loaders and dump trucks, will be conducted in the portal and treatment facility areas. Holes or depressions will be filled when the mining operation is concluded. Compaction operations utilizing equipment such as sheeps-foot tampers, will be conducted to stabilize all filled holes and depressions.

In general, the backfilling and grading operation will take place in the following manner:

- a. All mining portals will be sealed and backfilled as previously described in Section 3.6.3.1.

implemented in areas deemed hazardous for equipment and or in sensitive areas such as along Bear Creek where down cast material could adversely effect the drainage. This, in turn, decreases the impact on adjacent watersheds and improves quality of surface waters.

Those areas which are terraced provide a more favorable ecosystem than that of an equivalent slope. It facilitates better utilization of grasses and forage for grazing animals; to some degree it modifies climate in that severity of wind and weather is somewhat diminished. Also, the cut face acts in much the same as a snow drift fence does in trapping and causing small areas of snow

The need to terrace all of the steeper slopes within the mine plan area currently is not anticipated. Erosion control measures to be employed, will be specific to each situation. Mulching, silt fences, straw, etc. will be used as described in Section 7.2.6, to reduce and limit rainfall/erosion impacts.

3.6.4.4 Soil Redistribution and Stabilization

Soil redistribution and stabilization will be completed as defined in Section 8.8 of this plan. Co-Op will exercise care to guard against erosion during and after application of topsoil and will employ the necessary measures to ensure the stability of topsoil on graded slopes.

In addition to the vegetative stabilization discussed in Section 3.6.5, Revegetation Plan, physical stabilization of the soil is also planned. The specific methods to be implemented are defined in Chapter 8 and 9.

3.6.5 Revegetation Plan

All disturbed areas will be planted and revegetated during the first appropriate season following grading and topsoil redistribution procedures and will include, the addition of remedial soil treatments. A permanent, diverse vegetative cover, using approved seed mixes listed in Chapter 9, Section 9.5, will be established on all reclaimed areas. See Section 9.4 for full reclamation revegetation plan.

The operator will submit a detailed revegetation plan in the last Five-Year Permit Renewal prior to reclamation. The plan will include detailed map(s) of sufficient scale to show exact areas and methods of revegetation (i.e., drill seeding, terraces, netting, etc...) based on the best available technology and final mine site conditions.

Gently sloping and flat areas will be seeded with a drill seeder. Steeper slopes will be seeded with a hydroseeder or by hand. Many shrubs and all trees will be planted by hand setting to ensure a permanent plant cover.

Seedlings will be planted in Apr - May or Sept - Oct depending on availability and sequence of completion, plants will be grouped to provide wildlife cover. Spacing within the group is defined in Chapter 9 and will be correlated to the reference area.

3.6.5.1 Mulching

On all reclaimed areas a wood fiber mulch will be used to enhance moisture retention required for seed germination. Tackifier will be added to the mulch to help it adhere to the soil. A min of 60 lbs tackifier/ton fiber will be applied, with steeper sloping areas requiring more as shown in Section 9.5. Some steeply sloped areas may require erosion control matting. These areas will be noted on the detailed revegetation plan and maps to be submitted in the last Five-Year Permit Renewal prior to reclamation.

3.6.5.2 Irrigation

Since the species used for reclamation are known for their survival characteristics, it is felt that artificial application of additional water will not be required. Should lower than average precipitation or irregularities in distribution of precipitation occur following the initiation of reclamation procedures which temporarily precludes vegetation establishment, a preferred course of action would be to replant problem areas.

3.6.8 Reclamation Bonding

BOND

CO-OP MINING COMPANY

BEAR CANYON MINE

ACT/015/025, EMERY COUNTY, UTAH

3.6.8.1 Detailed Timetable for Completion of Major Reclamation Processes

The following schedule of reclamation is proposed to be initiated within 90 days (weather permitting) of final abandonment of the mining operation:

	<u>Actual Time</u>
a. Seal Portal - 1 week	1 week
b. Remove Structures - 2.5 weeks	3.5 weeks
c. Soil Placement (backfilling and grading)	
1. Upper Pad - 1 weeks (including road)	4.5 weeks
2. Channel Restoration - 1.5 weeks	6 weeks
3. Lower Pad and Diversions - 1.5 weeks (including road)	7.5 weeks
d. Seed-bed Material and Handling - 1 week	8.5 weeks
e. Reseeding and Fertilizing - 1 week	9.5 weeks
f. Mulching - .5 week	10 weeks
g. Protective Fencing - 2 weeks (concurrently)	10 weeks

Summary of Reclamation Cost Estimate

a.	Seal Portals and Backfill	\$ 35,000.00
b.	Removal Structures	\$ 32,595.00
c.	Solid Waste Removal	\$ 2,451.44
d.	Soil Placement (backfilling and grading)	\$ 42,760.00
e.	Channel Restoration	\$ 16,892.24
f.	Drill Seeding	\$ 7,128.00
g.	Hydroseeding	\$ 11,669.00
h.	Riparian Area Seeding	\$ 2,210.00
i.	Baseball Park Seeding	\$ 3,495.00
j.	Retaining Wall Removal	\$ 442.66
k.	Borehole Plugging	\$ 343.40
l.	Maintenance and Monitoring of Subsidence, Vegetation and Erosion (10 yr bond liability period)	\$ 19,460.00
m.	Hydrology Monitoring (10 yr bond liability period)	\$ 23,072.00
n.	Supervision (10 weeks)	\$ 9,640.00
o.	Mobilization and Demobilization	<u>\$ 2,500.00</u>
		\$209,658.74
	10 pct Contingency	<u>\$ 20,965.87</u>
	(1990 dollars)	\$230,624.61

Escalated Values

1991 -	\$234,868
1992 -	\$239,190
1993 -	\$243,591
1994 -	\$248,073
1995 -	\$252,637

Escalation Factor

1.84%	(actual)
1.84%	(est)

An irrevocable letter of credit was posted in July 1990 for \$290,000 by Co-Op (C. W. Mining Co.).

NOTE: Section 3.6.8.3 modification and adjustment

Reclamation Costs (cont)

	<u>Cross Conveyor</u>		
	Labor - 3 men x 176.80/day x 1 day	\$	530.40
	Equipment (hauling) truck + operator x 6 hrs x 70.48/hr		422.88
	Loader + operator x 8 hrs x \$118.30 (950B - 2 1/2 cu. yd. bucket)		946.40
	Crane - 2 hrs. @ \$101.70/hr.		<u>203.40</u>
	Subtotal	\$	2,103.08
c.	Waste Removal		
	Labor - 2 men x \$176.80/day x 4 days	\$	1,414.40
	Hauling - truck + operator x 8 hrs x \$70.48/hr		563.84
	Loader (+ operator) - 4 hrs x \$118.30		<u>473.20</u>
	SUBTOTAL	\$	2,451.44
d.	Soil Placement and Seed-Bed Material & Handling		
	SUBTOTAL	\$	42,760.00
e.	Channel Restoration (pulling culverts, reshaping channel, rip- rap and gabion structures)		
	Backhoe + operator x \$221.33 x 48 hrs	\$	10,623.84
	Labor - 4 men x \$176.80/day x 4 days		1,414.40
	Cat x 1 day @ \$124.50/hr		996.00
	Gabion Structures @ \$63.00/sy (53.3 sy)		3,358.00
	Miscellaneous Rip-rap- \$500.00		<u>500.00</u>
	SUBTOTAL	\$	16,892.24
f.	Drill Seeding (Section 9.5)		
	8 acres x \$ 891.00/acre		
	SUBTOTAL	\$	7,128.00
g.	Hydroseeding (Section 9.5)		
	7 acres x \$1,667.00/acre		
	SUBTOTAL	\$	11,669.00
h.	Riparian Area Planting (Section 9.5)		
	1 acre x \$2,210.00/acre		
	SUBTOTAL	\$	2,210.00

and siltation, air and water pollution, and damage to public or private property.

The road is located along the canyon floor above the stream, and along the stable slope leading to the portals. The overall grade of the road does not exceed 1:V:10h (10 pct) and the maximum pitch grade does not exceed 1V:6.5h (15 pct). The horizontal alignment is consistent with the existing topography and with the volume, speed, and weight of anticipated traffic.

As mentioned earlier, the initial road was constructed under pre-law conditions, using the cut/fill side-cast method. A stability analyses was performed on the road by Dames & Moore in 1981 (Appendix 3-F). Their conclusion was that the Bear Canyon Portal Access Road has a stability factor of safety of a minimum of 1.43, and ranges upward to 2.15.

There are 3 other Primary roads within the Permit Area. Following is a description of each of these:

- a. Road to Sediment Pond A. This road is 430 ft long and was constructed to allow access to the Sediment Pond and to facilitate cleaning of the drainage to the pond. The road is in actuality the disturbed drainage ditch to sediment "Pond A", and is used infrequently to clean sediment from "Pond A". The road has an overall slope of approximately 4.0 pct and does not exceed 15 pct at any point. The horizontal alignment

is consistent with the existing topography and with the volume, speed, and weight of anticipated traffic.

- b. Road to the Coal Preparation Facility. This road is 600 ft long, and was constructed to provide access to the Coal Preparation Facility. The road has an overall slope of approximately 10.0 pct, and does not exceed 15 pct at any point. The horizontal alignment is consistent with the existing topography and with the volume speed, and weight of the anticipated traffic.

- c. Bathhouse Road. This road is 160 ft long, and provides access to the bathhouse. The road has an overall slope of approximately 3.0 pct, and does not exceed 15 pct at any point. The horizontal alignment is consistent with the existing topography and with the volume, speed, and weight of the anticipated traffic.

Ditches and culverts have been added to the roads to control run-off and safely pass the run-off from a 10-year, 24-hour precipitation event. (see Plates 3-1 and 3-5). Ditches shall be maintained at a minimum depth of 1.8 ft, and at least 30 in. of headwater depth will be maintained at the inlet of the 18 in. culverts. Culverts are fitted with trash racks to prevent plugging, and buried and compacted a minimum of 30 in. to prevent crushing. In areas where velocities of run-off exceed 5 fps,

erosion protection such as straw bales at 100 ft intervals or 6 in. median diameter rip rap on a bed of 2 in. gravel/sand 6 in. thick shall be maintained. Rock or concrete headwalls shall be provided at the inlet to all culverts, and rip rap or other erosion protection shall be provided at the outlet.

The roads are surfaces with 4 in. of -3/4 gravel, and is maintained in such a manner that the approved design standards are met throughout the life of the facility. Damage to the roads from use or weather events shall be promptly repaired.

These roads shall be removed upon completion of the mining operation. The timing and procedure of removal and reclamation is discussed in detail under the Backfilling and Grading Plan in Sec. 3.6.4.

(Ancillary Roads

The only Ancillary Road on the permit area is a jeep trail that was constructed pre-law, probably as a cattle trail. This road is shown on Plate 2-2, Surface Facilities Map. The road is blocked off and is not used; therefore, no maintenance or reclamation plan is proposed for this trail.

TOXIC MATERIALS & HANDLING

Any material that is contaminated with coal, as determined by visual observation, will be placed against the highwall and buried beneath a min of 2 ft of fill material during reclamation. Material that is contaminated with oil or grease or any other potentially acid or toxic matter, as determined by visual means, will be placed against the highwall and covered with a min of 4 ft fill, top soiled, and reclaimed. Interim isolation of such material will be by use of berms created by a backhoe or loader.

Since the roof material from the mine has shown a high SAR value, any roof rock that is stored on the surface will be isolated by a berm as long as it is stored on site. During reclamation, this material will be placed against the top of the highwall and covered with a minimum of 4 ft of material, covered with required plant growth medium and revegetated.

Covering Coal and Acid and Toxic Forming materials

The pH, acid-base potential, texture and electrical conductivity of these materials must be included on the date reported.

