

PAP

Permit Application Package

SECTIONS R645-301-100 thru 800

PAP VOL 1 of 3



VALLEY CAMP OF UTAH, INC.

August, 1993

SCOFIELD ROUTE * HELPER, UTAH 84526 * PHONE [801] 448-9413

VALLEY CAMP OF UTAH, INC.
Scofield Route
Helper, Utah 84526
(801) 448-9413

RECEIVED

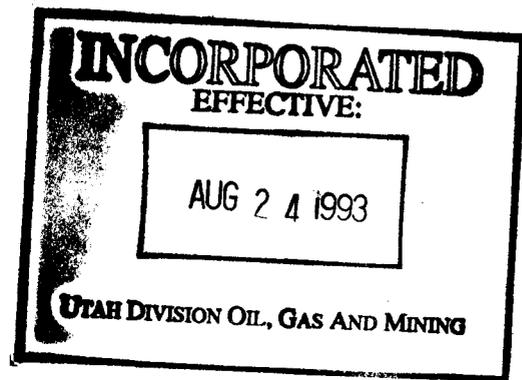
AUG 05 1993

DIVISION OF
OIL GAS & MINING

Mr. Daron R. Haddock, Permit Supervisor
Utah Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center - Suite 350
Salt Lake City, Utah 84001

July 31, 1993

RE: Final Submittal of the Historic PAP.



Dear Daron:

Included within this submittal are the 12 requested copies of the PAP as required under the R645 rules and regulations. The MRP is being submitted under a separate cover. We appreciate your patience in receiving this information.

Should you have any questions, please call.

Sincerely,

VALLEY CAMP OF UTAH, INC.

by:

Steven K. Tanner
Environmental Coordinator

HANSEN, ALLEN & LUCE, INC.

by:

David E. Hansen, Ph.D., P.E.
Principal

VALLEY CAMP OF UTAH, INC.
SCOFIELD ROUTE
HELPER, UTAH 84526

INTRODUCTION

This Mining and Reclamation Plan is submitted by Valley Camp of Utah, Inc.. "Valley Camp" is wholly owned and controlled by The Valley Camp Coal Company, a private corporation. The capital stock of The Valley Camp Coal Company is wholly owned and controlled by Quaker State Corporation.

This 1993 submittal includes a substantial reorganization of the existing Underground Mining and Reclamation Plan Permit, Belina Complex. ACT/007/001, Carbon County; and is prepared as a Site Specific Underground Mining and Reclamation Plan Permit. In order to reduce future efforts required to update and maintain Valley Camps mining permit, this submittal has been separated into two main divisions or volumes. The first volume includes all information requested and required for in the permit application package and is referred to as the "PAP". The second volume contains appropriate information and materials for both the "Operation Plan" and the "Reclamation Plan" and is referred to herein as the Mining and Reclamation Plan "MRP". Appendices appropriate to the submittals have been identified as the "1993" Appendices and are intended to be kept on permanent file with the Utah Division of Oil, Gas & Mining (UDOGM) or other recipient agency. These appendices will henceforth be considered historic and will not be resubmitted with future operation or reclamation submittals. Appendices requiring submittal in the future will be tagged with the year in which they were submitted.

CERTIFICATION STATEMENT

I hereby certify that this Submittal has been prepared by me or under my direct supervision, and that I am a duly registered professional engineer in the State of Utah. Information, data and conclusions contained within this section to the best of my knowledge are true and correct. Some data and conclusions contained herein have been taken directly from previous permit submittals as prepared by the applicant and are assumed correct. Such data and conclusions have been used at times in preparing conclusions for this submittal.

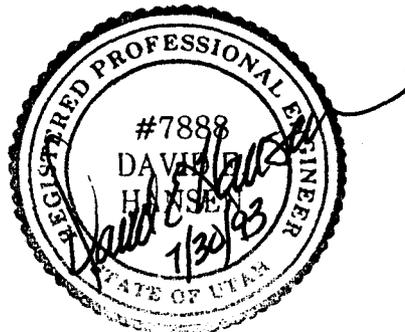


TABLE OF CONTENTS
COAL MINE PERMITTING. R645-301-100.

<u>SECTION</u>	<u>PAGE NO.</u>
100. GENERAL CONTENTS	Page 100-1 of 27
110. LEGAL REQUIREMENTS	Page 100-1 of 27
120. PERMIT APPLICATION FORMAT AND CONTENTS	Page 100-25 of 27
130. REPORTING OF TECHNICAL DATA	Page 100-26 of 27
140. MAPS & PLANS	Page 100-27 of 27
150. COMPLETENESS	Page 100-27 of 27

LIST OF TABLES

<u>TABLE NO.</u>	<u>PAGE NO.</u>
112.100a OFFICERS AND DIRECTORS, QUAKER STATE CORP	Page 100-2 of 27
112.100b OFFICERS AND DIRECTORS, THE VALLEY CAMP COAL CO ..	Page 100-3 of 27
112.100c OFFICERS AND DIRECTORS, VALLEY CAMP OF UTAH	Page 100-3 of 27
112.100d OFFICERS & DIRECTORS, K & H COAL CO.	Page 100-4 of 27
112.400a OTHER MINES AND PERMITS	Page 100-5 of 27
112.400b OPERATOR SAFETY PLANS AND ID NUMBERS	Page 100-8 of 27
112.500 SURFACE OWNERSHIP	Page 100-9 of 27
112.600 COAL OWNERSHIP	Page 100-10 of 27
112.700 MSHA IDENTIFICATION	Page 100-11 of 27
114.100a UNITED STATES COAL LEASE	Page 100-17 of 27
114.100b COAL LEASE NUMBER AND PROPERTY DESCRIPTIONS	Page 100-18 of 27
114.100c CARBON COUNTY COAL LEASES	Page 100-19 of 27
114.100d SURFACE LEASES	Page 100-21 of 27
114.100e SURFACE LEASES AND EASEMENTS	Page 100-22 of 27
114.100f EASEMENTS	Page 100-23 of 27
114.100g EASEMENT	Page 100-23 of 27

LIST OF TABLES - (Continued)

<u>TABLE NO.</u>	<u>PAGE NO.</u>
116.100a BEGINNING OF OPERATIONS	Page 100-24 of 27
116.100b LIFE OF MINES	Page 100-24 of 27

LIST OF MAPS

<u>MAP NO.</u>	<u>REFERENCE PAGE</u>
100. Permit Area Base Map	Page 100-2 of 27
112.500. Surface Ownership	Page 100-9 of 27
112.600. Coal Ownership	Page 100-10 of 27

R645-301-100. GENERAL CONTENTS.

110. LEGAL REQUIREMENTS.

VERIFICATION OF RESPONSIBLE INDIVIDUAL

Verification of Application by Responsible Official

STATE OF UTAH)
 : ss.
COUNTY OF CARBON)

I, James L. Litman, having been duly sworn, depose and state that I am authorized to complete and file this "Permit Application Package" on behalf of Valley Camp of Utah, Incorporated, and that the information contained herein is true and correct to the best of my information and belief.

James L. Litman (Signature)
James L. Litman (Printed Name)
Vice Chairman & Chief Exec. Officer (Title)

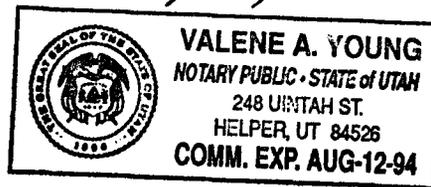
Subscribed and sworn to before me this 5th day of Aug 19 93

Valene A. Young
NOTARY PUBLIC

Residing at: *Heber, Utah*

My Commission Expires:

8-12-94



R645-301-100. GENERAL CONTENTS.

110. LEGAL REQUIREMENTS.

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STATE OF UTAH)
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COUNTY OF CARBON)

I, _____, having been duly sworn, depose and state that I am authorized to complete and file this "Permit Application Package" on behalf of Valley Camp of Utah, Incorporated, and that the information contained herein is true and correct to the best of my information and belief.

_____(Signature)
_____(Printed Name)
_____(Title)

Subscribed and sworn to before me this ____ day of _____, 19__

NOTARY PUBLIC

Residing at: _____

My Commission Expires:

112. IDENTIFICATION OF INTERESTS.

Valley Camp of Utah, Inc., is the mine operator on the subject properties shown on Map 100. The principal place of business for Valley Camp of Utah, Inc., is Scofield, Utah. The address is Scofield Route, Helper, Utah, 84526. The telephone number is (801) 448-9420.

Map 100. Permit Area Base Map

112.100. STATUS OF APPLICANT

Valley Camp of Utah, Inc., is a Utah corporation. The capital stock of Valley Camp of Utah, Inc., is wholly owned and controlled by The Valley Camp Coal Company. The Valley Camp Coal Company's principal corporate offices are located at 206 Seneca Street, P. O. Box 900, Oil City, PA. 16301. The Valley Camp Coal Company is a corporation organized and existing under the laws of the State of Delaware. The capital stock of The Valley Camp Coal Company is wholly owned and controlled by Quaker State Corporation, P. O. Box 989, Oil City, PA. 16301. Lists of Valley Camp of Utah, Inc., and its parent company's officers and directors are shown below:

TABLE 112.100a
OFFICERS AND DIRECTORS, QUAKER STATE CORP

QUAKER STATE CORPORATION	
Jack W. Corn	Chairman
Conrad A. Conrad	President & CEO
James D Berry III	Executive Vice President
Gerald W. Callahan	V.P., Counsel & Corp. Secretary
Embert H. Delong	Vice President
William C. Helsley	Vice President
R. Scott Keefer	V.P., Finance & Treasurer & Chief Financial Officer
John R. Sedlacko	V. P., Controller
W. Roger McCauley	Assistant Treasurer, Banking & Financial Planning
Joyce A. McFadden	Assist. Corp. Sec.

TABLE 112.100b
OFFICERS AND DIRECTORS, THE VALLEY CAMP COAL CO

THE VALLEY CAMP COAL CO.	
James D. Berry III	Chairman & CEO
James L. Litman	Vice President-Mining
David E. Lung	Vice President-Finance & Administration, Secretary & Treasurer
A. Perry Mason	Vice President-Marketing and Services
Rex A. Shoup	Assistant Treasurer
Richard Winkler	Assistant Treasurer
Jack W. Corn	Director
Conrad A. Conrad	Director
K. E. McElhattan	Director
Lee R. Forker	Director
William J. McFate	Director

TABLE 112.100c
OFFICERS AND DIRECTORS, VALLEY CAMP OF UTAH

VALLEY CAMP OF UTAH, INC.	
James L. Litman	Vice Chairman & CEO
Vacant	President & CEO
David E. Lung	Secretary & Treasurer
Richard K. Sager	Assistant Secretary
John S. Kirkham	Assistant Secretary
James D. Berry, III	Director

Kanawha and Hocking Coal and Coke Company is a subsidiary of The Valley Camp Coal Company, and provides rights necessary for conducting mining operations by Valley Camp of Utah, Inc., through various property agreements. A listing of the officers and directors of Kanawha and Hocking Coal and Coke Company is shown below:

**TABLE 112.100d
OFFICERS & DIRECTORS, K & H COAL CO.**

KANAWHA & HOCKING COAL & COKE COMPANY	
James L. Litman	Executive Vice President
David E. Lung	Secretary & Treasurer
John S. Kirkham	Assistant Secretary
A. Perry Mason	Director

112.200. RESIDENT AGENT

The resident agent of Applicant for the purpose of service of notices and orders related to operations under this Mining and Reclamation Plan (MRP) is:

c/o James L. Litman
 President & Chief Operating Officer
 Valley Camp of Utah, Inc.
 Scofield Route
 Helper, Utah 84526
 (801) 448-9456

The resident agent of Applicant pursuant to the laws of the State of Utah for service of civil process is:

C. T. Corporation
 175 South Main Street
 Salt Lake City, Utah 84111
 (801) 364-1228

112.300. OWNERSHIP

N/A

112.400. OTHER OPERATIONS

Valley Camp of Utah, Inc., has not operated any surface coal mining operation in the United States within the five years preceding the date of this MRP. Valley Camp Coal Co., has

operated underground coal mining operations during the stated time period under the same corporate name. A listing of those mines, associated permit numbers and regulatory agencies responsible for the permits is shown below:

**TABLE 112.400a
OTHER MINES AND PERMITS**

PERMIT NO.	FACILITY	PERMIT NO.	FACILITY
REGULATORY AUTHORITY: WEST VIRGINIA DEPT. OF NATURAL RESOURCES			
179-70	V.C. No. 10 Mine	4-73	V.C. No. 14 Mine
438-70	V.C. No. 10 Mine	10-73	Prospecting Permit
576-70	V.C. No. 14 Mine	48-73	V.C. No. 10 Mine
586-70	V.C. No. 10 Mine	104-73	V.C. No. 6 Mine
27-71	Prospecting Permit	4-74	Prospecting Permit
333-71	V.C. No. 6 Mine	73-74	Prospecting Permit
26-72	V.C. No. 10 Mine	16-75	V.C. No. 6 Mine
59-72	Prospecting Permit	197-75	Prospecting Permit
118-72	V.C. No. 10 Mine	205-75	V.C. No. 6 Mine
154-72	Witcher Cr. Mine	260-76	V.C. No. 6 Mine
236-72	V.C. No. 14 Mine		
REGULATORY AUTHORITY: WEST VIRGINIA DEPARTMENT OF MINES			
D-145	V.C. No. 9 Tunnel	D-6801	V.C. No. 15 Mine
D-318	Alexander Mine	D-8083	V.C. No. 35 Mine
D-319	V.C. No. 3 Mine	D-8084	V.C. No. 36 Mine
D-4122	V.C. No. 1 Mine	D-8213	V.C. No. 37 Mine
D-5295	V.C. No. 21A Mine	D-8661	V.C. No. 39 Mine
D-5763	V.C. No. 5A Mine	D-8740	V.C. No. 40 Mine
D-5925	V.C. No. 30 Mine	D-8839	V.C. No. 41 Mine
D-6172	V.C. No. 31 Mine	D-8840	V.C. No. 42 Mine
D-6337	V.C. No. 32 Mine	D-10668	V.C. No. 43 Mine
D-6632-S	V.C. No. 32A Mine	4779	#6 Strip Mine
D-66739	V.C. No. 34 Mine	15477	#17 Strip Mine
D-6747-S	V.C. No. 32B Mine	14377	#46 Strip Mine
D-6799	V.C. No. 12A Mine	1880	#45 Strip Mine
D-6800	V.C. No. 15A Mine		

PERMIT NO.	FACILITY	PERMIT NO.	FACILITY
REGULATORY AUTHORITY: MINE SAFETY AND HEALTH ADMINISTRATION			
46-01348	V.C. No. 10 Mine	46-03178	V.C. No. 37 Mine
46-01349	V.C. No. 5A Mine	46-03305	V.C. No. 15 Mine
46-01351-0	V.C. No. 6 Mine	46-03307	V.C. No. 15A Mine
46-01352	V.C. No. 31 Mine	46-03308	V.C. No. 35 Mine
46-01353	V.C. No. 30 Mine	46-03309	V.C. No. 36 Mine
46-01354	V.C. No. 9 Tunnel	46-03867	V.C. No. 46 Mine
46-01440-0	Alexander Mine	46-03886	V.C. No. 39 Mine
46-01482-0	V.C. No. 3 Mine	46-04053	V.C. No. 40 Mine
46-01483-0	V.C. No. 1 Mine	46-04135	V.C. No. 41 Mine
46-01977	V.C. No. 12A Mine	46-04136	V.C. No. 42 Mine
46-02121	V.C. No. 34 Mine	46-05551	V.C. No. 17 Mine
46-02422	V.C. No. 14 Mine	46-05630	V.C. No. 18 Mine
46-02423	V.C. No. 10A Mine	46-05906	V.C. No. 43 Mine
46-02513	V.C. No. 14A Mine	46-06103	V.C. No. 45 Mine
REGULATORY AUTHORITY: WEST VIRGINIA DEPT OF NATURAL RESOURCES			
143-73	V.C. No. 46 Mine	H-318	V.C. No. 17 Road
154-77	V.C. No. 17 Mine	H-348	V.C. No. 17 Road
47-79	V.C. No. 6 Mine	H-473	V.C. No. 15 Road
18-80	V.C. No. 45 Mine	H-473	V.C. No. 43 Road
EM-19	V.C. No. 36 Mine	I-508	Bufflick Tipple
EM-20	V.C. No. 9 Tunnel	I-527	Witcher Bathhouse
EM-21	V.C. No. 12A Mine	I-540	Shrewsbury Office
EM-22	V.C. No. 40 Mine	I-543	KC&NW RR Tipple
EM-23	V.C. No. 15A Mine	P-553	V.C. No. 8 Prep.
EM-24	V.C. No. 15 Mine	R-507	No. 36 & No. 40 Dam
EM-30	V.C. No. 42 Mine	R-523	Donaldson Prep
H-57	Witcher Creek Road	UO-634	V.C. No. 43 Mine

The list of permits, licenses, and identification numbers applicable to the Mine Permit Area is as follows:

Office of Surface Mining (Western Field Operations)

Reclamation & Enforcement
Brooks Tower, Second Floor
1020 15th Street
Denver, CO 80202

Permit Application Package. Included in permit application to the State of Utah. Emphasis on surface operation and reclamation.

U.S. Environmental Protection Agency
Region VIII
999 18th Street
Denver Place - Suite 500
Denver, CO 80202-2405

Prevention of Significant Deterioration Permit. Not required as per letter dated May 7, 1980, and May 23, 1975, from Utah Dept. of Health.

Oil Spill Prevention Control and Countermeasure Plan. Plan is on file at the Mine Office. Applies to facility drainage, bulk storage tanks, transferring, loading and unloading.

National Pollutant Discharge Elimination System Permits. Number UT-022985 approved August 19, 1992. Processed by Utah State and approved by EPA.

U.S. Forest Service
Price, Utah 84501

Surface Distribution and Reclamation Plan. Agreement dated September 25, 1979. Emphasis on subsidence and hydrology.

U.S. Treasury Department
Washington, D.C.

Explosive Storage and Usage Permit. When explosives are used they are obtained and handled according to state and federal regulations. Pertains to use of explosives underground.

U.S. Federal Communication Commission.
Washington, D.C.

License for Industrial Radio Service No. 8710393611, 11/17/87.
License for Private Operational Fixed Microwave Radio Service No. 805830, 7/13/84.

Mine Safety and Health Administration
U.S. Dept. of Labor
P.O. Box 25367
Denver Federal Center
Denver, CO 80225

TABLE 112.400b
OPERATOR SAFETY PLANS AND ID NUMBERS

Facility	I.D. Number
Belina No. 1 Mine	No. 42-01279 issued February 12, 1976.
Belina No. 2 Mine	No. 42-01280 issued February 12, 1976.
Valcam Loadout	No. 42-01280 issued November 13, 1986.

Roof Control Plan. Approved September 9, 1988, and reviewed every 6 months.
 Ventilation System-Methane and Dust Control Plan. Approved April 11, 1989, and reviewed every 6 months.
 Fan Stoppage Plan. Approved July 28, 1980.
 Fire fighting and Evacuation Plan. Exercise every 90 days.

Utah Department of Health.
 Division of Environmental Health
 288 North 1460 West PO Box 16690
 Salt Lake City, Utah 84116-0690

Air Quality. Approved by letter, August 17, 1981.

Utah Division of Oil, Gas, and Mining.
 355 W. North Temple
 3 Triad Center, Suite 350
 Salt Lake City, Utah 84180-1203

Permit Application Package. ACT/007/001.

State Engineer
 Division of Water Rights
 200 Empire Bldg.
 231 E. 400 S.
 Salt Lake City, Utah 84111

Belina Water Well. Water rights exchange application No.1691.

Utah No. 1. Water Well. Water rights exchange application No.77-17.

Alpine School District
 50 North Center
 American Fork, Utah
 84003.

Lease of Culinary Water - March 25, 1976.

Carbon County
 Carbon County Courthouse
 Price, Utah 84501

Business License Mining: Jan. 1, 1989. No. 89044 (ongoing)
 Valcam: Jan. 1, 1989. No. 89045 (ongoing)

112.500. thru 112.600. PROPERTY OWNERSHIP

The legal or equitable owners of record of the areas that are affected by, or contiguous to, surface operations and facilities of Valley Camp of Utah, Inc., are shown on, Surface Ownership Map 112.500. A complete listing of Surface Owners and their addresses are shown below:

Map 112.500. Surface Ownership

**TABLE 112.500
 SURFACE OWNERSHIP**

NAMES & ADDRESSES OF OWNERS	NAMES & ADDRESSES OF OWNERS
Alexander, Brent L. & Reese A. Bawden, Alan 1145 S. 2030 E. Price, Utah 84501	Madsen, Della L. & Hilda M. Meadow, Utah 84644
Alpine School District 50 North Center American Fork, Utah 84003	Marakis, Koula & Helen 150 E. 1st S. P.O. Box 805 Price, Utah 84501
Carbon County School District 65 E. 400 N. Price, Utah 84501	Mt. States Telephone c/o US West 5295 So. 300 W. Salt Lake City, Utah 84111
Coastal States Energy Co. 175 East 400 South Salt Lake City, Utah 84111	Oman, Milton A. 61 South Main Salt Lake City, Utah 84115
Hellenic Orthodox Church Price, Utah 84501	Oman, Milton A. & Bessie 61 South Main Salt Lake City, Utah 84115
Jacob, J. Mark & James C. 754 S. Cherry Orern, Utah 84057	Otani, Jack & Sei P.O. Box 501 Clear Creek, Utah 84517

NAMES & ADDRESSES OF OWNERS	NAMES & ADDRESSES OF OWNERS
Jensen, Jack L. 1101 North 50 West Orem, Utah 84057	Questar Pipeline Co. c/o Mountain Fuel Supply Co. P.O. Box 11368 Salt Lake City, Utah 84111
Kanawha & Hocking Coal and Coke Company P.O. Box 218 Philadelphia, West Virginia 26059	Radakovich, Robert & Ellen 340 N. 600 E. Price, Utah 84501
Kosec, Louis & Anna Rt. #1, Box 12 Helper, Utah 84526	Rescu-Med, Inc. P.O. Box 1115 Provo, Utah 84601
L.D.S. Church 336 S. 3rd E. Salt Lake City, Utah 84111	Telonis, Evangelos George c/o Angelo Georgedes 761 N. 300 E. Price, Utah 84501
L&L Agri Business P.O. Box 51 Moroni, Utah 84646	Theis, Anthony J. Rt. 1 P.O. Box 33 New Ulm, Texas 78950
Lutheran High School Assn. 2222 North Santiago Blvd. Orange, CA. 92667	United States of America, Dept. of Agriculture U.S. Forest Service 599 West Price River Drive Price, Utah 84501

The legal or equitable owners of record of the coal to be mined, and the coal contiguous to the coal to be mined, are shown on Coal Ownership Map 112.600. A complete listing of Coal Ownership and their addresses are shown below:

Map 112.600. Coal Ownership

**TABLE 112.600
COAL OWNERSHIP**

NAMES & ADDRESSES OF OWNERS	NAMES & ADDRESSES OF OWNERS
Carbon County Courthouse Price, Utah 84501	Telonis, Evangelos George c/o Angelo Georgedes 761 N. 300 E. Price, Utah 84501

NAMES & ADDRESSES OF OWNERS	NAMES & ADDRESSES OF OWNERS
Coastal States Energy Company Nine Greenway Plaza Houston, Texas, 77046	United States of America, Dept. of the Interior, Bureau of Land Management, University Club Building Salt Lake City, Utah, 84138
Kaiser Steel Corporation 300 Lakeside Drive Oakland, California, 94666	Utah Power & Light Company P.O. Box 899 Salt Lake City, Utah, 84110
Kanawha & Hocking Coal & Coke Company P.O. Box 218 Philadelphia, West Virginia, 26059	Western Reserve Coal Company, Inc. c/o Dean Phillips P.O. Box 188 Lewiston, Missouri, 63452
Tanner, Noal 2796 North Arapahoe Lane Provo, Utah, 84601	

The holders of record of any leasehold interest in areas to be affected by surface operations or facilities and the holders of record of any leasehold interest to be mined are discussed and presented in detail in Section

112.700. MSHA I.D. NUMBERS.

The Mine Safety and Health Administration identification numbers for the subject mines and support facility are:

**TABLE 112.700
MSHA IDENTIFICATION**

MINE	IDENTIFICATION NO.
Belina No. 1 Mine	42-01279
Belina No. 2 Mine	42-01280
Valcam Loadout Facility	42-01280

112.800. INTEREST IN OTHER LANDS

There are no properties contiguous to the Mine Permit Area which are subject to any pending options or other undisclosed interests held or made by the applicant.