Co-Op reply. Co-Op submitted a sample to CT&E testing for this data and the results are included attached. Co-Op will commit to removing any and all such material or disposing of them in a manner

METHODOLOGY

Phase 1 - Earth Moving

The pad down slopes will be brought back to a reasonable configuration by implementation of a crawler tractor. The actual method will involve smooth contouring of the existing soil and walking the crawler up and down the slope attempting to minimize compaction while at the same time creating small indentations by the grouser on the track. This methodology creates an enhanced micro-climate for the establishment of seed and guarantees sufficient compaction as to assure integrity and stability of embankment and prohibit failure.

Phase 2 - Seeding and Mulching

The entire disturbed area will be hydroseeded during the mid fall season with a Target completion date of 15 October. The seed mix and rate of application for interim reclamation is shown in Table 3G-1. Hydro-seeding and mulching will be carried out in conjunction with the earth work of Phase 1. All hydroseeded or hand seeded areas will be lightly raked to insure adequate soil/seed contact. Recommendations for the hydroseeding and mulching operation are shown in Table 3G-2.

4-696
October 1956)

255-012

UNITED STATES
DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Land Office
Post Office Box No. 777
Salt Lake City 10, Utah

Office Salt Lake City, Utah

Serial No. Utah 024316

LEASE OF COAL LANDS UNDER THE ACT OF
FEBRUARY 25, 1920, AS AMENDED

This lease, entered into on May 1, 1958, by the United States of America, the lessor, through the Bureau of Land Management, and Huntington Corporation, Box 1001, Palo Alto, California

the lessee, pursuant and subject to the terms and provisions of the act of February 25, 1920 (41 Stat. 437), as amended, hereinafter referred to as the act, and to all reasonable regulations of the Secretary of the Interior now in force which are made a part hereof,

WITNESSETH:

Section 1. Rights of lessee.--The lessor, in consideration of the rents and royalties to be paid and the conditions to be observed as hereinafter set forth, does hereby grant and lease to the lessee the exclusive right and privilege to mine and dispose of all the coal in the following-described tracts of land, situated in the State of Utah

- T. 16 S., R. 7 E., SL Mer, Utah
- Sec. 10: ~~W 1/2, S 1/2, S 1/4, S 1/8~~
- Sec. 11: All
- Sec. 12: ~~W 1/2~~
- Sec. 13: ~~W 1/2~~
- Sec. 14: ~~E 1/2, NE 1/4~~

containing 1,800 acres, more or less, together with the right to construct all such works, buildings, plants, structures, and appliances as may be necessary and convenient for the mining and preparation of the coal for market, the manufacture of coke or other products of coal, the housing and welfare of employees, and, subject to the conditions herein provided, to use so much of the surface as may reasonably be required in the exercise of the rights and privileges herein granted.

Sec. 2. In consideration of the foregoing, the lessee hereby agrees:

(a) Bond.--To maintain the bond furnished upon the issuance of this lease, which bond is conditioned upon compliance with all the provisions of the lease, and to increase the amount of or furnish such other bond as may be required.

(b) Rental.--To pay the lessor annually, in advance, for each acre or part thereof covered by this lease, beginning with the date hereof, the following rentals: 25 cents for the first year, 50 cents for the second, third, fourth, and fifth years, respectively, and \$1 for the sixth and each succeeding year during the continuance of the lease, such rental for any year to be credited against the first royalties as they accrue under the lease during the year for which the rental was paid.

(c) Royalty.--To pay the lessor a royalty of 15 cents on every ton of 2,000 pounds of coal mined during the first 20 years succeeding the execution of this lease. Royalties shall be payable quarterly within 30 days from the expiration of the quarter in which the coal is mined.

(d) Minimum production.--Beginning with the sixth year of the lease, except when operations are interrupted by strikes, the elements, or casualties not attributable to the lessee, or unless on application and showing made, operations shall be suspended when market conditions are such that the lessee cannot operate except at a loss or suspended for the other reasons specified in section 39 of the act, to mine coal each year and pay a royalty thereon to a value of \$1 an acre or fraction thereof. Operations under this lease shall be continuous except in the circumstances described or unless the lessee shall pay a royalty, less rent, on such minimum amount of the leased deposits, for one year in advance, in which case operations may be suspended for that year.

(e) Payments.--Unless otherwise directed by the lessor, to make rental, royalty, or other payments to the Regional Mining Supervisor of the United States Geological Survey of the region in which the leased lands are situated. All remittances must be made payable to the United States Geological Survey.

(f) Plats, reports, maps.--At such times and in such form as the lessor may prescribe, to furnish a plat showing development work and improvements on the leased lands and a report with respect to stockholders, investment, depreciation, and costs. To furnish in such form as the lessor may prescribe, within 30 days from the expiration of each quarter a report covering such quarter, certified by the superintendent of the mine, or by such other agent having personal knowledge of the facts as may be designated by the lessee for such purpose, showing the amount of leased deposits mined during the quarter, the character and quality thereof, amount of its products and byproducts disposed of and price received therefor, and amount in storage or held for sale. To keep and prepare maps of the leased lands in accordance with the regulations in 30 CFR, Part 211.

(g) Weights.--To determine accurately the weight or quantity and quality of all leased deposits mined, and to enter accurately the weight or quantity and quality thereof in due form in books to be kept and preserved by the lessee for such purposes.

(h) Inspection.--To permit at all reasonable times (1) inspection by any duly authorized officer of the Department, of the leased premises and all surface and underground improvements, works, machinery, equipment, and all books and records pertaining to operations and surveys or investigations under this lease; and (2) the lessor to make copies of and extracts from any or all books and records pertaining to operations under this lease, if desired.

(i) Assignment of lease or interest therein.--To file for approval with the office prescribed in the regulations, within 90 days from the date of final execution, any assignment, sublease, or transfer made of this lease, whether by direct assignment, working agreement, transfer of royalty interest, or otherwise. Such instrument will take effect the first day of the month following its final approval by the Bureau of Land Management, or if the assignee requests, the first day of the month of the approval.

(j) Nondiscrimination.--In connection with the performance of work under this lease, the lessee agrees not to discriminate against any employee or applicant for employment because of race, religion, color or national origin. The aforesaid provision shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The lessee agrees to post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of the nondiscrimination clause. The lessee further agrees to insert the foregoing provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials.

(k) Lands disposed of with the coal deposits reserved to the United States.--If the lands embraced herein have been or shall hereafter be disposed of under laws reserving to the United States the deposits of coal therein, to comply with all conditions as are or may hereafter be provided by the laws and regulations reserving such coal.

(l) Operations, wages, freedom of purchase.--To comply with the operating regulations (30 CFR, Part 211), to exercise reasonable diligence, skill, and care in the operation of the property, and to carry on all operations in accordance with approved methods and practices as provided in the operating regulations, having due regard for the prevention of injury to life, health or property, and of waste or damage to any water or mineral deposits; to fairly and justly weigh or measure the coal mined by each miner; to pay all wages due miners and employees, both above and below ground, at least twice each month in lawful money of the United States; to accord all miners and employees complete freedom of purchase; to restrict the workday to not exceeding eight hours in any one day for underground workers, except in cases of emergency; to employ no boy under the age of sixteen and no girl or woman, without regard to age, in any mine below the surface; unless the laws of the State otherwise provide, in which case the State laws control.

(m) Taxes.--To pay when due, all taxes lawfully assessed and levied under the laws of the State or the United States upon improvements, output of mines, or other rights, property, or assets of the lessee.

(n) Overriding royalties.--Not to create, by assignment or otherwise, an overriding royalty interest in excess of 50 percent of the rate of royalty first payable to the United States under this lease or an overriding royalty interest which when added to any other outstanding overriding royalty interest exceeds that percentage, excepting, that where an interest in the leasehold or in an operating agreement is assigned, the assignor may retain an overriding royalty interest in excess of the above limitation if he shows to the satisfaction of the Bureau of Land Management, that he has made substantial investments for improvements on the land covered by the assignment.

(o) Delivery of premises in case of forfeiture.--In case of forfeiture of this lease, to deliver up to the lessor in good order and condition the land leased, including all buildings, and underground timbering and such other supports and structures as are necessary for the preservation of the mine or deposit.

Sec. 3. The lessor expressly reserves:

(a) Rights reserved.--The right to permit for joint or several use such easements or rights-of-way, including easements in tunnels upon, through, or in the land leased, occupied, or used as may be necessary or appropriate to the working of the same or other lands containing the deposits described in the act, and the treatment and shipment of the products thereof by or under authority of the Government, its lessees or permittees, and for other public purposes.

(b) Disposition of surface.--The right to lease, sell, or otherwise dispose of the surface of the leased lands under existing law or laws hereafter enacted, insofar as said surface is not necessary for the use of the lessee in the extraction and removal of the coal therein, or to dispose of any resource in such lands which will not unreasonably interfere with operations under this lease.

(c) Monopoly and fair prices.--Full power and authority to promulgate and enforce all the provisions of section 30 of the act to insure the sale of the production of said leased lands to the United States and to the public at reasonable prices, to prevent monopoly, and to safeguard the public welfare.

(d) Readjustment of terms.--The right reasonably to readjust and fix royalties payable hereunder and other terms and conditions at the end of 20 years from the date hereof and thereafter at the end of each succeeding 20-year period during the continuance of this lease unless otherwise provided by law at the time of the expiration of any such period. Unless the lessee files objections to the proposed terms or a relinquishment of the lease within 30 days after receipt of the notice of proposed terms for a 20-year period, he will be deemed to have agreed to such terms.

(e) Waiver of conditions.--The right to waive any breach of the conditions contained herein, except the breach of such conditions as are required by the act, but any such waiver shall extend only to the particular breach so waived and shall not limit the rights of the lessor with respect to any future breach; nor shall the waiver of a particular cause of forfeiture prevent cancellation of this lease for any other cause, or for the same cause occurring at another time.

Sec. 4. Relinquishment of lease.--Upon a satisfactory showing that the public interest will not be impaired, the lessee may surrender the entire lease or any legal subdivision thereof. A relinquishment must be filed in duplicate in the appropriate land office. Upon its acceptance it shall be effective as of the date

it is filed, subject to the continued obligation of the lessee and his surety to make payment of all accrued rentals and royalties and to provide for the preservation of any mines or productive works or permanent improvements on the leased lands in accordance with the regulations and terms of the lease.

Sec. 5. Protection of the surface, natural resources, and improvements.-- The lessee agrees to take such reasonable steps as may be needed to prevent operations from unnecessarily: (1) Causing or contributing to soil erosion or damaging any forage and timber growth thereon; (2) polluting the waters of springs, streams, wells, or reservoirs; (3) damaging crops, including forage, timber, or improvements of a surface owner; or (4) damaging range improvements whether owned by the United States or by its grazing permittees or lessees; and upon any partial or total relinquishment or the cancellation or expiration of this lease, or at any other time prior thereto when required by the lessor and to the extent deemed necessary by the lessor, to fill any sump holes, ditches and other excavations, remove or cover all debris, and, so far as reasonably possible, restore the surface of the leased land to its former condition, including the removal of structures as and if required. The lessor may prescribe the steps to be taken and restoration to be made with respect to lands of the United States and improvements thereon.

Sec. 6. Removal of equipment, etc., on termination of lease.-- Upon termination of this lease, by surrender or forfeiture, the lessee shall have the privilege at any time within a period of 90 days thereafter of removing from the premises all machinery, equipment, tools and materials, other than underground timbering placed by the lessee in or on the leased lands, which are not necessary for the preservation of the mine. Any materials, tools, appliances, machinery, structures, and equipment, subject to removal as above provided, which are allowed to remain on the leased lands shall become the property of the lessor on expiration of the 90-day period or such extension thereof as may be granted because of adverse climatic conditions, but the lessee shall remove any or all of such property where so directed by the lessor.