113. VIOLATION INFORMATION.

113.110. SUSPENSION OF PERMIT

Valley Camp of Utah, Inc., nor any subsidiary, affiliate or persons controlled by or under common control of The Valley Camp Coal Company have had a Federal or State Mining Permit suspended or revoked in the last five years.

113.120. FORFEITURE OF BOND

Neither Valley Camp of Utah Inc. or any of the entities or persons referred to in this section have had a mining bond or similar security deposited in lieu of bond forfeited.

113.200. thru 113.250. INFORMATION REGARDING SUSPENSION OR FORFEITURE

N/A

113.300. thru 113.350. VIOLATIONS

Valley Camp of Utah, Inc., has not received any violations with respect to surface coal mining operations, but has received the following violations concerning underground coal mining operations:

1. NOV No. 79-5-3-40. Issued by OSM on December 4, 1979. a. "Material placed on downslope below road cut", in violation of 30 CFR 211.40 (b) and 717.14 (c). No penalty points or civil penalty assessed.

b. "Failure to maintain access and haul roads as required", in violation of 30 CFR 717.17 (j) (1) and 211.40 (b). Violation was vacated.

c. "Failure to pass surface drainage from the disturbed areas through sedimentation ponds", in violation of 30 CFR 717.17 (a) and 211.40 (b). Violation was vacated.
2. NOV No. 80-5-18-7. Issued by OSM on January 8, 1980. "Failure to maintain culvert which drains access road", in violation of 30 CFR 717.17 (j) (3) (ii). Violation was vacated. Abatement was completed January 9, 1980.
3. NOV No. 80-5-7-15. Issued by OSM on June 23, 1980. "Failure to salvage topsoil", in violation of 30 CFR 717.20

(a). Final assessment was 29 points and no civil penalty. Abatement was completed July 22, 1980.
4. NOV No. 80-1-3-2. Issued by UDOGM on August 7, 1980. a."Failure to pass surface drainage from the disturbed area through a sedimentation pond", in violation of 30 CFR 717.20

(a). Final assessment was 11 points and \$200.00. Abatement was completed December 19, 1980.

- b. "Failure to maintain ditches and culverts", in violation of 30 CFR 717.17(j) (3) (ii). Final assessment was 9 points and no civil penalty. Abatement was completed Aug. 11, 1980.
5. NOV No. 80-V-15-12. Issued by OSM on December 10, 1980. "Operating without an approved permit", in violation of PL 95-87, Section 502 (a) and 211.10 (c). Violation was vacated.
6. NOV No. 81-2-5-2. Issued by UDOGM on June 1, 1981.
- a. "Failure to post topsoil markers on topsoil or other vegetation supporting material", in violation of UMC 817.11 (g). Final assessment was 24 points and no civil penalty. Violation was terminated July 9, 1981.
- b. "Failure to protect topsoil from wind and water erosion, unnecessary compaction or contamination which lessens the capability of the material to support vegetation when redistributed", in violation of UMC 817.23 (b). Final assessment was 24 points and no civil penalty. Abatement was completed July 9, 1981.
7. NOV No. N81-3-11-2. Issued by UDOGM on July 9, 1981. a. "Failure to comply with terms and conditions of interim permit", in violation of UMC 771.19. Final assessment was 30 points and \$400.00. Abatement was completed August 7, 1981.
- b. "Failure to post perimeter markers", in violation of UMC 817.11 (d). Final assessment was 10 points and \$100.00. Abatement was completed July 20, 1981.
8. NOV No. 81-2-10-1. Issued by UDOGM on August 5, 1981. "Failure to comply with terms and conditions of permit-failure to minimize erosion to the extent possible", in violation of UMC 771.19 and UMC 817.45. Final assessment was 17 points and \$170.00. Abatement was completed August 21, 1981.
9. NOV No. 81-2-17-1. Issued by UDOGM on December 17, 1981. "Operating without a permit, failure to conduct mine operations in accordance with an approved mine plan, unauthorized disposal of underground development waste outside the permit area", in violation of UCA 1953 40-10-9 (1), UMC 771.19, and UMC 817.71 (a). Final assessment was 0 points and no fine. Abatement was completed December 17, 1981.
10. NOV No. 82-1-9-2. Issued by UDOGM on July 21, 1982. a. "Failure to operate in accordance with approved plan, failure to maintain sediment", in violation of UMC 817.46 (e), UMC 771.19 and UMC 817.45. Final assessment was 32 points and \$440.00. Abatement was completed October 20, 1982.
- b. "Failure to meet effluent limitations", in violation of UMC 817.41 (c). Final assessment was no points or fine. Abatement was completed before July 1, 1983.
11. NOV No. 82-4-11-1. Issued by UDOGM on October 1, 1982. "Failure to maintain sedimentation ponds to prevent short circuiting and ensure that water discharged from the disturbed area complies with all State and Federal water quality limitations. Failure to meet applicable State and Federal effluent limitations", in violation of UCA 40-10-18

- (2) (i) (ii), UMC 817.41 (c), UMC 817.42 (a)(7), UMC 817.42 (c) and UMC 817.46 (e). Final assessment was 10 points and \$180.00. Abatement was completed October 1, 1982.
12. NOV No. 83-1-1-1. Issued by UDOGM on April 12, 1983. "Failure to comply with applicable water quality effluent limitations", in violation of UCA 40-10-22, UMC 817.41 (c) and UMC 817.42 (a) (f). Final assessment was 27 points and \$340.00. Abatement was completed by July 11, 1983.
 13. NOV No. 83-7-4-1. Issued by UDOGM on April 12, 1983. "Failure to pass all surface drainage from the disturbed areas through a sedimentation pond, a series of sedimentation ponds, or a treatment facility, before leaving the permit area. Failure to maintain sediment control facilities to prevent to the extent possible additional contributions of sediment to stream flow runoff outside the permit area", in violation of UCA 40-10-18 (2) (i) (ii), UMC 817.42 (a), UMC 817.42 (a) (f), and UMC 817.45 (i). Final assessment was 24 points and \$280.00. Abatement was completed Apr. 26, 1983.
 14. NOV No. 83-7-5-1. Issued by UDOGM on April 13, 1983. "Failure to post perimeter markers in a manner that clearly marks the perimeter of all areas affected by surface operations or facilities", in violation of UMC 817.11. Final assessment was no points and no fine. Abatement was completed April 13, 1983.
 15. NOV No. 83-7-6-1. Issued by UDOGM on July 26, 1983. "Operating without a permit, failure to conduct under-ground coal mining activities in accordance with an approved plan", in violation of UCA 40-8-17 (1), UCA 40-10-9, and UMC 771.19. Final assessment was 48 points and \$920.00. Abatement was completed September 1, 1983.
 16. NOV No. C-83-1-1-1. Issued by UDOGM on July 26, 1983. "Failure to meet effluent limitations", in violation of UCA 40-10-22, UMC 817.41 (c) and UMC 817.42 (a) (7). Final assessment was no points and no fine. Abatement was completed August 18, 1983.
 17. NOV No. N84-7-2-10. Issued by UDOGM on February 1, 1984. "Failure to meet effluent limitations", in violation of UCA 40-10-18 (2) (i) (ii) and UMC 817.42 (a) (7). Final assessment of 82 points and \$1120.00.
 18. NOV No. N84-7-6-1. Issued by UDOGM on April 26, 1984. "Failure to meet effluent limitations", in violation of UCA 40-10-18 (2) (i) (ii) and UMC 817.42 (a) (7). Final assessment was 28 points and \$360.00. Abatement was completed October 28, 1985.
 19. NOV No. N84-7-9-1. Issued by UDOGM on August 8, 1984. "Failure to meet effluent limitations", in violation of UCA 40-10-18 (2) (i) (ii), and UMC 817.42 (a) (7). Final assessment was 36 points and \$520.00. Abatement was completed September 10, 1984.
 20. NOV No. N84-2-23-2. Issued by UDOGM on November 15, 1984. "Failure to maintain sediment control measures to function as designed", in violation of UMC 817.45 and UMC 771.19. Final assessment was 27 points and \$340.00. Abatement was completed November 27, 1984.

21. NOV No. N85-2-3-2. Issued by UDOGM on March 5, 1985. a."Failure to maintain runoff diversions in order to pass all surface drainage from the disturbed area through a sedimentation pond", in violation of UMC 817.42 (a) (1), UMC 817.45, UCA 40-10-18 (2) (i) (ii). Final assessment was no points and no fine. Abatement was completed April 12, 1985.

b. "Failure to maintain sediment control measures to function in accordance with approved designs", in violation of UMC 817.45, UMC 771.19, and UCA 40-10-18 (2) (i) (ii). Final assessment was no points and no fine. Abatement was completed May 6, 1985.
22. NOV No. N85-2-10-2. Issued by UDOGM on June 27, 1985. a."Failure to notify the Division within 5 days of receipt of analytical results of NPDES discharge samples, which indicated non-compliance with the applicable effluent limitations", in violation of UMC 817.52 (b) (i) (ii). Final assessment was no points and no fine. Abatement was completed July 12, 1985. b. "Failure to clearly mark buffer zone", in violation of UMC 817.11 (e) and UMC 817.57 (b). Final assessment was no points and no fine. Abatement was completed July 16, 1985.
23. NOV No. N85-2-11-1. Issued by UDOGM on July 22, 1985. "Failure to meet applicable effluent limitations", in violation of UMC 817.42 (b) and UCA 40-10-18 (2) (i) (ii). Final assessment was 40 points and \$420.00. Abatement was completed July 12, 1985.
24. NOV No. N85-2-12-1. Issued by UDOGM on August 3, 1985. "Conducting mining activities without a permit", in violation of UMC 771.19 and UCA 40-10-9 (1). Final assessment was 24 points and no fine. Abatement was completed April 28, 1985.
25. NOV No. N86-8-2-1. Issued by UDOGM on January 17, 1986. "Failure to maintain class 1 road, and to control or minimize erosion and siltation, air and water pollution, and damage to public or private property", in violation of UMC 817.150, UMC 817.153, and UCA 40-10-18 (2) (ii) (j). Final assessment was no points and no fine. Abatement was completed January 30, 1986.
26. NOV No. N86-9-8-1. Issued by UDOGM on July 18, 1986. "Failure to pass surface drainage through a treatment facility before leaving permit area", in violation of UMC 817.42 (a) (1), UCA 40-10-18 (i), and UCA 40-10-18 (i) (ii). Final assessment was 13 points and \$130.00. Abatement was completed August 19, 1986.
27. NOV No. N86-9-11-1. Issued by UDOGM on September 30, 1986. "Failure to comply with terms and conditions of the approved permit. Failure to collect water monitoring data at the approved frequency", in violation of UMC 771.19 and UMC 817.52. Final assessment was 22 points and \$240.00. No abatement was required.
28. NOV No. N86-9-11-1. Issued by UDOGM March 6, 1987. "Failure to prevent to extent possible additional contributions of sediment to stream flow or to runoff outside of the permit area", in violation of UMC 817.45. Final assessment was 23 points and \$260.00. Abatement was completed March 10, 1987.

29. NOV No. N87-26-1-1. Issued by UDOGM on April 9, 1987. "Failure to prevent to extent possible, sediment contribution to Whisky Creek or to runoff outside the permit area," in violation of UMC 817.45 (i), UCA 40-10-18 (2) (i) (ii). Final assessment was 22 points and no fine. Abatement was complete April 16, 1987.
30. NOV No. N87-9-12-1. Issued by UDOGM on October 21, 1987. "Failure to conduct water monitoring in a manner approved by the Division", in violation of 817.52 (a) (1) and (b) (1). Final assessment was 31 points and \$420.00. No abatement was required.
31. NOV No. 87-9-14-1. Issued by UDOGM on November 5, 1987. "Failure to maintain road culverts in such a manner which prevents plugging, collapse, or erosion at inlets and out-lets." In violation of UMC 817.153 (c) (1) (ii). Final assessment was 5 points and \$50.00. Abatement was completed November 11, 1987.
32. NOV No. 88-2-116-2. Issued by OSM on June 23, 1988. 1 of 2 "Failure to provide a registered professional engineer's certification for the construction of the dams and embankments associated with ponds 001A, 002A, 003A, and 004A, in violation of UCA 40-10-1; UMC 817.49 (b). 2 of 2 "Failure to provide a registered professional engineers certification for the construction of the Class I roads at the Belina Mine Complex," in violation of UCA 40-10-1; UMC 817.150 (d) (i). Final assessment was 9 points each and no fine. Abatement was completed August 8, 1988.
33. NOV No. 88-28-4-1. Issued by UDOGM July 7, 1988. "Failure to notify the Division that a NPDES permit effluent limitation noncompliance has occurred," in violation of UMC 817.52 (b) (1) (ii) and UMC 817.41 (c). Final assessment was 30 points and \$400.00 fine. No abatement was required.
34. NOV No. 88-28-9-1. Issued by UDOGM on October 20, 1988. "Failure to meet effluent limits during discharge of mine water," in violation of UMC 817.41(c). Final assessment was 1 point and no fine. Abatement was completed January 9, 1989.
35. NOV No. 89-28-4-2. Issued by UDOGM on March 16, 1989. Violation 1 of 2, "Failure to conduct mining operations in accordance with the permit and approved mining plan," in violation of UMC 711.19 and UMC 817.46 (Discharge of water through decant pipe at Pond 004a). (Abated)

Violation 2 of 2, "Failure to store non-coal waste in a designated portion of the permit area," in violation of UMC 817.89. (Abated)
36. NOV, No. 89-28-6-1. Issued by UDOGM on April 20, 1989. "Failure to maintain 004a, emergency spillway discharging," in violation of UMC 817.46 (g) (i) and 771.19 (Varmint activity under riprap caused leaking). (Abated)
37. NOV No. 89-12-1-1. Issued by UDOGM on April 24, 1989. "Failure to comply with the conditions and terms of the permit to renew MRP in a timely manner." in violation of UMC 771.19, UMC 771.21 (b)(2), and UMC 788.14. (Abated)

- 38. NOV No. 90-13-2-1. Issued by UDOGM on June 27, 1990. "Failure to submit annual summary report," in violation of R614-300-143. (Abated)
- 39. NOV No. 90-28-4-1. Issued by UDOGM on June 25, 1990. "Failure to conduct coal mining operations as described in the approved plan," in violation of R614-301-300.142 and R614-301-528. (Coal stored outside areas designated for coal storage). (Abated)
- 40. NOV No. 91-15-1-1. Issued by UDOGM on May 22, 1991. "Failure to maintain diversion," in violation of R614-301-742.312. (Half pipe diversion had accumulated some debris near the discharge). (Abated)
- 41. NOV's No. 91-38-2-2, 1 of 2. Issued by UDOGM on August 13, 1991. "Failure to maintain diversions," in violation of R614-301-742.300 and 301-742.312. 2 of 2 "Failure to maintain sediment control structures," (Straw bales were washed away during an event). (These violations were Vacated by UDOGM)
- 42. NOV No. 91-39-6-1. Issued by UDOGM on July 8, 1991. "Failure to maintain non-coal mine waste in a controlled manner", in violation of R614-301-542.741. (Trash and litter were allowed to accumulate around the waste dumpsters). (Abated)
- 43. NOV No. 92-39-4-1. Issued by UDOGM on April 29, 1992. "Failure to maintain non-coal mine waste in a controlled manner", in violation of R614-301-542.740 and 301-542.741. (Trash and litter were allowed to accumulate around the waste dumpsters). (Abated)

114. RIGHT OF ENTRY AND OPERATION INFORMATION.

There is no purchaser of record under a real estate contract of areas to be affected by surface operations and facilities or the coal to be mined.

114.100. thru 114.300. DESCRIPTION OF DOCUMENTS

Valley Camp of Utah, Inc., has title to and interest in the subject coal lands by way of warranty deeds, bills of sale, assignments, leases and easements. There are no surface or subsurface rights in the Mine Permit Area which are subject to any pending litigation. The assignments pertaining to the United States Coal Leases are listed below. Note that all locations are based upon the Salt Lake Base and Meridian:

**TABLE 114.100a
UNITED STATES COAL LEASES**

LEASE NO.	ACREAGE	ISSUED TO	DATE OF ISSUANCE
U-020305	1,439.4	Emmet K. Olson	3/01/62
U-017354	1,028.5	Independent Coal & Coke Co.	1/01/62

LEASE NO.	ACREAGE	ISSUED TO	DATE OF ISSUANCE
U-044076	2,367.8	Armeda N. McKinnon	9/01/65
U-067498	501.0	Independent Coal & Coke Co.	1/01/62

These lease number and property locations can be found on the Coal Ownership Map 112.500. The properties are described based upon the Salt Lake Base and Meridian as follows:

TABLE 114.100b
COAL LEASE NUMBER AND PROPERTY DESCRIPTIONS

LEASE NUMBER	ACRES	TOWNSHIP	RANGE	SECT.	LOCATION
U-020305	1,439.4	13S	6E	13 14 23 24 25 26	Lot 7 (SW 1/4 SW 1/4) SE 1/4 SE 1/4 E 1/2 E 1/2 W 1/2 NW 1/4, SE 1/4 NW 1/4, S 1/2 All Lots 1 thru 4, S 1/2 N 1/2, S 1/2 E 1/2 E 1/2
U-017354	1,028.5	13S	6E	36	Lots 1 thru 4, N 1/2 S 1/2, N 1/2
		13S	7E	31	N 1/2 SW 1/4
		14S	6E	1	E 1/2 NE 1/4, NE 1/4 SE 1/4
		14S	7E	6	NW 1/4
U-044076	2,367.8	13S	6E	26 27 34 35	W 1/2 E 1/2, W 1/2 Lots 1 thru 4, E 1/2, E 1/2 W 1/2 (excluding Lawrence Reservoir) Lots 1 thru 8, S 1/2 Lots 1 thru 7, NE 1/4, E 1/2 NW 1/4, NE 1/4 SW 1/4, N 1/2 SE 1/4 United States Coal Leases. (cont.)
U-067498	501.0	14S	7E	6	Lots 2, 6, 7, SW 1/4 NE 1/4, W 1/2 SE 1/4, E 1/2 SW 1/4
				7	Lots 1, 2, 4, E 1/2 NW 1/4

The assignments pertaining to the lease from Carbon County, Utah, are as follows:

TABLE 114.100c
CARBON COUNTY COAL LEASES

LEASE NUMBER	ACRES	TOWNSHIP	RANGE	SECTION	LOCATION
CARBON COUNTY LEASE	ISSUED TO: North American Coal Corp.				
	DATE OF ISSUANCE: 5/01/69				
	361.2	13S	6E	24	W 1/2 NE 1/4, SE 1/4 NE 1/4
		13S	7E	19 30 31	SW 1/4 SW 1/4 W 1/2 W 1/2 NW 1/4 NW 1/4
PRIVATE COAL LEASES - Kanawha & Hocking Coal & Coke Co.	ISSUED TO: Valley Camp of Utah, Inc.				
	DATE OF ISSUANCE: 8/01/74				
	480	13S	7E	8	E 1/2 E 1/2
				9	W 1/2 SW 1/4
				16	NW 1/4 NE 1/4, NE 1/4 NW 1/4, W 1/2 NW 1/4, NW 1/4 SW 1/4
				17	NE 1/4 NE 1/4
	ISSUED TO: Valley Camp of Utah, Inc.				
DATE OF ISSUANCE: 8/01/78					
80	13S	7E	30 31	SE 1/4 SW 1/4 SW 1/4 NW 1/4	
ISSUED TO: Valley Camp of Utah, Inc.					
DATE OF ISSUANCE: 1/01/81					
80	13S	7E	31	S 1/2 SW 1/4	

The following is a general summary of the chains of title with respect to the coal leases held by Valley Camp of Utah, Inc., within the mine permit area.

U.S. LEASE U-020305

A coal prospecting permit was issued to Emmett K. Olson effective March 1, 1958, on the lands covered by this lease. On December 8, 1959, an extension of the permit was requested and the permit was extended for two years through March 1, 1962. Emmett K. Olson was issued a

Preference Right Coal Lease on March 7, 1962, effective March 1, 1962. An Assignment from Emmett K. Olson to Malcolm N. McKinnon dated April 24, 1962, was filed on May 1, 1962, effective August 1, 1962.

On October 29, 1975, a Sublease was entered into between Frank Armstrong and Zions First National Bank, executors of the estate of Malcolm N. McKinnon, deceased, and Armeda N. McKinnon with Routt County Development, Ltd. Pursuant to an Exchange Agreement dated September 15, 1975, Routt County Development, Ltd., entered into a Sublease of the portion of land within the mine permit area to Energy Fuels Corporation. This Sublease was then assigned to Valley Camp Of Utah, Inc. Subsequent to that Assignment the Sublease was assigned to Kanawha and Hocking Coal and Coke Company and a subsequent Sublease was entered into between Kanawha and Hocking Coal and Coke Company and Valley Camp of Utah, Inc. All of the documents necessary to accomplish these transfers are of record and have been approved by the Bureau of Land Management.

U.S. LEASE U-017354

This lease was originally issued to Independent Coal and Coke Company effective September 1, 1956. A modified Coal Lease was issued January 1, 1962, effective September 1, 1956. This modified Coal Lease added lands applied for under Serial No. U-067374 to the above-captioned lease. By Assignment of January 2, 1968, approved effective April 1, 1968, the lease was transferred by Independent Coal and Coke Company to the North American Coal Corporation. North American then assigned this lease to Kanawha and Hocking Coal and Coke Company on June 27, 1973. A Sublease of United States Coal Lease U-017354, U-067374 was entered into between Kanawha and Hocking Coal and Coke Company and Valley Camp of Utah, Inc. An Amendment to Sublease was entered into June 12, 1978, between Kanawha and Hocking Coal and Coke Company and Valley Camp of Utah, Inc. All of the documents necessary to accomplish these transfers are of record and have been approved by the Bureau of Land Management.