Sec. 7. Proceedings in case of default.-- If the lessee shall not comply with any of the provisions of the act or the regulations thereunder or default in the performance or observance of any of the provisions of this lease, and such default shall continue for a period of 30 days after service of written notice thereof by the lessor, the lessor may institute appropriate proceedings in a court of competent jurisdiction for the forfeiture and cancellation of this lease as provided in section 31 of the act (30 U.S.C., sec. 188). If the lessee fails to take prompt and necessary steps to prevent loss or damage to the mine, property, or premises, or danger to the employees, the lessor may enter on the premises and take such measures as may be deemed necessary to prevent such loss or damage or to correct the dangerous or unsafe condition of the mine or works thereof, which shall be at the expense of the lessee. However, the lessee shall not be held responsible for delays or casualties occasioned by causes beyond the lessee's control.

Sec. 8. Heirs and successors in interest.-- Each obligation hereunder shall extend to, and be binding upon, and every benefit hereof shall inure to, the heirs, executors, administrators, successors, or assigns of the respective parties hereto.

Sec. 9. Unlawful interest.-- No Member of, or Delegate to, Congress or Resident Commissioner, after his election or appointment, or either before or after he has qualified and during his continuance in office, and no officer, agent, or employee of the Department of the Interior, except as provided in 43 CFR 7.4(a)(1), shall be admitted to any share or part in this lease or derive any benefit that may arise therefrom; and the provisions of section 3741 of the Revised Statutes of the United States, as amended (41 U.S.C., sec. 22), and sections 431, 432, and 433, title 18, U.S. Code, relating to contracts, enter into and form a part of this lease so far as the same may be applicable.

IN WITNESS WHEREOF:

James L. French
Thomas G. Perry
(Witnesses to signature of lessee)

THE UNITED STATES OF AMERICA,
By [Signature]
(Signing Officer) APR 14 1958
Manager Land Office (Date)

HUNTINGTON CORPORATION
(Lessee's signature)
By Laurence C. [Signature]
(Lessee's signature)
Laurence C. [Signature] Secretary

(If this lease is executed by a corporation, it must bear the corporate seal)

By [Signature] 7/90
Frederick L. [Signature]

1952
UNITED STATES
DEPARTMENT OF THE INTERIOR
Bureau of Land Management

STIPULATION FOR LANDS UNDER JURISDICTION OF DEPARTMENT OF AGRICULTURE

The lands embraced in this lease (permit) issued under the Mineral Leasing Act of February 25, 1920 (41 Stat. 437, 30 U.S.C., 1946 ed., sec. 181 et seq.), as amended, the Mineral Leasing Act for Acquired Lands of August 7, 1947 (61 Stat. 913, 30 U.S.C., 1946 ed., Supp. III, sec. 351 et seq.) the act of September 1, 1949 (63 Stat. 683, 30 U.S.C., 1946 ed., Supp. III, sec. 192c) the act of June 30, 1950 (64 Stat. 311, 16 U.S.C., 1946 ed., Supp. IV, sec. 508(b)) or under the authority of any of the acts cited in section 402 of the President's Reorganization Plan No. 3 of 1946 (60 Stat. 1097, 5 U.S.C. 1946 ed., sec. 133 y-16, note) being under the jurisdiction of the Secretary of Agriculture, the lessee (permittee) hereby agrees:

(1) To conduct all operations authorized by this lease (permit) with due regard for good land management, not to cut or destroy timber without first obtaining permission from the authorized representative of the Secretary of Agriculture, and to pay for all such timber cut or destroyed at the rates prescribed by such representative; to avoid unnecessary damage to improvements, timber, crops, or other cover; unless otherwise authorized by the Secretary of Agriculture, not to drill any well, carry on operations, make excavations, construct tunnels, drill, or otherwise disturb the surface of the leased (permitted) lands within 200 feet of any building standing on the leased (permitted) lands and whenever required in writing by the authorized representative of the Secretary of Agriculture to fence or fill all sump holes, ditches and other excavations, remove or cover all debris, and so far as reasonably possible, restore the surface of the leased (permitted) lands to their former condition, including the removal of structures as and if required, and when required by such representative to bury all pipelines below plow depth.

(2) To do all in his power to prevent and suppress forest, brush or grass fires on the leased (permitted) land and in its vicinity, and to require his employees, contractors, subcontractors, and employees of contractors or subcontractors to do likewise. Unless prevented by circumstances over which he has no control, the lessee (permittee) shall place his employees, contractors, subcontractors, and employees of contractors and subcontractors employed on the leased (permitted) land at the disposal of any authorized officer of the Department of Agriculture for the purpose of fighting forest, brush, or grass fires on or originating on the leased (permitted) lands or on adjacent areas or caused by the negligence of the lessee (permittee) or his employees, contractors, subcontractors and employees of contractors and subcontractors, with the understanding that payment for such services shall be made at rates to be determined by the authorized representative of the Secretary of Agriculture, which rates shall not be less than the current rates of pay prevailing in the vicinity for services of a similar character: Provided, that if the lessee (permittee), his employees, contractors, subcontractors, or employees of contractors or subcontractors, caused or could have prevented the origin or spread of said fire or fires, no payment shall be made for services so rendered.

During periods of serious fire danger to forest, brush, or grass, as may be specified by the authorized representative of the Secretary of Agriculture, the lessee (permittee) shall prohibit smoking and the building of camp and lunch fires by his employees, contractors, subcontractors, and employees of contractors or subcontractors within the leased (permitted) area except at established camps, and shall enforce this prohibition by all means within his power: Provided, that the authorized representative of the Secretary of Agriculture may designate safe places where, after all inflammable material has been cleared away, campfires may be built for the purpose of heating lunches and where, at the option of the lessee (permittee), smoking may be permitted.

The lessee (permittee) shall not burn rubbish, trash or other inflammable materials except with the consent of the authorized representative of the Secretary of Agriculture and shall not use explosives in such a manner as to scatter inflammable materials on the surface of the land during the forest, brush, or grass fire season, except as authorized to do so on areas approved by such representative.

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The lessee (permittee) shall build or construct such structures or do such clearing on the leased land as the authorized representative of the Secretary of Agriculture decides is essential for forest, brush, and grass fire prevention which is or may be necessitated by the exercise of the privileges authorized by this lease (permit) and shall maintain such structures at his headquarters or at the appropriate location.

(3) In the location, design, construction and maintenance of all authorized works, buildings, plants, waterways, roads, telegraph or telephone lines, structures, reservoirs, tanks, pumping stations, or other structures or clearances, the lessee (permittee) shall be held responsible for any damage or injury to the land, including but not limited to, to the extent scarring and erosion of the land, pollution of the water resources and any damage to the watershed. Where construction, operation, or maintenance of any of the facilities on or connected with this lease (permit) causes damage to the watershed or pollution of the water resources, the lessee (permittee) agrees to repair such damage and to take such corrective measures to prevent further pollution or damage to the watershed as are deemed necessary by the authorized representative of the Secretary of Agriculture.

(4) To pay the lessor (permitter) or his tenant or the surface owner or his tenant, as the case may be, for any and all damage to or destruction of property caused by lessee's (permittee's) operations hereunder; to save and hold the lessor (permitter) or the surface owner or their tenants harmless from all damage or claims for damage to persons or property resulting from lessee's (permittee's) operations under this lease (permit).

(5) To recognize existing uses and commitments, in the form of Department of Agriculture grazing, timber cutting, and special use permits, water developments, ditch, road, trail, pipeline, telephone line, and fence rights-of-way and other similar improvements, and to conduct his operations so as to interfere as little as possible with the rights and privileges granted by these permits or with other existing uses.

(6) To install and maintain cattle guards to prevent the passage of livestock in any openings made in fences by the lessee (permittee) or his contractors to provide access to the lands covered by this lease (permit) for automotive and other equipment.

(7) If lessee (permittee) shall construct any camp on the land, such camp shall be located at a place approved by the authorized representative of the Secretary of Agriculture, and such representative shall have authority to require that such camp be kept in a neat and sanitary condition.

(8) To comply with all the rules and regulations of the Secretary of Agriculture governing the national forests or other lands under his jurisdiction which are embraced in this lease (permit).

(9) Unless otherwise authorized, prior to the beginning of operations to appoint and maintain at all times during the term of this lease (permit) a local agent upon whom may be served written orders or notices respecting matters contained in this stipulation, and to inform the authorized representative of the Secretary of Agriculture, in writing, of the name and address of such agent. If a substitute agent is appointed, the lessee (permittee) shall immediately so inform the said representative.

(10) To address all matters relating to this stipulation to Regional Forester, U. S. Forest Service, Forest Service Building, Ogden, Utah.

at _____ who is the authorized representative of the Secretary of Agriculture, or to such other representative as may from time to time, be designated, provided that such designation shall be in writing and be delivered to the lessee (permittee) or his agent.

(11) If all or any part of the leased (permitted) lands lie within a municipal watershed or are, in the opinion of the authorized representative of the Secretary of Agriculture, primarily valuable for watershed protection, the lessee (permittee) shall reseed or otherwise restore the vegetative cover, as required by the authorized representative of the Secretary of Agriculture, for watershed protection and erosion prevention on any areas damaged because of the operation.

This lease authorizes mining by underground methods only.

No roads or tippie sites will be located on national forest lands without obtaining prior written approval of the forest supervisor.

HUNTINGTON CORPORATION
Lessee (Permittee)
By: Lawrence S. Duering
Secretary

2F-8
By: Frederick L. Anderson
Frederick L. Anderson, President

UNITED STATES
DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Land Office
Post Office Box No. 777
Salt Lake City 10, Utah

Office Salt Lake City, Utah

Serial No. Utah 024318

LEASE OF COAL LANDS UNDER THE ACT OF
FEBRUARY 25, 1920, AS AMENDED

This lease, entered into on May 1, 1958, by the United States of America, the lessor, through the Bureau of Land Management, and Huntington Corporation, Box 1001, Palo Alto, California

the lessee, pursuant and subject to the terms and provisions of the act of February 25, 1920 (41 Stat. 437), as amended, hereinafter referred to as the act, and to all reasonable regulations of the Secretary of the Interior now in force which are made a part hereof,

WITNESSETH:

Section 1. Rights of lessee.—The lessor, in consideration of the rents and royalties to be paid and the conditions to be observed as hereinafter set forth, does hereby grant and lease to the lessee the exclusive right and privilege to mine and dispose of all the coal in the following-described tracts of land, situated in the State of Utah

T. 16 S., R. 7 E., 21 Mer, Utah

T. 16 S., R. 8 E., 21 Mer, Utah

Sec. 24: ~~SE1/4, E1/4~~
Sec. 25: ~~N1/4, SW1/4, W1/2, SE1/4~~
 ~~SW1/4, NE1/4~~
Sec. 26: ~~E1/4~~

Sec. 19: Lots 2, 3, 4, ~~SW1/4, SE1/4~~,
 ~~E1/4~~

containing 820.39 acres, more or less, together with the right to construct all such works, buildings, plants, structures, and appliances as may be necessary and convenient for the mining and preparation of the coal for market, the manufacture of coke or other products of coal, the housing and welfare of employees, and, subject to the conditions herein provided, to use so much of the surface as may reasonably be required in the exercise of the rights and privileges herein granted.

Sec. 2. In consideration of the foregoing, the lessee hereby agrees:

(a) Bond.—To maintain the bond furnished upon the issuance of this lease, which bond is conditioned upon compliance with all the provisions of the lease, and to increase the amount of or furnish such other bond as may be required.

(b) Rental.—To pay the lessor annually, in advance, for each acre or part thereof covered by this lease, beginning with the date hereof, the following rentals: 25 cents for the first year, 50 cents for the second, third, fourth, and fifth years, respectively, and \$1 for the sixth and each succeeding year during the continuance of the lease, such rental for any year to be credited against the first royalties as they accrue under the lease during the year for which the rental was paid.

(c) Royalty.—To pay the lessor a royalty of 15 cents on every ton of 2,000 pounds of coal mined during the first 20 years succeeding the execution of this lease. Royalties shall be payable quarterly within 30 days from the expiration of the quarter in which the coal is mined.

(d) Minimum production.--Beginning with the sixth year of the lease, except when operations are interrupted by strikes, the elements, or casualties not attributable to the lessee, or unless on application and showing made, operations shall be suspended when market conditions are such that the lessee cannot operate except at a loss or suspended for the other reasons specified in section 39 of the act, to mine coal each year and pay a royalty thereon to a value of \$1 an acre or fraction thereof. Operations under this lease shall be continuous except in the circumstances described or unless the lessee shall pay a royalty, less rent, on such minimum amount of the leased deposits, for one year in advance, in which case operations may be suspended for that year.

(e) Payments.--Unless otherwise directed by the lessor, to make rental, royalty, or other payments to the Regional Mining Supervisor of the United States Geological Survey of the region in which the leased lands are situated. All remittances must be made payable to the United States Geological Survey.

(f) Plats, reports, maps.--At such times and in such form as the lessor may prescribe, to furnish a plat showing development work and improvements on the leased lands and a report with respect to stockholders, investment, depreciation, and costs. To furnish in such form as the lessor may prescribe, within 30 days from the expiration of each quarter a report covering such quarter, certified by the superintendent of the mine, or by such other agent having personal knowledge of the facts as may be designated by the lessee for such purpose, showing the amount of leased deposits mined during the quarter, the character and quality thereof, amount of its products and byproducts disposed of and price received therefor, and amount in storage or held for sale. To keep and prepare maps of the leased lands in accordance with the regulations in 30 CFR, Part 211.

(g) Weights.--To determine accurately the weight or quantity and quality of all leased deposits mined, and to enter accurately the weight or quantity and quality thereof in due form in books to be kept and preserved by the lessee for such purposes.

(h) Inspection.--To permit at all reasonable times (1) inspection by any duly authorized officer of the Department, of the leased premises and all surface and underground improvements, works, machinery, equipment, and all books and records pertaining to operations and surveys or investigations under this lease; and (2) the lessor to make copies of and extracts from any or all books and records pertaining to operations under this lease, if desired.

(i) Assignment of lease or interest therein.--To file for approval with the office prescribed in the regulations, within 90 days from the date of final execution, any assignment, sublease, or transfer made of this lease, whether by direct assignment, working agreement, transfer of royalty interest, or otherwise. Such instrument will take effect the first day of the month following its final approval by the Bureau of Land Management, or if the assignee requests, the first day of the month of the approval.

(j) Nondiscrimination.--In connection with the performance of work under this lease, the lessee agrees not to discriminate against any employee or applicant for employment because of race, religion, color or national origin. The aforesaid provision shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The lessee agrees to post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of the nondiscrimination clause. The lessee further agrees to insert the foregoing provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials.

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(l) Operations, wages, freedom of purchase.--To comply with the operating regulations (30 CFR, Part 211), to exercise reasonable diligence, skill, and care in the operation of the property, and to carry on all operations in accordance with approved methods and practices as provided in the operating regulations, having due regard for the prevention of injury to life, health or property, and of waste or damage to any water or mineral deposits; to fairly and justly weigh or measure the coal mined by each miner; to pay all wages due miners and employees, both above and below ground, at least twice each month in lawful money of the United States; to accord all miners and employees complete freedom of purchase; to restrict the workday to not exceeding eight hours in any one day for underground workers, except in cases of emergency; to employ no boy under the age of sixteen and no girl or woman, without regard to age, in any mine below the surface; unless the laws of the State otherwise provide, in which case the State laws control.

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(n) Overriding royalties.--Not to create, by assignment or otherwise, an overriding royalty interest in excess of 50 percent of the rate of royalty first payable to the United States under this lease or an overriding royalty interest which when added to any other outstanding overriding royalty interest exceeds that percentage, excepting, that where an interest in the leasehold or in an operating agreement is assigned, the assignor may retain an overriding royalty interest in excess of the above limitation if he shows to the satisfaction of the Bureau of Land Management, that he has made substantial investments for improvements on the land covered by the assignment.

(o) Delivery of premises in case of forfeiture.--In case of forfeiture of this lease, to deliver up to the lessor in good order and condition the land leased, including all buildings, and underground timbering and such other supports and structures as are necessary for the preservation of the mine or deposit.

Sec. 3. The lessor expressly reserves:

(a) Rights reserved.--The right to permit for joint or several use such easements or rights-of-way, including easements in tunnels upon, through, or in the land leased, occupied, or used as may be necessary or appropriate to the working of the same or other lands containing the deposits described in the act, and the treatment and shipment of the products thereof by or under authority of the Government, its lessees or permittees, and for other public purposes.

(b) Disposition of surface.--The right to lease, sell, or otherwise dispose of the surface of the leased lands under existing law or laws hereafter enacted, insofar as said surface is not necessary for the use of the lessee in the extraction and removal of the coal therein, or to dispose of any resource in such lands which will not unreasonably interfere with operations under this lease.

(c) Monopoly and fair prices.--Full power and authority to promulgate and enforce all the provisions of section 30 of the act to insure the sale of the production of said leased lands to the United States and to the public at reasonable prices, to prevent monopoly, and to safeguard the public welfare.

(d) Readjustment of terms.--The right reasonably to readjust and fix royalties payable hereunder and other terms and conditions at the end of 20 years from the date hereof and thereafter at the end of each succeeding 20-year period during the continuance of this lease unless otherwise provided by law at the time of the expiration of any such period. Unless the lessee files objections to the proposed terms or a relinquishment of the lease within 30 days after receipt of the notice of proposed terms for a 20-year period, he will be deemed to have agreed to such terms.

(e) Waiver of conditions.--The right to waive any breach of the conditions contained herein, except the breach of such conditions as are required by the act, but any such waiver shall extend only to the particular breach so waived and shall not limit the rights of the lessor with respect to any future breach; nor shall the waiver of a particular cause of forfeiture prevent cancellation of this lease for any other cause, or for the same cause occurring at another time.

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Sec. 7. Proceedings in case of default.--If the lessee shall not comply with any of the provisions of the act or the regulations thereunder or default in the performance or observance of any of the provisions of this lease, and such default shall continue for a period of 30 days after service of written notice thereof by the lessor, the lessor may institute appropriate proceedings in a court of competent jurisdiction for the forfeiture and cancellation of this lease as provided in section 31 of the act (30 U.S.C., sec. 188). If the lessee fails to take prompt and necessary steps to prevent loss or damage to the mine, property, or premises, or danger to the employees, the lessor may enter on the premises and take such measures as may be deemed necessary to prevent such loss or damage or to correct the dangerous or unsafe condition of the mine or works thereof, which shall be at the expense of the lessee. However, the lessee shall not be held responsible for delays or casualties occasioned by causes beyond the lessee's control.

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IN WITNESS WHEREOF:

THE UNITED STATES OF AMERICA,

By [Signature]
(Signing Officer)

Manager Land Office MAY 1 - 1953
(Title) (Date)

[Signature]
[Signature]
(Witnesses to signature of lessee)

HUNTINGTON CORPORATION
(Lessee's signature)

By [Signature]
(Lessee's signature)
Laurence G. Duerig, Secretary

(If this lease is executed by a corporation, it must bear the corporate seal)

1952
UNITED STATES
DEPARTMENT OF THE INTERIOR
Bureau of Land Management

STIPULATION FOR LANDS UNDER JURISDICTION OF DEPARTMENT OF AGRICULTURE

The lands embraced in this lease (permit) issued under the Mineral Leasing Act of February 25, 1920 (41 Stat. 437, 30 U.S.C., 1946 ed., sec. 181 et seq.), as amended, the Mineral Leasing Act for Acquired Lands of August 7, 1947 (61 Stat. 913, 30 U.S.C., 1946 ed., Supp. III, sec. 351 et seq.) the act of September 1, 1949 (63 Stat. 683, 30 U.S.C., 1946 ed., Supp. III, sec. 192c) the act of June 30, 1950 (64 Stat. 311, 16 U.S.C., 1946 ed., Supp. IV, sec. 508(b)) or under the authority of any of the acts cited in section 402 of the President's Reorganization Plan No. 3 of 1946 (60 Stat. 1097, 5 U.S.C. 1946 ed., sec. 133 y-16, note) being under the jurisdiction of the Secretary of Agriculture, the lessee (permittee) hereby agrees:

(1) To conduct all operations authorized by this lease (permit) with due regard for good land management, not to cut or destroy timber without first obtaining permission from the authorized representative of the Secretary of Agriculture, and to pay for all such timber cut or destroyed at the rates prescribed by such representative; to avoid unnecessary damage to improvements, timber, crops, or other cover; unless otherwise authorized by the Secretary of Agriculture, not to drill any well, carry on operations, make excavations, construct tunnels, drill, or otherwise disturb the surface of the leased (permitted) lands within 200 feet of any building standing on the leased (permitted) lands and whenever required in writing by the authorized representative of the Secretary of Agriculture to fence or fill all sump holes, ditches and other excavations, remove or cover all debris, and so far as reasonably possible, restore the surface of the leased (permitted) lands to their former condition, including the removal of structures as and if required, and when required by such representative to bury all pipelines below plow depth.

(2) To do all in his power to prevent and suppress forest, brush or grass fires on the leased (permitted) land and in its vicinity, and to require his employees, contractors, subcontractors, and employees of contractors or subcontractors to do likewise. Unless prevented by circumstances over which he has no control, the lessee (permittee) shall place his employees, contractors, subcontractors, and employees of contractors and subcontractors employed on the leased (permitted) land at the disposal of any authorized officer of the Department of Agriculture for the purpose of fighting forest, brush, or grass fires on or originating on the leased (permitted) lands or on adjacent areas or caused by the negligence of the lessee (permittee) or his employees, contractors, subcontractors and employees of contractors and subcontractors, with the understanding that payment for such services shall be made at rates to be determined by the authorized representative of the Secretary of Agriculture, which rates shall not be less than the current rates of pay prevailing in the vicinity for services of a similar character: Provided, that if the lessee (permittee), his employees, contractors, subcontractors, or employees of contractors or subcontractors, caused or could have prevented the origin or spread of said fire or fires, no payment shall be made for services so rendered.

During periods of serious fire danger to forest, brush, or grass, as may be specified by the authorized representative of the Secretary of Agriculture, the lessee (permittee) shall prohibit smoking and the building of camp and lunch fires by his employees, contractors, subcontractors, and employees of contractors or subcontractors within the leased (permitted) area except at established camps, and shall enforce this prohibition by all means within his power: Provided, that the authorized representative of the Secretary of Agriculture may designate safe places where, after all inflammable material has been cleared away, campfires may be built for the purpose of heating lunches and where, at the option of the lessee (permittee), smoking may be permitted.

The lessee (permittee) shall not burn rubbish, trash or other inflammable materials except with the consent of the authorized representative of the Secretary of Agriculture and shall not use explosives in such a manner as to scatter inflammable materials on the surface of the land during the forest, brush, or grass fire season, except as authorized to do so on areas approved by such representative.

The lessee (permittee) shall build or construct such roads or do such clearing on the leased land as the authorized representative of the Secretary of Agriculture decides is essential for forest, brush, and grass fire prevention which is or may be necessitated by the exercise of the privileges authorized by this lease (permit) and shall maintain such roads at his headquarters or at the appropriate location on the leased (permitted) land.

(3) In the location, design, construction and maintenance of all authorized dikes, buildings, plants, waterways, roads, telegraph or telephone lines, pipelines, reservoirs, tanks, pumping stations, or other structures or clearances, the lessee (permittee) shall do all things reasonably necessary to prevent or reduce to the fullest extent scarring and erosion of the land, pollution of the water resources and any damage to the watershed. Where construction, operation, or maintenance of any of the facilities on or connected with this lease (permit) causes damage to the watershed or pollution of the water resources, the lessee (permittee) agrees to repair such damage and to take such corrective measures to prevent further pollution or damage to the watershed as are deemed necessary by the authorized representative of the Secretary of Agriculture.