U.S. LEASE U-044076

A Coal Prospecting Permit was issued to Armeda N. McKinnon on November 1, 1960. This permit was extended for two years from November 2, 1962. On November 2, 1964, Armeda N. McKinnon filed an application for Preference Right Coal Lease and a lease was issued to her on September 1, 1965. On October 29, 1975, a Sublease was entered into between Frank Armstrong and Zions First National Bank, executors of the estate of Malcolm N. McKinnon, deceased, and Armeda N. McKinnon with Routt County Development, Ltd.

Pursuant to an Exchange Agreement dated September 15, 1975, Routt County Development, Ltd. entered into a Sublease of the portion of land within the mine plan area to Energy Fuels Corporation. This Sublease was then assigned to Valley Camp of Utah, Inc. Subsequent to that assignment the Sublease was assigned to Kanawha and Hocking Coal and Coke Company and a subsequent Sublease was entered into between Kanawha and Hocking Coal and Coke Company and Valley Camp of Utah, Inc. All of the documents necessary to accomplish these transfers are of record and have been approved by the Bureau of Land Management.

U.S. LEASE U-067498

This lease was originally issued to Independent Coal & Coke Company effective January 1, 1962. An Assignment to the North American Coal Corporation was made January 2, 1968, effective April 1, 1968. North American Coal Corporation assigned the lease to Kanawha and Hocking Coal and Coke Company on June 27, 1973. Kanawha and Hocking Coal and Coke Company is a sister corporation to Valley Camp of Utah, Inc. and the necessary leases will be entered into prior to the conduct of any mining operations on this lease. All of the documents necessary to accomplish these transfers are of record and have been approved by the Bureau of Land Management.

CARBON COUNTY LEASE

This lease was originally entered into on May 1, 1969, between Carbon County, Utah, and the North American Coal Corporation. On June 27, 1973, the lease was assigned from the North American Coal Corporation to Kanawha and Hocking Coal and Coke Company. A renewal of this lease in favor of Kanawha and Hocking Coal and Coke Company was issued May 1, 1974, for a period of 10 years. A Sublease was entered into January 1, 1978, between Kanawha and Hocking and Valley Camp of Utah, Inc.. A renewal of this lease in favor of Kanawha Coal and Coke Company was issued May 1, 1984, for five years and issued May 1, 1989, for five years from Carbon County. The right to enter federal coal leaseholds conveyed by the United States Government is conferred to the lessees by the Mineral Leasing Act of 1920 and the leases themselves. The right of entry for private and county leases is provided through the individual leases.

The right to construct, operate and maintain access roads, and the right to operate and maintain coal storage and Loadout facilities near the mouth of Green Canyon, together with all other uses in connection with ongoing operations of the lessee are conferred by the following:

1. A surface lease dated January 1, 1979, and entered into between and by Della L. Madsen and Robert G. and Hilda M. Hammond and Kanawha and Hocking Coal and Coke Company allows use, possession and occupancy of the subject lands for uses in connection with the performance of general business procedures by the lessee.

TABLE 114.100d
SURFACE LEASES

TOWNSHIP	RANGE	SECTION	LOCATION
13S	7E	19	E 1/2 SE 1/4, SW 1/4 SE 1/4, SE 1/4 SW 1/4
		20	W 1/2 SW 1/4
		29	NW 1/4 NW 1/4
		30	E 1/2, NE 1/4 NW 1/4

By a sublease effective January 1, 1981, Kanawha and Hocking Coal and Coke Company granted Valley Camp of Utah, Inc., the right to construct, operate and maintain access roads and conveyor systems over and across said lands.

2. A surface lease and right-of-way agreement dated August 14, 1975, and entered into and by Milton A. and Bessie G. Oman and Kanawha and Hocking Coal and Coke Company allows the construction, use and maintenance and other related activities of an access road, electric transmission line and communication lines with poles and appurtenances, all lying within portions of Sections 17, 18, 19, 20, and 30, T13S, R7E SLB&M. Said lease also provides to the lessee, a 40 acre tract lying within portions of Sections 19, and 30, T13S, R7E, SLB&M, for the purpose of conducting underground coal mining operations and related activities, including, without limitation, the construction of portals, buildings, and facilities useful to such operations. The rights under this instrument were subleased in their entirety to Valley Camp of Utah, Inc., by a sublease effective January 1, 1981.

3. A surface lease and easement agreement dated August 6, 1976, and entered into and by Helen, Nick and Koula Marakis, and Kanawha and Hocking Coal and Coke Company allows the exclusive use and possession of the surface of the subject lands for access to and egress from all other properties together with all activities related to access roads and conveyor systems required for coal transportation over, in, under, across, and along leased acreage.

**TABLE 114.100e
SURFACE LEASES AND EASEMENTS**

T13S, R7E SLB&M	
Sec. 8	E 1/2 E 1/2 less 2 acres, and less highway right-of-way.
Sec. 9	W 1/2 SW 1/4, less Carbon County Railway right-of-way and less Utah Power & Light Company right-of-way.
Sec. 16	W 1/2 less 0.18 acres for channel change easement.
Sec. 16	W 1/2 E 1/2
Sec. 17	E 1/2 NE 1/4, NE 1/4 SE 1/4 less 8.99 acres highway right-of-way, less LDS church property of 16.75 acres, less 1.52 acres channel change easement.
Sec. 17	That portion of S 1/2 SE 1/4 and SE 1/4 SW 1/4 lying North of Eccles Canyon Creek.
Sec. 20	NE 1/4 NE 1/4, less 1.29 acres to Milton E. and Calvin K. Jacob.
Sec. 21	That portion of N 1/2 NW 1/4 and N 1/2 NE 1/4 lying North of the centerline of Broads Canyon Creek.

By a letter of agreement dated September 13, 1976, Kanawha and Hocking Coal and Coke Company transferred to Valley Camp of Utah, Inc., the rights necessary to conduct its proposed operations within the mine plan area.

4. An easement effective January 1, 1981, between Kanawha and Hocking Coal and Coke Company, and Valley Camp, grants Valley Camp the right to construct, operate, and maintain access roads, conveyor systems and an office building with related facilities on, over and within the following described lands:

**TABLE 114.100f
EASEMENTS**

T13S, R7E, SLB&M	
Sec. 17	NW 1/4 NE 1/4, SW 1/4 NE 1/4, less and excluding the Kosec property containing approximately 2 acres. NW 1/4 SE 1/4
Sec. 19	NE 1/4 SW 1/4

5. An easement effective January 1, 1981, between Kanawha and Hocking Coal and Coke Company and Valley Camp of Utah, Inc., grants the right to construct, operate and maintain access roads, conveyor systems and railroad trackage with related facilities over and across portions of the following described lands:

**TABLE 114.100g
EASEMENT**

T13S, R7E, SLB&M	
Sec. 17	S 1/2 SE 1/4

115. STATUS OF UNSUITABILITY CLAIMS.

115.100. AREAS UNSUITABLE FOR MINING

The Mine Permit Area is not within an area designated unsuitable for underground coal mining and reclamation activities nor is it under study for designation in an administrative proceeding.

115.200. EXEMPTION

N/A

115.300. OPERATIONS WITHIN 300 FT. OF DWELLING OR 100 FT. OF ROAD

No mining will be conducted within 100 feet of the right-of-way of any public road or within 300 feet of an occupied dwelling, public building, school, church, community, institutional building or public park, or within 100 feet of a cemetery. Reclamation at the Valcam Loadout Facility paralleling State Road 96 and where the Belina Haul Road is adjacent to, and intersects State Road 264, is within the 100 feet stipulation. There are no cultural or historical resources eligible for or listed on the National Register of Historic Places.

There are seven archeological or historic sites within or adjacent to the Mine Permit Area.

Valley Camp of Utah, Inc. does not anticipate any significant disturbance of these sites. If such disturbance is necessary documentation will be made and monitoring procedures will be implemented.

The western portion of the Mine Permit Area is situated within the Manti-LaSal National Forest, U.S. Forest Service, U.S. Department of Agriculture.

116. PERMIT TERM.

116.100. STARTING AND TERMINATION DATES

Mining activities have occurred primarily in the southern portion of the mine permit area. The mine operation has or will operate in both seams in the Mine Permit Area. The following tables show the starting and termination dates of significant events in the history of Valley Camp of Utah operations.

**TABLE 116.100a
BEGINNING OF OPERATIONS**

ACTIVITIES	BELINA NO. 1	BELINA NO. 2
First Coal Produced	1976	1981
Horizontal Extent of Mine.	540 acres	338 acres
Vertical Extent of Mine.	0' to 1000'	0' to 1050'

**TABLE 116.100b
LIFE OF MINES**

MINING EXTENT	BELINA NO. 1	BELINA NO. 2
First Coal Produced	Permitted (stand by)	Permitted
Termination of Mining	20-25 Years	20-25 Years

MINING EXTENT	BELINA NO. 1	BELINA NO. 2
Horizontal Extent of Workings	2494 Acres	2600 Acres
Vertical Extent of Workings	0' to 1127'	0' to 1200'

The Disturbed Area Boundary includes the operational disturbance as well as potential areas of disturbance during reclamation as shown on the 100 scale maps (Map No. R645-301-231.300, Sheets 1 through 4). The General Office Area has been temporarily excluded from this acreage until the legal boundary of the adjacent lands can be depicted. The areas were determined by planimetry of the DAB areas on the aforementioned 100 scale maps.

VALCAM LOADOUT FACILITY	=	33.2
GENERAL OFFICE AREA	=	N/A
LOWER SECTION BELINA HAUL ROAD	=	22.7
UPPER SECTION BELINA HAUL ROAD	=	23.4
BELINA MINE SITE	=	<u>60.9</u>
TOTAL		140.2

117. INSURANCE, PROOF OF PUBLICATION AND FACILITIES OR STRUCTURES USED IN COMMON

117.100. CERTIFICATE OF INSURANCE

Valley Camp of Utah, Inc., is insured for liability through policies (General Liability No. GL 99 48 43, Auto Liability No. BA996190, Workmens Compensation & Employers Liability No. WCK985101) issued by The Home Indemnity Company, et. al. The Utah Division of Oil, Gas & Mining is the certificate holder of record.

117.200. NEWSPAPER ADVERTISEMENT

Proof of publication was submitted as shown in the 1993 Appendix 117.200.

117.300. SHARED FACILITIES

The railroad tracks overlap the Mine Permit Area of Valley Camp of Utah, Inc. and Utah Fuel Co.

118. FILING FEE.

N/A

120. PERMIT APPLICATION FORMAT AND CONTENTS.

N/A

123. NOTARIZED SIGNATURE VERIFICATION.

Verification of Application by Responsible Official of Applicant is included at the very beginning of Section 110.

130. REPORTING OF TECHNICAL DATA

In addition to Valley Camp of Utah, Inc., personnel, the following assisted or were consulted in the preparation of the application for the MRP:

1. United States Department of the Interior
Office of Surface Mining, Reclamation and Enforcement
Western Field Operations
Brooks Towers, 1020 15th Street
Denver, Colorado 80202 (303) 837-3773
2. State of Utah, Department of Natural Resources
Division of Oil, Gas, and Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203 (801) 538-5340
3. United States Geological Survey, Utah Region
Salt Lake City, Utah 84115 (801) 524-4585
4. Department of the Interior, Bureau of Land Management
District and Regional Office
Salt Lake City, Utah 84116 (801) 524-5348
5. United States Department of Agriculture
Soil Conservation Service
Salt Lake City, Utah 84116 (801) 524-5068
6. State of Utah, Department of Natural Resources
Division of Wildlife Resources
Salt Lake City, Utah 84116 (801) 533-9333
7. Golder Associates, Inc., Chief Consultants
4671 Bayard Park Drive
Evansville, Indiana 47715 (812) 473-2097
8. Vaughn Hansen Associates, Consultant-Hydrology, Geology, Ground Water,
Surface Water, and Climatology.
Waterbury Plaza, Suite A, 5620 South 1475 East
Salt Lake City, Utah 84121 (801) 272-5263
DBA Hansen Allen & LUCE Inc.
6771 South 900 East
PO Box 21146
Salt Lake City, Utah, 84121-0146 (801) 566-5599

9. Dr. Richard Hauck, Consultant-Archeological Resource Inventory
588 West 800 South
Bountiful, Utah 84010 (801) 292-7061
10. Cedar Creek Associates, Inc.
916 Willshire Ave.
P.O. Box 9957
Fort Collins, Colorado 80525 (303) 493-4394
11. Dr. Joseph Murdock, Brigham Young University, Consultant-Vegetation
and Soils
110 B-49
Provo, Utah 84602 (801) 378-2583
12. Dr. Clyde Pritchett, Brigham Young University, Consultant-Wildlife
340 MLBM
Provo, Utah, 84602 (801) 378-2419
13. Dr. Stanley Welsh, Consultant-Endangered Plant Species
129 North 1000 East
Orem, Utah 84057 (801) 378-2289
14. Dr. Clayton White, Brigham Young University, Consultant-Raptors and
Ornithology, 161 WIDB
Provo, Utah 84602 (801) 378-2263
15. Dr. Robert Winget, Brigham Young University, Consultant-Aquatic Ecology,
115 Page Building
Provo, Utah 84602 (801) 378-4372
16. Dr. Patrick D. Collins, Mt. Nebo Scientific Research & Consulting
P.O. Box 337
Springville, Utah 84663 (801) 489-6937

132. TECHNICAL ANALYSES

All technical analyses have been completed under the direction of qualified registered professionals.

140. MAPS & PLANS

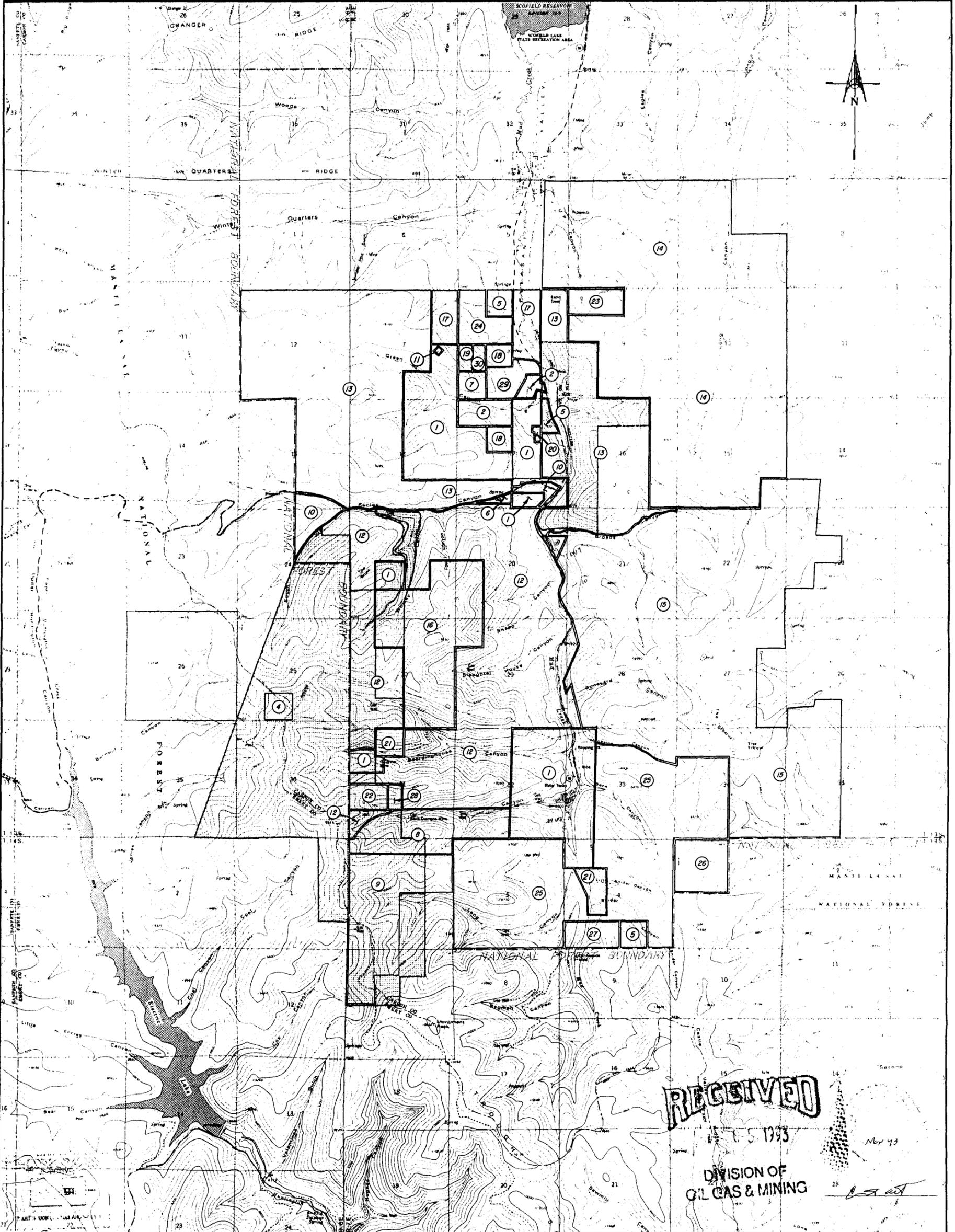
Are submitted as required.

150. COMPLETENESS

The combined Operational Mining and Reclamation Plans are submitted as complete.

VALLEY CAMP OF UTAH, INC., SCOFIELD ROUTE, HELPER, UTAH 84526

VALLEY CAMP ACT/007/001 REVISION			INCORPORATED INTO MRP BY DOGM			VALLEY CAMP ACT/007/001 REVISION			INCORPORATED INTO MRP BY DOGM			VALLEY CAMP ACT/007/001 REVISION			INCORPORATED INTO MRP BY DOGM		
NO.	DATE	DESCRIPTION	REF. NO.	DATE	INITIALS	NO.	DATE	DESCRIPTION	REF. NO.	DATE	INITIALS	NO.	DATE	DESCRIPTION	REF. NO.	DATE	INITIALS



LEGEND:

— MINE PERMIT BOUNDARY	8 RESCU-MED INC.	18 BRENT BAWDEN	28 CLEGG
— NATIONAL FOREST BOUNDARY	9 L & L AGRI BUSINESS	19 STILSON & MILLER	29 CARBON CO. SCH. DIST.
① KANAWHA & HOCKING	10 COASTAL STATES	20 LOUIS & ANNA KOSEC	30 JACK L. JENSEN
② ALPINE SCHOOL DISTRICT	11 MTN. STATES TELEPHONE	21 JACK OTANI	
③	12 MILTON OMAN	22 LARRY & IVA BAER	
④ UTAH NATURAL GAS CO.	13 KALATZES & MARAKIS	23 ANTHONY THEIS	
⑤ L.D.S. CHURCH	14 GEORGE TELONIS	24 MARY L. SEAMONS	
⑥ HELLENIC CHURCH	15 MARK & JAMES JACOB	25 MARGIE JACOB	
⑦ LUTHERAN HIGH SCHOOL	16 DELLA MADSEN	26 MARGIE & CALVIN JACOB	
	17 R & E RADAKOVICH	27 PAUL & MARGIE JACOB	

VALLEY CAMP OF UTAH, INC.
 SCOFIELD ROUTE, HELPER, UTAH 84526

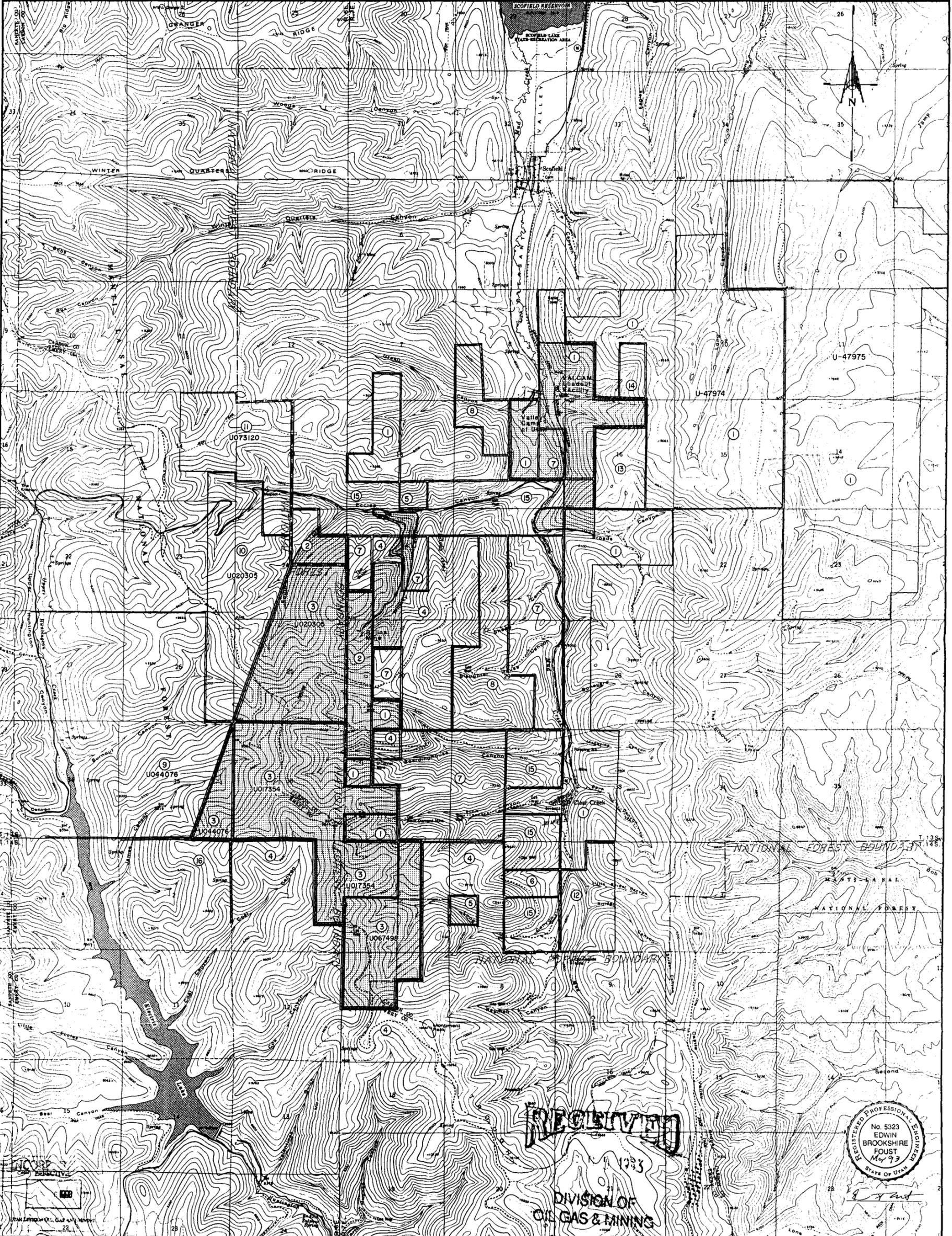
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 AUG 5 1993
 DIVISION OF OIL GAS & MINING

TITLE:
 R645-30I-112.500.
 SURFACE OWNERSHIP

Drawn by: Ed Sanderson Date: Aug 21, 89
 Approval: Date:
 Drawing No: R645-30I-112.500. Rev. 1/3/93

SAND DESIGN & GRAPHICS SCALE: 1"=2000' SHEET 1 of 1

VALLEY CAMP ACT/007/001 REVISION			INCORPORATED INTO MRP BY DOGM			VALLEY CAMP ACT/007/001 REVISION			INCORPORATED INTO MRP BY DOGM			VALLEY CAMP ACT/007/001 REVISION			INCORPORATED INTO MRP BY DOGM		
NO.	DATE	DESCRIPTION	REF. NO.	DATE	INITIALS	NO.	DATE	DESCRIPTION	REF. NO.	DATE	INITIALS	NO.	DATE	DESCRIPTION	REF. NO.	DATE	INITIALS



LEGEND:

— Mine Permit Boundary	⑥ STATE OPEN	⑭ GEORGE TELONIS
- - - National Forest Boundary	⑦ STAGSTEAD INC.	⑮ KAISER STEEL CORP.
① KANAWHA & HOCKING	⑧ NOAL TANNER	⑯ UTAH POWER & LIGHT
② KANAWHA & HOCKING, COUNTY	⑩ COASTAL STATES ENERGY CO.	
③ KANAWHA & HOCKING, FEDERAL	⑪	
④ FEDERAL OPEN	⑫ TOE INVESTMENT CO.	
⑤ COUNTY OPEN	⑬ WESTERN RESERVE COAL CO. INC.	