(4) To pay the lessor (permitter) or his tenant or the surface owner or his tenant, as the case may be, for any and all damage to or destruction of property caused by lessee's (permittee's) operations hereunder; to save and hold the lessor (permitter) or the surface owner or their tenants harmless from all damage or claims for damage to persons or property resulting from lessee's (permittee's) operations under this lease (permit).

(5) To recognize existing uses and commitments, in the form of Department of Agriculture grazing, timber cutting, and special use permits, water developments, ditch, road, trail, pipeline, telephone line, and fence rights-of-way and other similar improvements, and to conduct his operations so as to interfere as little as possible with the rights and privileges granted by these permits or with other existing uses.

(6) To install and maintain cattle guards to prevent the passage of livestock in any openings made in fences by the lessee (permittee) or his contractors to provide access to the lands covered by this lease (permit) for automotive and other equipment.

(7) If lessee (permittee) shall construct any camp on the land, such camp shall be located at a place approved by the authorized representative of the Secretary of Agriculture, and such representative shall have authority to require that such camp be kept in a neat and sanitary condition.

(8) To comply with all the rules and regulations of the Secretary of Agriculture governing the national forests or other lands under his jurisdiction which are embraced in this lease (permit).

(9) Unless otherwise authorized, prior to the beginning of operations to appoint and maintain at all times during the term of this lease (permit) a local agent upon whom may be served written orders or notices respecting matters contained in this stipulation, and to inform the authorized representative of the Secretary of Agriculture, in writing, of the name and address of such agent. If a substitute agent is appointed, the lessee (permittee) shall immediately so inform the said representative.

(10) To address all matters relating to this stipulation to Regional Forester, U. S. Forest Service, Forest Service Building, Ogden, Utah.

at _____ who is the authorized representative of the Secretary of Agriculture, or to such other representative as may from time to time, be designated, provided that such designation shall be in writing and be delivered to the lessee (permittee) or his agent.

(11) If all or any part of the leased (permitted) lands lie within a municipal watershed, or are, in the opinion of the authorized representative of the Secretary of Agriculture, primarily valuable for watershed protection, the lessee (permittee) shall reseed or otherwise restore the vegetative cover, as required by the authorized representative of the Secretary of Agriculture, for watershed protection and erosion prevention on any areas damaged because of the operation.

This lease authorizes mining by underground methods only.

No roads or tipple sites will be located on national forest lands without obtaining prior written approval of the forest supervisor.

HUNTINGTON CORPORATION

Lessee (Permittee)

By Laurence G. Duerig
Laurence G. Duerig, Secretary

2F-14

By Frederick L. Anderson
Frederick L. Anderson, Forester

7/90

APPENDIXES

A	Violation List	2A-1
B	Title Insurance Policy	2B-1
C	Insurance	2C-1
D	Affidavit of Publication	2D-1
E	Pole Line Easement	2E-1
F	Federal Lease	2F-1

LIST OF TABLES

Table 2-1	Property Ownership	2
Table 2-2	Apparent Completeness Review - Other Permits and Licenses	12

LIST OF PLATES

Plate 2-1	Permit Area
Plate 2-2	Surface Ownership
Plate 2-3	Sub-Surface Ownership
Plate 2-4	Surface Facilities

2.2.2 Holders of Leasehold Interest in Surface Area and Coal Rights

The names and addresses of holders of record in Leasehold interest are listed below: Coal mining lease by and between Co-Op Mining Co. and Peabody Coal Co., executed 1 December 1975 (Plate 2-1).

T16S, R7E SLBM	Sec. 14 SW 1/4, SE 1/4
	Sec. 23 E1/2, E1/2 W1/2
	Sec. 24 All West of N-S Fault
	Sec. 25 All West of N-S Fault
(Fed. Lease U024316)	Sec. 13 W 1/2 W 1/2
	Sec. 14, E 1/2 NW 1/4, NE 1/4
(Fed. Lease U024318)	Sec. 26 E 1/2 NW 1/4

The right to mine and remove from, and use for purposes incident to mining, including access roads, camp facilities, surface operations, storage of coal, and other activities. Also unrestricted use of all access roads leading to and from property. Lease is binding on the successors to the parties of the lease. Co-Op also holds Federal Lease U024316 (See Appendix 2-F, Plate 2-1).

2.2.3 Purchase of Record Under a Real Estate Contract for Surface Area Coal

See Appendix 2-B Title Insurance Policy and Property Title.

2.2.4 Operator, if Different from Applicant

Same as above.

2.5.1 Waiver of Owners of Nearby Occupied Dwellings

Applicant does not propose to conduct or locate surface facilities within 300 feet of an occupied dwelling.

2.6 PERMIT TERM INFORMATION - ANTICIPATED FOR EACH PHASE

2.6.1 Starting Date

The mine started construction in 1981 and was in production by late fall of 1981. Mining in the 160 acre Lease addition area is proposed to begin in the spring of 1989 (Appendix 3-K).

2.6.2 Termination Dates

Termination dates anticipated for each phase of mining are nebulous at this time although a detailed estimate of production and reserves are included in the Geology Section and a projection of 22-years appears realistic (from 1990). The final termination date for the mining operation is expected to be 2012.

2.6.3 Numbers or Surface Acres Affected

The anticipated disturbance by the Bear Canyon Mine totals about 16 acres. Plate 2-1 shows potential property expansion and future facilities of the mine.

LIST OF FIGURES

7.1-1	Flow Characteristics of Representative Star Point- Blackhawk Aquifer and Bear Springs	8
7.1-2	Stratigraphic Section A-A'	9
7.1-3	Stratigraphic Section B-B'	10
7.1-4	General Stratigraphic Relationships	11
7.1-5	Stratigraphic Section of Castlegate, and Star Point- Blackhawk Formations	12
7.2-1	Rip-Rap Sizing Chart	64
7.2-1A	Culvert C-1U - Downslope Profile	68C
7.2-2	Downspout Structure	72
7.2-3	Collection Box	73
7.2-4	Open Culvert, Typical Section	74
7.2-5	Buried Flexible Culvert	75
7.2-6	Exposed Culvert Anchor	76
7.2-7	Catch Basin	77
7.2-8	Culvert Energy Dissipator Device	83
7.2-9	Typical Silt Fence	84
7.2-10	Inlet Retaining Wall (C-2D)	85
7.3-1	Channel Reclamation, Loose Rock Check Dams	93

LIST OF TABLES

7.1-1	Water Quality and Flow Data, 1984, 1985	21
7.1-2	Water Quality and Flow Data, 1986	22
7.1-3	Water Quality and Flow Data, 1987	24
7.1-4	Selected Characteristics of Area Springs and Seeps	28
7.1-5	Water Level Measurements	29
7.1-6	Ground Water Sampling	39
7.1-7	Ground Water Quality Parameter List	40
7.1-8	Water Monitoring Matrix 1989	41
7.1-9	Water Monitoring Matrix 1990 thru 1995	42
7.2-1	Area Water Rights Summary	49
7.2-2	Stream Flow Measurements (1977-79)	51
7.2-3	Suspended Sediments, Huntington Creek Tributaries	51
7.2-4	Surface Water Sampling	54
7.2-5	Surface Water Quality Parameter List	56
7.2-6	Sediment Pond Design Data/Calculations	60
7.2-7	Sediment Ponds, Final Design Criteria	62
7.2-8	Summary of Ditch Sizes	69
7.2-9	Summary of Culvert Sizes	70
7.3-1	Parameters of Reclaimed Channels	91

7.2.7.2 Slope and Inlet Protection

Slope Protection. The exterior of sedimentation pond "B" is to be protected by 12 in. rip-rap. Computer analysis (print-outs are in Appendix 7-H) indicates that the maximum velocity of Bear Creek by pond "B" is 9.05 ft/sec. The 12 in. rip-rap size was determined from the graph, by Peterka (Figure 7.2-1).

Inlet Protection. In order to protect bare soil from erosion, the inlet of pond "A" will be lined with 6 - 8 in. sized rip-rap. The inlet to pond "B" will be lined with grouted rip-rap.

Plates 7-2 and 7-3 shows the required plan and sections of Sedimentation Ponds "A" and "B," respectively.

7.2.7.3 Slope Stability Analysis

A computer slope stability analysis for pond "A" is contained in Appendix 7-E. The computer analysis of the sediment pond included the condition under which the most conservative factor of safety would be derived. This is a condition wherein the soil is saturated from the sediment pond being full of water and then the analysis is run with the sediment pond empty. For purposes of analysis the soil was assumed saturated by the water occasionally held in the pond. The cross-sections towards the back of Appendix E indicate a division between soil No. 2 and soil No. 1. Referring back to the computer printout sheets, soil No. 2 is indicated to be

Culvert Outlet C-1U 1991

In order to reduce erosion occurring at the outlet of culvert C-1U, a flexible culvert will be added to the end of the in-place culvert. The extension will extend to a point where the discharge is onto the rock cliff. The only runoff that crosses the slope below the Upper Storage Pad will then be the direct impact precipitation. The flexible culvert will be attached to the slope using the method identified in Figure 7.2-6.

Downcast material at the base of the cliff will be removed from the immediate impact area, to the established (pre-disturbed) bedrock and/or rip-rapped bed below. A sediment basin at the inlet of culvert C-8U will be maintained and cleaned as needed to reduce potential impacts of suspended solids to surface waters. See Figure 7.2.1A for a profile of the cliff and downfall area. The remaining downcast material in a pile to the side of the drainage impact area at the base of the cliff will be stabilized following interim reclamation procedures defined in Appendix 3-G.