VALLEY CAMP OF UTAH, INC.
 SCOFIELD ROUTE, HELPER, UTAH 84526

RECEIVED
 1993
 DIVISION OF OIL, GAS & MINING

REGISTERED PROFESSIONAL ENGINEER
 No. 5323
 EDWIN BROOKSHIRE FOUST
 May 93
 STATE OF UTAH

TITLE: R645-30I-112.600. COAL OWNERSHIP	Drawn by: Ed Sanderson	Date: Aug 15, 99
	Approval:	Date:
	Drawing No. R645-30I-112.600.	Rev. 3/93

SAND DESIGN & GRAPHICS **SCALE: 1" = 2000'** **SHEET 1 of 1**

TABLE OF CONTENTS
SOILS. R645-301-200

<u>SECTION</u>	<u>PAGE NO.</u>
200. SOILS	Page 200-1 of 25
210. INTRODUCTION	Page 200-1 of 25
220. ENVIRONMENTAL DESCRIPTION	Page 200-1 of 25
230. OPERATION PLAN	Page 200-20 of 25
240. RECLAMATION PLAN	Page 200-23 of 25
250. PERFORMANCE STANDARDS	Page 200-23 of 25
REFERENCES	Page 200-24 of 25

LIST OF TABLES

<u>TABLE NO.</u>	<u>PAGE NO.</u>
TABLE 222a. SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 3 MAPPING UNIT: A,a	Page 200-6 of 25
TABLE 222b. SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 11 MAPPING UNIT: B,b,& f	Page 200-7 of 25
TABLE 222c. SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 12 MAPPING UNIT: C	Page 200-8 of 25
TABLE 222d. SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 10 MAPPING UNIT: g	Page 200-9 of 25
TABLE 222e. SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 7 MAPPING UNIT: h	Page 200-10 of 25
TABLE 222f. SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 8 MAPPING UNIT: i	Page 200-11 of 25
TABLE 222g. SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 6 MAPPING UNIT: k	Page 200-12 of 25

LIST OF TABLES - (Continued)

<u>TABLE NO.</u>	<u>PAGE NO.</u>
TABLE 222h. SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 5 MAPPING UNIT: l	Page 200-13 of 25
TABLE 222i. SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 4 MAPPING UNIT: m	Page 200-14 of 25
TABLE 222j. SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 2 MAPPING UNIT: p	Page 200-15 of 25
TABLE 222k. SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 1 MAPPING UNIT: q	Page 200-16 of 25
TABLE 222l. SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 15 MAPPING UNIT: r	Page 200-17 of 25
TABLE 222m. SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 17 MAPPING UNIT: t	Page 200-18 of 25
TABLE 222n. SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 18 MAPPING UNIT: u	Page 200-19 of 25
TABLE 222o. SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 7 MAPPING UNIT: v	Page 200-20 of 25

LIST OF MAPS

<u>MAP NO.</u>	<u>REFERENCE PAGE</u>
223.100. Soils	Page 200-3 of 25
231.300. Suitability of Topsoil Substitutes VSM - Sheet 1	Page 200-22 of 25
231.300. Suitability of Topsoil Substitutes VSM - Sheet 2	Page 200-22 of 25
231.300. Suitability of Topsoil Substitutes VSM - Sheet 3	Page 200-22 of 25
231.300. Suitability of Topsoil Substitutes VSM - Sheet 4	Page 200-22 of 25

R645-301-200. SOILS.

210. INTRODUCTION.

The Reclamation Plan (See Reclamation Plan Volume) is divided into four areas: the Valcam Loadout Facility; General Office Area; Belina Haul Road; and the Belina Mine Site.

220. ENVIRONMENTAL DESCRIPTION.

The Valley Camp of Utah, Inc. Mine Permit Area consists of about six and one-half square miles of land situated in the Wasatch Plateau of Utah astride the Carbon-Emery county line. The property straddles the divide between the headwaters of Huntington Creek on the west and Pleasant Valley on the east. Elevations vary from a low of about 8000 feet in the Pleasant Valley drainage to a high of near 9800 feet on the divide crests. Canyon slopes are steep with rounded summits, and are vegetated.

A presubsidence survey within or adjacent to the Valley Camp of Utah, Inc. Mine Permit Area conducted for Valley Camp Utah, Inc. by Endangered Plant Species through Vaughn Hansen Associates, demonstrates that areas for agricultural or silvicultural production of food and fiber and grazing lands are of such low production that they can be classified as non-renewable resource lands. This survey was conducted by subconsultants under the direction of Vaughn Hansen Associates. This information was reorganized for insertion into the permit by both Valley Camp personnel and Mr. Lynn Kunzler (an employee of the Division) to meet the requirements for the "Renewable Resource Survey". This Section 200 contains the reorganized survey data.

221. PRIME FARMLAND INVESTIGATION.

The Mine Permit Area soils do not meet the requirements as: "The growing season is too short and without irrigation water the moisture requirement for prime farmland cannot be met." As per May 28, 1982 letter by Mr. George D. McMillan, State Conservationist, USDA Soil Conservation Service, P.O. Box 11350, Salt Lake City, Ut. 84147. See 1993 Appendix 221 (PFI).

222. THROUGH 223. SOIL SURVEY. (Resource Information)

NOTE: The terminology "Proposed Conveyor Corridor" was previously withdrawn from the MRP text along with the nomenclature and proposed conveyor route from the Soils and Vegetation maps. The site locations of the Vegetation and Soil Study in Eccles & Whisky Canyons were however, retained on the said maps, and results of that study are found in this section and the Biology section of the MRP.

Vegetation and Soils Study

This study was and is considered an adequate soil survey and meets the standards of the National Cooperative Soil Survey as of 1980.. Mr. Stanley Welsh, Leah Juarros, Joseph R. Murdock, and Elizabeth Neese of Endangered Plant Studies, Inc., in 1980 did the Vegetation and Soils Study for Vaughn Hansen Associates, Inc., Waterbury Plaza-Suite A, 5620 South 1475 East, SLC, Utah dba Hansen Allen & LUCE, Inc., SLC, Utah, for Valley Camp of Utah, Inc.. The

purpose of the studies were to gather data for the "Report of Vegetation, Threatened and Endangered Plant Species, Soils, and Reclamation Plans for Valley Camp of Utah, Inc., and Lease Area, Carbon--Emery counties, Utah."

These investigations were designed to provide Surface Mining regulations (783.19, 783.21, 783.13, 784.21), U.S. Forest Service requirements, and requirements of the Utah Division of Oil, Gas & Mining. Included in 300 Biology section is a description of the plant communities, a list of plant species by vegetative type, estimates based on random sampling of cover and productivity for areas that could be disturbed and for comparable areas which will not be disturbed, and maps showing vegetative and soil types and sample locations. Soils are described and reclamation potential is also discussed.

Valley Camp of Utah, Inc. lease area soils are developed in vegetation types and topographic features similar in all major respects to the adjacent Skyline lease area soils. Corresponding soils data presented within the text are for the Valley Camp lease area and are based in part on previous extensive studies of the adjacent Skyline lease area. Data for those studies were collected as follows:

Soils Analysis (methods)--At each vegetation site a soil pit was excavated to the parent material, or to a depth of 60 inches, whichever occurred first. The exposed soil profile provided information for classification of the soils into taxonomic units. Samples were taken from each of the horizons exposed in each pit and were analyzed for major chemical properties.

Soils were classified to family unit according to the system utilized for classification of soils by the Soil Conservation Service (Johnson, 1975). Use of this method has allowed for correlation of these soils to series level with the new Carbon/Emery County soils mapping effort recently completed by the Soil Conservation Service and Forest Service.

Chemical analyses for micro-nutrients were made by testing a soil extract with VVK solution and were measured by use of an atomic absorption analyzer. Ammonium acetate was used to extract sodium, magnesium, and calcium for atomic absorption analysis. The Kjeldahl method was used for determination of percent organic matter. All analyses were conducted in the Agronomy Laboratory at Brigham Young University.

Soil texture was determined by using a Bouyoucus hydrometer method, with sodium hexametaphosphate dispersing agent. Soil reaction was determined on a 1:1 soil/water mixture which was tested in a Corning Ph meter Model 10. Salinity was analyzed by use of a Wheatstone conductivity cell on an extract of each soil sample. Carbonate content was estimated from observations of effervescence following application of a 10 percent solution of hydrochloric acid. The scale of effervescence follows the rating system suggested by the Soil Conservation Service (USDA Soil Survey Manual, 1937). Soil color was obtained by comparing a moist and a dry sample with the standard Munsell soil color charts. Observations of soil structural units also follow the Soil Conservation Service suggested designation as outlined in the Soil Survey Manual.

Local climatic data suggest cryic and frigid temperature regimes. The cryic regime is typically conifer-aspen related, and includes some high meadows. These areas are too cold for cultivation of crop plants by ordinary means. Frigid designation is given to soils typical of sagebrush types;

some crops can be grown on these soils. Most of the soils are in the ustic (moisture arriving in summer) regimes.

All soils have textures ranging from sandy loams to clay loams, and are considered neither unusual for the area in general or for the vegetation types these soils support. A comparison of spruce-fir and aspen soils, which as broad categories make up more than 80 percent of the lease area soils, shows that the Ph and salinity measurements are probably normal for this climatic regime with the Ph range from mildly acidic to neutral. There is a slight difference in soil reaction between spruce-fir (pH 5.0) and aspen (pH 6.0) soils. It is characteristic that the evergreen conifer types are more acidic than the deciduous forest of aspen.

Even the most saline soil measured in the lease area, with an EC x 10 measurement of 1.88, is considered extremely low when compared to agricultural soils. A slight difference between soils is noted when depths are compared. The solum of aspen extends to an average depth of 20 inches at nine locations and to 18 inches at seven locations of the spruce-fir type. This corresponds to the average depths of measurements in aspen of 19.9 inches and of 18.1 inches in spruce-fir soils. It is also apparent that soils in aspen communities are more fertile in the commonly applied fertilizer elements nitrogen, phosphorus, and potassium, and also in most micro-nutrients. The levels of iron, magnesium, and manganese are considered to be adequate for growth of native vegetation, even though somewhat below amounts reported for average soils in the Western United States (Shacklette, et al. 1971). Moderate amounts of zinc, calcium, and potassium indicate that adequate quantities of these minerals are present, except in sagebrush soils.