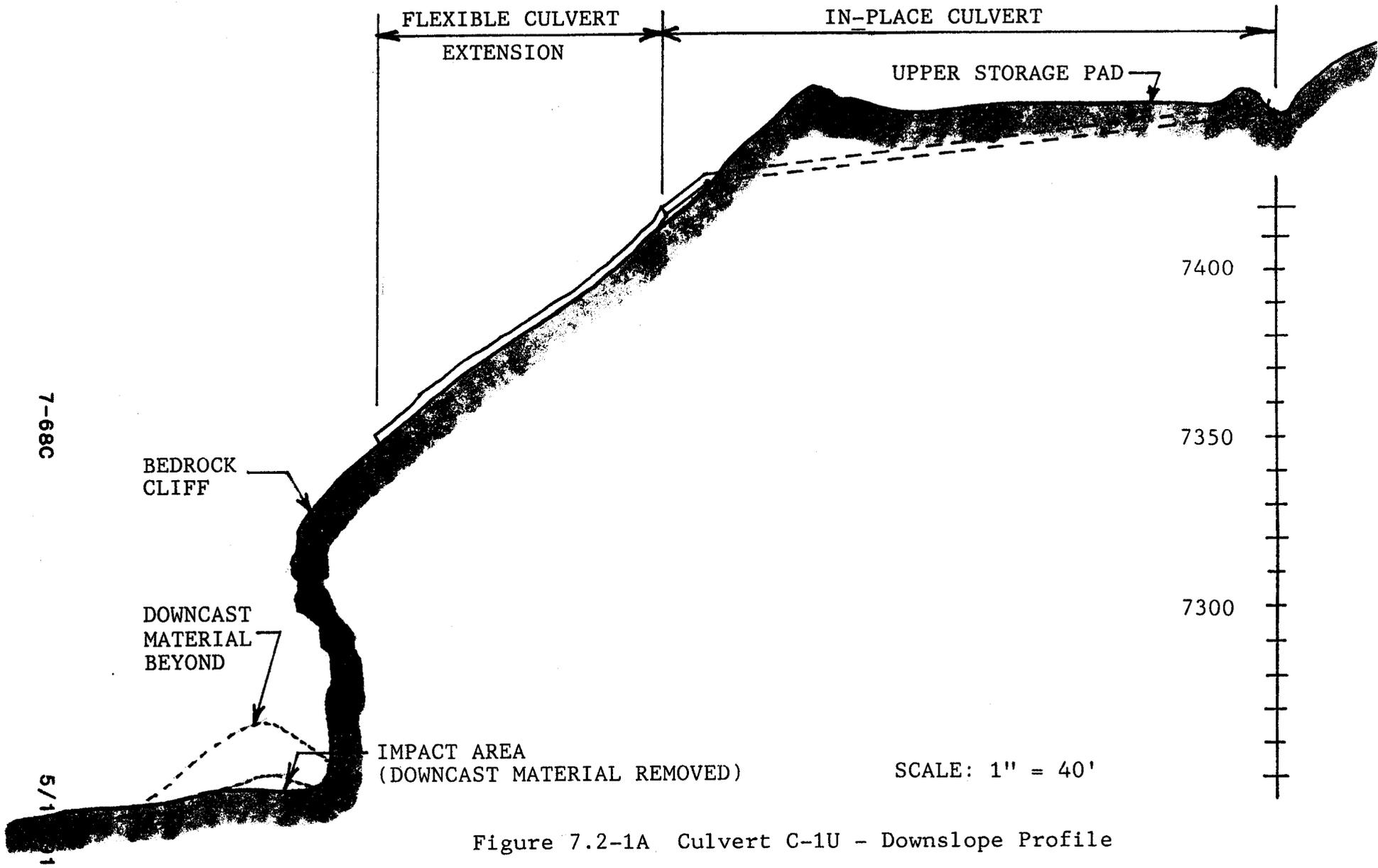


Figure 7.2-1A Culvert C-1U - Downslope Profile

LIST OF FIGURES

7.1-1	Flow Characteristics of Representative Star Point- Blackhawk Aquifer and Bear Springs	8
7.1-2	Stratigraphic Section A-A'	9
7.1-3	Stratigraphic Section B-B'	10
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7.2-1	Rip-Rap Sizing Chart	64
7.2-1A	Culvert C-1U - Downslope Profile	68C
7.2-2	Downspout Structure	72
7.2-3	Collection Box	73
7.2-4	Open Culvert, Typical Section	74
7.2-5	Buried Flexible Culvert	75
7.2-6	Exposed Culvert Anchor	76
7.2-7	Catch Basin	77
7.2-8	Culvert Energy Dissipator Device	83
7.2-9	Typical Silt Fence	84
7.2-10	Inlet Retaining Wall (C-2D)	85
7.3-1	Channel Reclamation, Loose Rock Check Dams	93

LIST OF TABLES

7.1-1	Water Quality and Flow Data, 1984, 1985	21
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7.1-5	Water Level Measurements	29
7.1-6	Ground Water Sampling	39
7.1-7	Ground Water Quality Parameter List	40
7.1-8	Water Monitoring Matrix 1989	41
7.1-9	Water Monitoring Matrix 1990 thru 1995	42
7.2-1	Area Water Rights Summary	49
7.2-2	Stream Flow Measurements (1977-79)	51
7.2-3	Suspended Sediments, Huntington Creek Tributaries	51
7.2-4	Surface Water Sampling	54
7.2-5	Surface Water Quality Parameter List	56
7.2-6	Sediment Pond Design Data/Calculations	60
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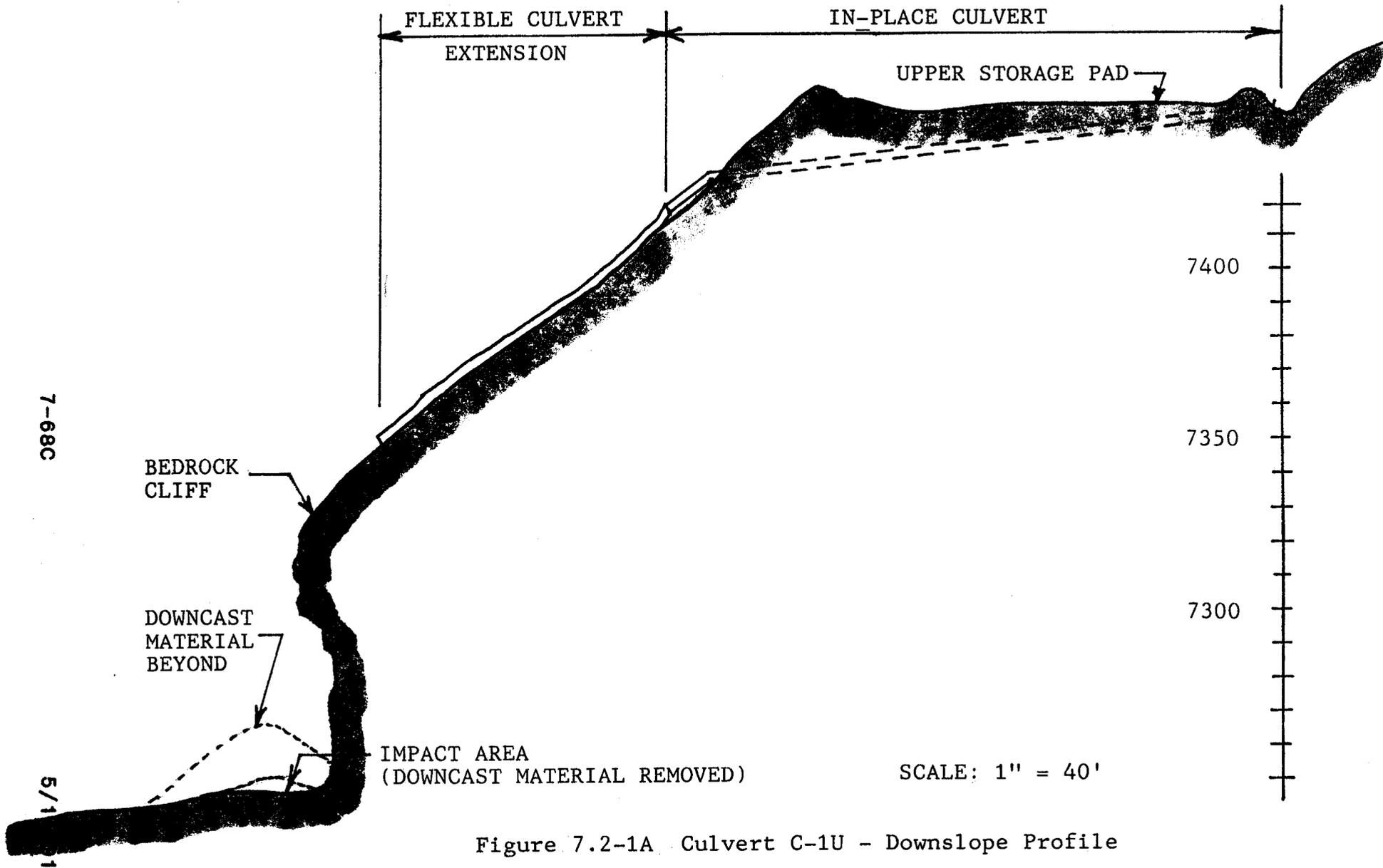


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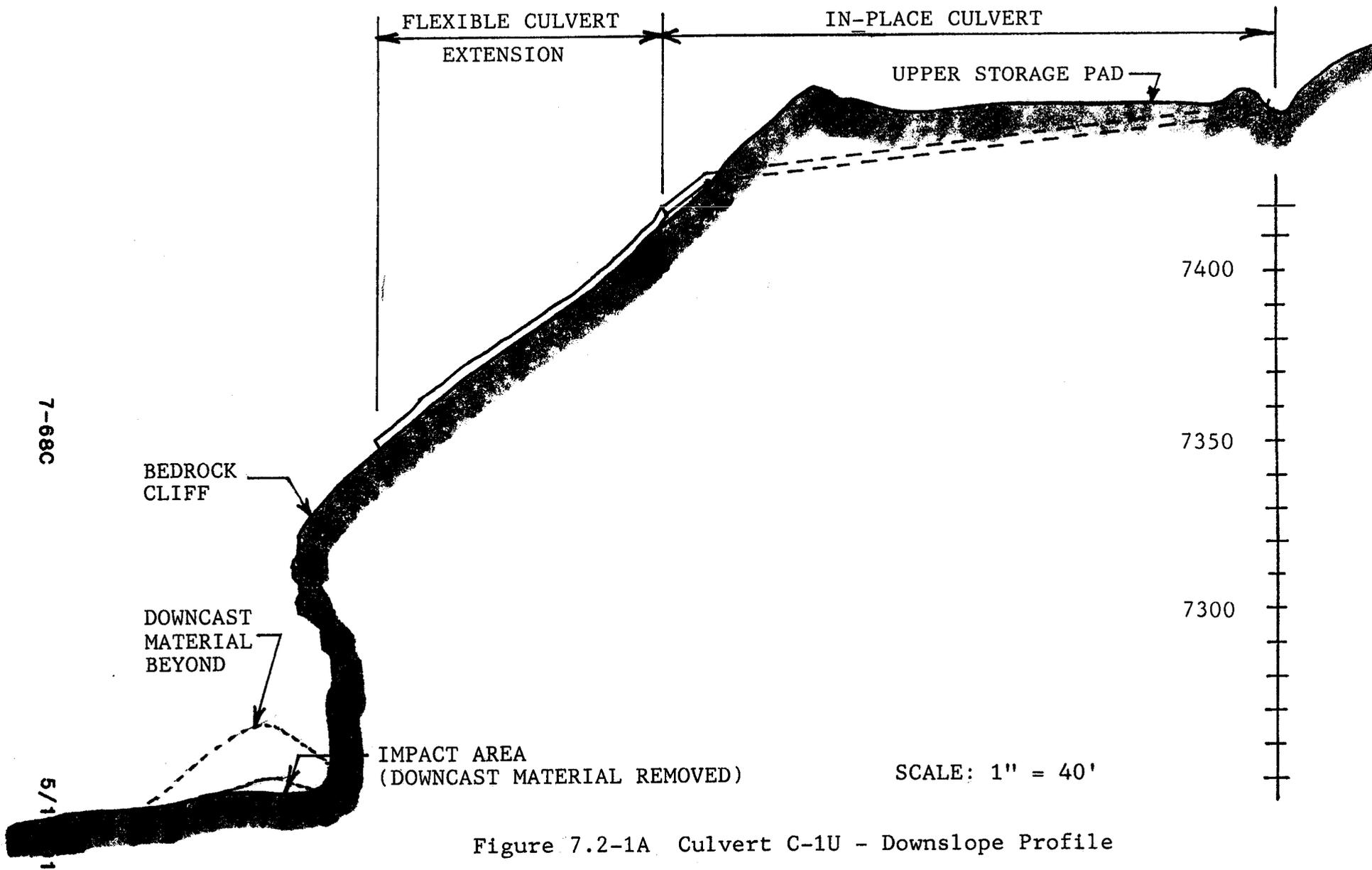


Figure 7.2-1A Culvert C-1U - Downslope Profile

7.2.8.3.1 Rip-Rap Sizing Gradation

Rip-Rap will be sized according to the following criteria, based on Figure 3.17, Suggested Size Distribution of R-Rap, p 195, "Applied Hydrology and Sedimentology for Disturbed Areas," Barfield, Warner and Haan, 1983:

D_{100}	=	2 D	(100 pct Less Than)
D_{85}	=	1.7 D	(85 pct Less Than)
D_{50}	=	1 D	(50 pct Less Than)
D_{15}	=	0.42 D	(15 pct Less Than)
D_0	=	0.10 D	(0 pct Less Than)

AMEND

APPROVED

Approved

by _____

388 East Boynton Road • Kaysville, Utah 84037 • (801) 544-3641

Pamela Grubaugh-Littig
Permit Supervisor
Utah Division of Oil Gas & Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

RECEIVED
OCT 19 1990

DIVISION OF
OIL GAS & MINING
19 October 1990

Pamela:

Ref: Five-Year Permit Renewal, Response to Technical Deficiency Document, Bear Canyon Mine, Co-Op Mining Company, ACT/015/025, Emery County, Utah

Attached with this letter are 14 copies of the latest revised/updated pages of the Mine Plan. These pages shall replace previous printing. Copies of revised Plates not included with this letter will be delivered to DOGM on Monday morning, 22 Nov 1990.

Enclosed is an itemized list discussing Co-Op Mining Companies response to the comments made in the Technical Deficiency Document received from DOGM 26 Sept 1990. An effort has been made to follow the list of items as given in the T.D. Please review these items and inform me of any additional information that may be required to complete approval. I understand that some stipulations may be required. Thank you for your cooperation in this matter.

Sincerely,



Kimly C. Mangum, P.E.
Permitting & Compliance Consultant.

Enclosure(s)
cc: Co-Op Mining Co.

DOGM TD

GENERAL COMMENTS

Chapter 3 Due to the many changes and reduction of redundant areas Chapter 3 has been reprinted from page 58.

COVER LETTER

Rewritten coal rules. Reference to rewritten coal rules has been noted wherever applicable. Reference to old coal rules removed or replaced.

Table of Contents. Table of Contents have been replaced where dictated by changes.

Average Annual Depletion of Surface Water. Using the value of 3.2 gal/ton of recovered coal (typical for mining in the area) and the annual coal production rate of 400,000 ton/yr; the average annual depletion of surface water is 4 acre ft.

PAGE 1

EDITORIAL COMMENTS

The following pages are included and have been updated as indicated;

3-44, 9-8, 9-16, 9-21(9-22), 9-22(9-23), 9-23(9-24), 2A-3, 9A-5, 2F-9 thru 2F-14 (two leases are duplicated in their entirety, some pages are duplicated within the leases.), Appendix 2-E, 2-iii, 3D-3.

PAGE 2

R614-301-100

113.310 pp 2A-2 thru 2A-5 have been updated to include additional information about violations.

116.100 New date is 2012 and has been corrected in text.

R614-301-200

221 SCS will be on-site 23 Oct 1990 to perform a new Prime Farmland Determination survey. Section 13, W1/2 has the same restrictive environment described in the letter from SCS, p. 8C-D. Sec. 13 was apparently left out as an oversight. Results will be forwarded to the Division upon receipt.

222 SCS is also under contract to perform a ^{ORDER} Class I Soil Survey of the bonded area and are scheduled to be on-site at 8:00 am on 23 Oct 1990. They have been asked to survey the site of the proposed Bear Creek culvert extension area and proposed topsoil pile location at the same time. Although we cannot predict the completion date of the report (soil testing will take 4 to 6 weeks) SCS has been notified of the urgency.

232 Text concerning topsoil handling has been compiled in Chapter 8 and all other chapters reference the appropriate sections in Chapter 8. See Section 8.7.1. Note added Table 8.7-1.

232.100 Text corrected p. 3-8. See 232 above.

PAGE 3

233 The use of downcast material was an issue involved with NOV 90-32-3-1. It is my understanding that this issue is under resolution and the downcast material will continue to be acceptable as substitute topsoil material. Use of similar material has proven to be successful at many other mines including Trail Canyon and Mill Fork on the east side of Bear Canyon.

Review of actual acreage of disturbed areas has revealed a need for additional topsoil material. Co-Op anticipates recovery of adequate topsoil material during the relocation of the topsoil pile, with recovery of suitable subsurface materials from the proposed shower house and new topsoil pile sites. This issue has been discussed in the updated pages.

Surface layers of soils described in SCS survey Appendix 8-B are defined as "very stony" and "cobblely". Experience at Trail Canyon indicates that soil materials to be used for backfill and regrading will be suitable for plant growth material. With this data and the pre-disturbed nature of the site it is felt that 6 in. of topsoil material will provide an appropriate seedbed to meet reclamation post-mining land use standards on the existing disturbed areas.

Results of the SCS survey, to be conducted this month must be used to complete the demonstration that adequate quantities of good quality topsoil material exists. Co-Op will complete the balance calculations as soon as the survey and test results are available. Text has been revised to reflect the additional area and bonding estimates have been updated appropriately in Section 3.6.8.

234 A new as-built survey has been conducted of the existing topsoil pile. Results will be placed on Plate 8-2 and submitted to the Department on or before 31 Oct 1990.

p 3-45 The word "relative" has been deleted.
p 3D-3 The last paragraph has been rewritten.
p 8-24 p 8-25 & 8-26. Revision made as requested.
p 8D-2 Approx test plot location is now shown on Plate 2-4. Test plot was seeded and marked in 1989. See comments concerning this issue above (233).

PAGE 4

242.200
p 3-37 Text revised as requested.
p 4-13 Text revised as requested.

242.110
p 3D-3 Text revised to more accurately describe reclamation procedure. Procedure is consistent with those performed at other successfully reclaimed sites.
p 3-65 Topsoil redistribution procedures outlined in Chapter 8. See Section 8.8. Other chapters reference Chapter 8. 10 day equilibrium statement removed.
p 3D-2 Clump planting defined on p 3D-4. Involves transplanting of vegetation established on the source material.

242.200 Text corrected, much of Chapter 3 rewritten with the elimination of actual topsoil and vegetation procedures. Backfilling found in Section 3.6.4.

PAGE 5

243 See Section 8.9.

R614-301-300

321.100 The Reference Area was surveyed in 1983. The consultant does not have any additional information concerning the sample results. We recommend that the level of identification will be improved during the survey to be taken at the final Five-Year Permit renewal. SCS will perform a vegetation survey this month.

322.100 Co-Op will conduct a raptor survey over the permit area in May, 1991.

322.220 p 10-16 now includes the required statement. A similar statement has been added to Plate 10-1.

323.100 Reference area has been properly identified on Plate 9-1 in Trail Canyon, properly coordinated with the text.

323.400 Interim vegetated areas are delineated on Plate 2-4.

333.300 Coal fine impact is discussed in Section 3.5.5.2, p 3-48 and 3-48A.

341.100 See Table 9.5-1, p 9-12.

Detailed revegetation plan statement found in Section 3.6.5, p 3-77 and 9.5 p 9-11.

PAGE 6

341.210 (PLS) per acre now indicated on Table 9.5-3, p 9-23.

A new seed mix was presented to DOGM and approved by phone in conversations with Patrick Collins of Mt. Nebo Scientific. The new mixes with latest price quotes are now found in Tables 9.5-2 and 9.5-3. Bonding estimates have been revised appropriately in Section 3.6.8.

Commitment to notify the Division now found in Appendix 3-G p 3G-2 and 9.5 p 9-11.

Commitment to obtain proper seed now found in Appendix 3-G p 3G-4 and 9.5 p 9-22.

Evaluation called for in Appendix 3-G p 3G-6. Elymus salina replaced with Elymus cineris Table 3G-1 p 3G-4.

341.220 p. 9-15 statement transferred to Section 3.6.4.3 p 3-74, 12 ft is correct.

Statement about raking etc. added in Appendix 3-G p 3G-3 and Section 9.5.3.2 p 9-14.

Roughened seedbed statement added to Section 8.2.5 p 8-24.

Mulch statement added to Section 9.5.3.1 p 9-14.

PAGE 7

353.140 Statement added to Section 3.6.5.1 p 3-78. All areas requiring erosion control matting will be included on detailed maps submitted for the final Five-Year Permit Renewal. The best available technology at the time of this final evaluation will be used.

356.110 As can be seen from proposals made this year, the extent of the disturbed area may not be finalized. With the divisions approval, Co-Op proposes to submit this partitioned vegetation sampling plan with the final Five-Year Permit Renewal. This will eliminate the possible multitude of revisions that may be required until that time. The map serves no purpose until reclamation.

The Reference Area was surveyed in 1983. The consultant does not have any additional information concerning the sample results. We recommend that the level of identification will be improved during the survey to be taken at the final Five-Year Permit renewal.

Vegetation monitoring can be found in Section 9.6. Requested statement can be found on p 9-26.

356.120 Vegetation monitoring can be found in Section 9.6. Requested statement (90 pct vs. 70 pct.) can be found on p 9-26.

356.230 Vegetation monitoring can be found in Section 9.6. The reference area standard will be verified at time of reclamation. Requested statement can be found on p 9-26 & 27.

357.100/300 Please review the regulation. The regulations do not appear to prohibit planting of seedlings within the first two years. This would still meet the 80 pct for 8 yrs rule. See also DOGM Revegetation Guidelines for Utah Coal Regulatory Program, Appendix A. Planting seedlings to supplement tree and shrub seeding has proven a valuable technique in previous reclamation. If this opinion is incorrect the text will be changed to meet regulation standards.

The 80-80 rule can be found in Section 9.6 p 9-27.

357.100 See also DOGM Revegetation Guidelines for Utah Coal Regulatory Program, Appendix A. Statement deleted.

357.220 Text corrected as requested. See p 3-59.

PAGE 8

358.200 The overlay of raptor nests will be placed on Plate 3-3 and submitted to the Department on or before 31 Oct 1990.

See new text p 10-14. p 10A-11 not changed as it is a report from a previous date by a separate consultant. The information presented on p 10A-11 is accurate.

R614-301-400

411.200 See Section 4.4.2.2 p 4-8. Available information has been included in the text.

421 Statement added to Section 11.4.2 p 11-10.

R614-301-500

512.100 The highwall shown on Plate 3-2 is actually within the "bonded area". Boundaries have been added to Plate 3-2.

512.110 Plates 3-4 and 3-4A have been certified by a qualified, registered professional engineer.

512.150 Plates 6-1 thru 6-8 have been certified by a qualified, registered professional engineer.

PAGE 9

512.200 Plate 7-2A, As-built Sediment Pond "A", has been certified by a qualified, registered professional engineer. The sediment pond has been certified and re-surveyed and documented on the new Plate 7-2A. Plate 7-2 will remain as the design drawing.

515.100 Statement existing, See Section 3.5.2.2 p 3-41

515.320 Statement added to Section 3.6.10 p 3-94.

521 The discrepancy was due to values calculated with proposed culvert extension and bath house area. New values for the actual disturbed area has been found and are discussed in the text and bonding estimates. See pp 2-9, 3-39, 3-86, 3-89, 8-12, 8-13, 8-18, 9-11, and 10-6.

Areas that are experiencing increased levels of coal fines are being added to the sediment pond controlled drainage area in relation to NOV 90-25-1-1. Additional copies of the text submitted for the NOV will be forwarded to the Division upon request.

521.100 The operator and his consultants will complete cut and fill calculations and reasonable volume estimates, along with any resulting required cross sections and maps for submission to the Division by 30 Nov. 1990. No native fill material has been removed from the site. With the volume of fill material available, covering concrete, asphalt, excess spoil ,etc. will not be a problem.

PAGE 10

pp 3-46, 3D-D, 3-75, 3-76, 4-12. Text has been deleted or rewritten to meet requirements.

521.141 Plates 2-4, 3-2 and 7-1 have been updated to include contour intervals at 5 ft rather than 25 ft. Boundaries of disturbed and undisturbed areas as well as alternate control measure areas are shown on Plate 7-1.

PAGE 11

521.165 Plate 8-3 was previously found on page 8-13, it is now included with the text as a Plate without designated page number.

527.100 Classification of roads has been changed to primary or ancillary. See p 3-7 and Appendix 3-D.

533 Appendix 3-K is included with the text as submitted previously, without new changes.

535.100 See Section 3.6.3.2, page 3-66 and 3-67.

537
Fig 3.6-4 Figure has been modified to match text.
p 3-47(46) Questioned statement has been deleted.
p 3-64 Chapter 3 modified, see Section 8.7.1.3 p 8-24,
series changed to species.

PAGE 12

pp 3-68, 3-75, 3D-4, 4-12, 4-15 Text has been deleted or rewritten to meet requirements.

542.200 Plate 3-2 has been updated to include contour intervals at 5 ft rather than 25 ft.

542.800 Reclamation costs have been updated to reflect the influence of the new revegetation estimates and the new disturbed area calculations. See Section 3.6.8.2 pp 3-84 thru 3-90.

R614-301-700

722 Plates 2-4, 3-2 and 7-1 have been updated to include contour intervals at 5 ft rather than 25 ft.

724.100 See attached letter in regards to water rights issues.

731.121 Wind borne and windblown coal fines are discussed in

Section 3.5.1.1 p 3-40 and 3.6.4 p 3-69.

731.210 p 7-33 has been updated. Mine water surveys are done on an annual basis and will be included in the annual report. Copies of the 1990 updated Plate 7-1A and 7-1B can be forwarded to the Division when survey is complete, and again in the annual report.

742.11, 112, 113 Text has been updated to include estimated runoff volume for each area and to reflect the new terminology. See Appendix 7-K. A commitment to monitor drainage is found on p 7K-2.

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DEC 21 1989

APPENDIXES

DIVISION OF
OIL, GAS & MINING

A	Violation List	2A-1
B	Title Insurance Policy	2B-1
C	Insurance	2C-1
D	Affidavit of Publication	2D-1
E	Pole Line Easement	2E-1
F	Federal Lease	2F-1

LIST OF TABLES

Table 2-1	Property Ownership	2
Table 2-2	Apparent Completeness Review - Other Permits and Licenses	12

LIST OF PLATES

Plate 2-1	Permit Area
Plate 2-2	Surface Ownership
Plate 2-3	Sub-Surface Ownership
Plate 2-4	Surface Facilities

2.2.2 Holders of Leasehold Interest in Surface Area and Coal Rights

The names and addresses of holders of record in Leasehold interest are listed below: Coal mining lease by and between Co-Op Mining Co. and Peabody Coal Co., executed 1 December 1975 (Plate 2-1).

T16S, R7E SLBM	Sec. 14 SW 1/4, SE 1/4
	Sec. 23 E1/2, E1/2, NW1/4, E1/2, SW1/4, SW1/4, SW1/4
	Sec. 24 All West of N-S Fault
	Sec. 25 All West of N-S Fault
(Fed. Lease U024316)	Sec. 13 W 1/2 W 1/2
	Sec. 14, E 1/2 NW 1/4, NE 1/4
(Fed. Lease U024318)	Sec. 26 E 1/2 NW 1/4

The right to mine and remove from, and use for purposes incident to mining, including access roads, camp facilities, surface operations, storage of coal, and other activities. Also unrestricted use of all access roads leading to and from property. Lease in binding on the successors to the parties of the lease. Co-Op also holds Federal Lease U024316 (See Appendix 2-F, Plate 2-1).

2.2.3 Purchase of Record Under a Real Estate Contract for Surface Area Coal

See Appendix 2-B Title Insurance Policy and Property Title.

2.2.4 Operator, if Different from Applicant

Same as above.

2.5.1 Waiver of Owners of Nearby Occupied Dwellings

Applicant does not propose to conduct or locate surface facilities within 300 feet of an occupied dwelling.

2.6 PERMIT TERM INFORMATION - ANTICIPATED FOR EACH PHASE

2.6.1 Starting Date

The mine started construction in 1981 and was in production by late fall of 1981. Mining in the 160 acre Lease addition area is proposed to begin in the spring of 1989 (Appendix 3-K).

2.6.2 Termination Dates

Termination dates anticipated for each phase of mining are nebulous at this time although a detailed estimate of production and reserves are included in the Geology Section and a projection of 22-years appears realistic (from 1990). The final termination date for the mining operation is expected to be 2012.

2.6.3 Numbers or Surface Acres Affected

The anticipated disturbance by the Bear Canyon Mine totals about 12 acres. Plate 2-1 shows potential property expansion and future facilities of the mine.

NOV/CO STATUS REPORT

MINE: ACT/015/025

<u>NOV/CO #</u>	<u>Issued/ Modify</u>	<u>Abatement/ Statement</u>	<u>Term/Vac Date</u>	<u>Pertinent Regulations</u>
N87 26 04 01	06/05/87	06/30/87	T08/03/87	UMC817.121
N87 11 03 01	08/19/87 09/15/87	09/15/87 08/31/87	T09/24/87	UMC817.43, UMC817.45, Restore to cap or replace Dan Duce
N87 11 02 01	08/19/87 11/20/87	10/19/87 08/31/87	T11/20/87	UMC817.52, Dan Duce
N87 27 01 02 1 of 2	09/25/87 12/11/87	10/30/87 10/02/87	T12/11/87	UMC771.19
N87 27 01 02 2 of 2	09/25/87 12/11/87	10/30/87	T12/11/87	UMC817.153
N88 20 01 01	02/12/88	02/12/88 02/12/88	T02/09/88	UMC817.52, UMC817.52 01 OF 01, UMC771.19, Water Monitoring
N88 26 12 02 1 of 2	07/13/88	07/28/88 08/12/88 07/27/88	T08/16/88	UMC771.19, Lump Coal Storage
N88 26 12 02	07/13/88	07/27/88	T07/14/88	UMC771.19, UMC817.50, Hiawatha Seam Water Discharge, 2 of 2
N88 29 01 01	08/04/88 10/08/88	08/19/88 08/26/88 11/02/88 08/12/88	T11/03/88	UMC771.19, Hiawatha Seam Drainage
N88 20 02 01	08/18/88	09/15/88	T09/15/88	UMC771.19, Escape and Ventilation Portal
N88 30 03 01	10/07/88	11/07/88 10/17/88	T11/03/88	UMC817.43, UMC817.45
N88 30 06 03 1 of 3	12/21/88	01/27/88 12/27/88	01/25/89	UMC771.19

<u>NOV/CO #</u>	<u>Issued/ Modify</u>	<u>Abatement/ Statement</u>	<u>Term/Vac Date</u>	<u>Pertinent Regulations</u>
N89 30 06 03 2 of 3	12/21/88	01/27/88 06/30/89 04/04/89 12/27/88	T04/05/89	UMC817.43
N89 30 06 03 3 of 3	12/21/89	01/27/89 06/30/89 04/04/89 12/27/88	04/05/89	UMC817.42
N89 30 01 01	03/14/89	04/15/89 03/17/89	04/05/89	UMC817.43
N89 30 02 01	07/11/89	08/11/89	08/11/89	UMC771.19, UMC817.23
N89 26 21 02 1 of 2	11/16/89 12/29/89	12/15/89 11/27/89	12/24/89 12/24/89	UMC771.19 Compliance w/ permits
N89 26 21 02 2 of 2	11/16/89 12/29/89	12/15/89 11/27/89	12/24/89	UM817.43
N89 28 18 01	07/14/89 07/28/89 08/01/89	07/14/89 10/10/89 07/14/89	10/12/89	UMC771.19, UMC817.43 Cross-Over Belt

During this period 0 unvacated CO's were issued for this mine.
During this period 18 unvacated NOV's were issued for this mine.

Appendix 2-E
POLE LINE EASEMENT

Currently, only one easement and one right-of-way intersect Co-op Mining Company Permit Area. Utah Power and Light Company have a power line easement attached herein and Emery County have a Road Right-of-way addressed in this appendix.

There exists a Facto Right-of-way in the form of a water line owned and maintained by the Emery County Special Service District, however this Right-of-way is presently disputed and is pending legal solution.

374

POLE LINE EASEMENT

11-20-1918
M. L. & J. B. Young
RECORDERS OFFICE
CANYON COUNTY
NOV 1 10 27 AM '18
M.L. & J.B. Young
11-20-1918

FREED COAL AND COKE COMPANY, a corporation, and
HUNTINGTON CORPORATION, a corporation, herein called
"Grantor", hereby convey to UTAH POWER & LIGHT COMPANY,
a corporation, herein called "Grantee", for valuable
consideration, an easement and right of way for the
erection and continued maintenance, repair, alteration,
and replacement of the electric transmission, distribution
and telephone circuits of the Grantee, and 2 guy anchors
and 14 poles, with the necessary guys, stubs, cross-arms
and other attachments thereon, or affixed thereto, for the
support of said circuits, to be erected and maintained
upon and across the premises of the Grantor, in Emery
County, Utah, along a line described as follows:

Beginning on west boundary line of Grantor's land
at a point 1190 feet north, more or less, from
the south quarter corner of Section 26, T. 16 S.,
R. 7 E., S. 1 E., thence running N. 49 55' E.
370 feet, more or less, thence N. 12 58' E. 1692
feet on said line, and along in the SE 1/4 of the
SE 1/4, the E 1/2 of the SE 1/4 and the SE 1/4 of
the NE 1/4 of said Section 26 and the E 1/2 of
the NE 1/4 of Section 27, Township and Range
aforesaid.

This conveyance is made subject to the following
conditions and reservations:

1. There is reserved to the Grantor the right to
plant, cultivate and harvest crops or grass or conduct
mining operations upon the rights of way herein granted and
the right to construct, reconstruct, install, maintain,
repair, renew, operate and use free time to time conduits,
power lines, telephone lines, roads, roadways or other
structures, across, over or under said rights of way, with
their appurtenances, at the option of the Grantor.

2. Grantee shall have the right of ingress to and egress from said rights of way over adjacent lands of the Grantor provided the Grantee shall, in the exercise of said rights, be limited to the use of existing roads and lanes across said lands; or, if no such roads or lanes be available, then to such routes thereover as shall be most convenient and at the same time cause the least possible injury to said lands of the Grantor, or to the crops, trees, buildings or other structures growing or situated thereon.

3. Grantee shall repay the Grantor, on demand, the reasonable value of animals, crops, trees, buildings or other structures injured, damaged or destroyed by the Grantee, its officers, employees, contractors or servants, in the exercise of any right herein conveyed.

4. Grantee shall indemnify and save harmless the Grantor, and any director, officer, servant or employee of the Grantor, from any and all claims, liabilities or expenses, whether for injuries, damages or otherwise, caused by or resulting from any act, negligence or omission of the Grantee, its officers, employees, contractors or servants, in the exercise of any right herein conveyed.

5. The rights of way herein described are conveyed subject to any rights of way, leases and agreements heretofore granted or made by the Grantor or its predecessors in interest.

6. The rights, reservations, conditions and obligations herein set forth are not transferable or assignable by the Grantee except to a successor of its entire business.

7. All rights herein granted shall forthwith cease and determine at the election of Grantor upon the giving of one (1) year's advance-written notice to Grantee.

IN WITNESS WHEREOF the Grantor has executed this conveyance this 15th day of October, 1957.

FREED COAL AND COKE COMPANY

BY: Frederick L. Anderson
President

BY: Laurence G. Dierig
Secretary

STATE OF California }
COUNTY OF Santa Clara } ss.

On this 15th day of October, 1957, before me Jacqueline J. Douglas, a Notary Public in and for the County of Santa Clara, State of California, residing therein, duly commissioned and sworn, personally appeared Frederick L. Anderson and Laurence G. Dierig

both to me to be the persons whose names are subscribed to the within instrument, who being by me duly sworn, did say that they are the President and Secretary of Freed Coal and Coke Company, a corporation, and that said instrument was signed in behalf of said corporation by authority of a resolution and said Frederick L. Anderson and Laurence G. Dierig acknowledged to me that said corporation executed the same.

Jacqueline J. Douglas
Notary Public
Residing at
677 Arbolado Dr. San Alito, Calif

My Commission expires: July 27, 1958

WITNESSES:
Frederick L. Anderson
Laurence G. Dierig

STATE OF California }
COUNTY OF Santa Clara } ss.

On this 15th day of October, 1957, before me Jacqueline J. Douglas, a Notary Public in and for the County of Santa Clara, State of California, residing therein, duly commissioned and sworn, personally appeared Frederick L. Anderson and Laurence G. Dierig

both to me to be the persons whose names are subscribed to the within instrument, who being by me duly sworn, did say that they are the President and Secretary of Huntington Corporation, a corporation, and that said instrument was signed in behalf of said corporation by authority of a resolution.

2E-5

377

Frederick L. Anderson and Laurence G. Duerig acknowledged
to me that said corporation executed the same.

Josephine J. Douglas
Notary Public

My Commission expires:
MY COMMISSION EXPIRES JULY 27, 1939.

Residing at

677 Anselada Dr, Los Altos, Calif.

ASB
2E-6
COH.