High amounts of calcium, especially in the B-horizon of spruce-fir soils are not considered a problem in immobilization of phosphorus due to the acid pH of these soils. Concentrations of calcium in sagebrush and aspen soils could become a problem in phosphorus relations if soils are altered to become more basic. Nitrate nitrogen is low in quantity, as was expected for these soil types. Average amounts of nitrate nitrogen are inadequate in all soils of the region, and in all horizons. All areas would respond to addition of nitrogen.

In summary, the most important fertilizer to be applied in reclamation is nitrogen. The addition of nitrogen should be timed with suitable moisture content in the soils, which usually occurs in the fall and spring.

The Soils Map 223.100 of the area indicates soils mapping units of the lease area. These units are designated by upper case letter A through E and are mapped at an Order Three intensity. Adjacent soils are designated by lower case letters a through v and are mapped at an Order Two intensity. A dashed line is used to enclose these mapping units. Taxonomic classification of the soil sample is summarized as follows:

MAP 223.100. Soils

TAXONOMIC CLASSIFICATION

MAP UNIT	TAXONOMIC CLASSIFICATION	SAMPLE SITE
A	Loamy-skeletal, mixed Mollic Cryoboralfs (Apr 1990) Fine-loamy, mixed Typic Cryoboralfs.	3
B	Fine loamy, mixed Argic Pachic Cryoborolls (Apr 1990) Loamy-sketetal, mixed Typic Argiborolls.	11
C	Loamy-skeletal, mixed Argic Cryoborolls (Apr 1990) Fine-loamy, mixed Argic Cryoborolls.	12
D	A complex of units B and C (Apr 1990) B&C	
E	A complex of units A, B, and C (Apr 1990) A,B,C	
a	Loamy-skeletal, mixed Mollic Cryoboralfs (Apr 1990) Same as A	
b	Fine loamy, mixed Argic Pachic Cryoborolls (Apr 1990) Same as B	11
f	Similar to B with 30% of the soils having a slope greater than 60% and as much as 50% rock fragments less than 12 inches. (Apr 1990) Similar to B with 50% rock Fragments.	11
g	Coarse loamy, mixed Pachic Cryoborolls (Apr 1990) Same as B.	10
h	Rock outcrops	
i	Loamy-skeletal, mixed Typic Cryoborolls (Apr 1990) Same.	8
k	Course-loamy, mixed Cumulic Cryoborolls (Apr 1990) Fine-loamy, mixed Calcic Pacic Cryoborolls.	6
l	Loamy-skeletal, mixed Typic Cryoborolls (Apr 1990) Same as i.	5
m	Loamy-skeletal, mixed Typic Cryoboralfs (Apr 1990) Same as A.	4
p	Coarse-loamy, mixed Mollic Cryofluent (Apr 1990) Fine-loamy, mixed Cumulic Cryoborolls.	2

MAP UNIT	TAXONOMIC CLASSIFICATION	SAMPLE SITE
q	Coarse-loamy, mixed Cumulic Cryoborolls (Apr 1990) Fine-loamy, mixed Cumulic Cryoborolls.	1
r	Coarse-loamy, mixed frigid Typic Argiborolls (Apr 1990) Same as B.	15
s	Complex of 10% r, 45% t, and 35% u (Apr 1990) r, t, u.	-
t	Coarse-loamy, mixed frigid Mollic with 15% u and 5% q (Apr 1990) Same as A.	17
u	Coarse-loamy, mixed frigid Typic Haploborolls with 5% r (Apr 1990) Fine- loamy, mixed Cumulic Haploborolls.	18
v	Loamy-Skeletal, mixed Lithic Cryocrepts (Apr 1990) Same as A.	7

MAP UNITS A AND a

These units consist of deep well drained soils that have formed in colluvium and residuum. They are on steep north-facing slopes ranging from 35 to 60 percent. Included is 5 percent rock outcrop and 5 percent similar soils.

The surface texture is loam or very fine sandy loam. Thickness of the mollic epipedon ranges from 2 to 4 inches. The A2 horizon ranges from striping of ped faces to a leached horizon 4 inches thick. Depth of the argillic horizon is 12 to 15 inches. Depth of the C horizon is 18 to 22 inches. Percent of rock fragment by volume in the upper 20 inches ranges from 5 to 15 percent. The lower portion ranges from 35 to 55 percent. Erosion hazard is slight, but severe if disturbed due to surface textures and steep slopes. The potential rating for borrow soil is poor due to thin surface layers, rock fragments content, and steep slopes.

TABLE 222a.
SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 3
MAPPING UNIT: A,a

VEGETATIVE TYPE: SPRUCE/FIR
LOCATION: PERMIT AREA

HORIZ	DEPTH	COLOR		TEXTURE			CLASS	STRUCTURE	PERCENT	
		DRY	MOIST	SAND	SILT	CLAY			ROCK FGTS.	ORG MAT.
0*	2-0	-	-	-	-	-	-	-	-	-
A1	0-3	10YR 5/2	10YR 3/2	33	55	12	s1	lmkpl 2mgr	5gr	6.99
A2	3-7	10YR 7/2	7.5YR 5/4	48	37	15	1	2m sbk	5gr	0.44
B21	7-14	10YR 7/2	10YR 5/4	48	39	13	1	2m&f sbk	5gr	t
B22**	14-20	10YR 7/3	10YR 6/4	49	39	12	1	2m sbk	10gr,5k	t
C	20-52+	10YR 8/4	10YR 6/6	43	39	16	1	m	5s	t
HORIZ	Ph	EFFERVESCENCE	ECX10 00	SOLUBILITY ppm			SAR	PERCENT		
				Ca	Mg	Na		MOIST	SATUR.	
0*	-	-	-	-	-	-	-	-	-	
A1	6.3	eo	0.67	86.9	10.4	10.7	0.14	61		
A2	5.6	eo	0.31	44.8	4.8	9.9	0.19	26		
B21	5.6	eo	0.29	41.8	4.6	11.8	0.23	24		
B22**	5.4	eo	0.26	35.0	5.8	15.0	0.31	21		
C	5.6	eo	0.31	27.8	4.2	20.8	0.48	21		

Taxonomic Classification: Loamy-skeletal, mixed, mollic cryoboralls.

* Decomposing spruce/fir needles and twigs

** 20% 10YR 7/2 and 15% 10YR 6/8 weathering stains

MAP UNITS B, b, AND f

These units consist of deep well drained soils that have formed in residuum and colluvium. They are on steep mountain slopes and benches with slopes of 35 to 50 percent. Included is 4 percent moderately deep similar soils.

Surface texture ranges from loam to a fine sandy loam. The argillic horizon texture ranges from a loam to a clay loam. The texture of the C horizon is variable due to location of weathered sandstone fragments ranging from clay to loam to a sandy clay. There is 5 to 10 percent by volume of rock fragments throughout the profiles. Thickness of surface horizons ranges from 8 to 14 inches. Depth of the argillic horizon ranges from 12 to 18 inches. Depth of the C horizon ranges from 26 to 30 inches, and depth to bedrock ranges from 48 to over 60 inches. Erosion hazard is moderate. Soil creep is evident. If disturbed, erosion hazard is severe due to steep slopes and a past history of down-slope movement. Potential rating for borrow topsoil is poor due to steep slopes. Otherwise, this is a good source. Predominant vegetation is aspen.

TABLE 222b.
SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 11
MAPPING UNIT: B,b,& f

VEGETATIVE TYPE: ASPEN
LOCATION: PERMIT AREA

HORIZ	DEPTH	COLOR		TEXTURE			CLASS	STRUCTURE	PERCENT	
		DRY	MOIST	SAND	SILT	CLAY			ROCK FGTS.	ORG. MAT.
A11	0-3	-	7.5YR 3/2	50	28	22	sc1	2mgr	-	6.98
A12	3-9	-	7.5YR 3/2	53	27	20	sc1	1f sbk	-	4.78
B1	9-14	-	7.5YR 3/2	53	25	22	sc1	2c sbk	-	1.81
B2+	14-24	-	10YR 3/3	51	28	21	sc1	3mpr	2gr	1.44
B3	24-48	-	10YR 4/3	50	28	22	sc1	2c sbk	7gr	0.77
C	28-50	-	10YR 5/4	41	24	25	l	m	5gr 10k	0.41

HORIZ	pH	EFFERVESCENCE	EC X 1000	SOLUBILITY PPM			SAR	PERCENT MOIST SATUR.
				Ca	Mg	Na		
A11	6.9	eo	0.20	63.5	10.9	9.6	0.15	49
A12	7.0	eo	0.43	42.6	5.6	11.8	0.23	36
B1	7.1	eo	0.38	34.6	4.0	22.1	0.47	28
B2+	7.0	eo	0.33	27.8	3.0	17.8	0.43	25
B3	6.9	eo	0.32	27.5	2.7	19.8	0.48	25
C	6.7	eo	0.37	35.5	4.0	23.7	0.50	27
R*	-	-	-	-	-	-	-	-

Taxonomic Classification: Fine loamy, mixed Argic Pachic Cryoborolls
* Sandstone

MAP UNIT C

This unit consists of moderately deep, well drained soils that have formed in residuum and colluvium. They are on steep mountain slopes of 35 to 50 percent. Included in this unit are 5 percent similar shallow soils, 5 percent rock outcrop, and 3 percent similar deep soils.

Surface texture is silt loam to clay loam. Thickness of the surface ranges from 7 to 11 inches. Depth to the argillic ranges from 15 to 20 inches. Depth to sandstone bedrock ranges from 30 to 40 inches. There is 0 to 5 percent rock fragment by volume in the upper 30 inches. The C horizon ranges from 35 to 55 percent rock fragment by volume. Erosion hazard is moderate at present and severe if disturbed due to steep slopes. Potential rating for borrow topsoil is poor due to steep slopes. The dark surface soil averages 20 inches in depth. Present vegetation is predominantly a grass and forb mixture with a few snowberry and elderberry bushes.

TABLE 222c.
SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 12
MAPPING UNIT: C

VEGETATIVE TYPE: GRASS/FORB/ELDERBERRY
LOCATION: PERMIT AREA

HORIZ	DEPTH	COLOR		TEXTURE			CLASS	STRUCTURE	PERCENT	
		DRY	MOIST	SAND	SILT	CLAY			ROCK FGTS.	ORG. MAT.
A11	0-4	10YR 3/2	10YR 3/2	22	45	33	c1	2m gr	2gr	5.31
A12	4-8	-	7.5YR 3/2	32	38	30	c1	1m sbk 2fgr	2gr	4.19
B21	8-19	-	10YR 4/2	34	35	31	c1	2c sbk	4gr	2.52
B22+	19-29	-	10YR 4/2	34	36	30	c1	2m pr	5gr	2.23
C	29-33	-	10YR 5/5	39	34	27	1	m	10gr 15k 20s	0.83
R*	33+	-	-	-	-	-	-	-	-	-

HORIZ	pH	EFFERVESCENCE	EC X 1000	SOLUBILITY PPM			SAR	PERCENT
				Ca	Mg	Na		MOIST. SATUR.
A11	6.7	eo	1.28	26.1	24.8	15.7	0.26	44
A12	6.5	eo	0.44	47.7	5.4	14.7	0.27	39
B21	6.8	eo	0.33	34.1	2.9	16.8	0.37	35
B22+	6.8	eo	0.32	31.5	3.2	18.4	0.42	34
C	6.7	eo	0.35	36.8	4.0	17.6	0.37	29
R*	-	-	-	-	-	-	-	-

Taxonomic Classification: Loamy-skeletal, mixed Argic Cryoborolls
* Sandstone

MAP UNIT g

This unit consists of moderately deep, well drained soils that have formed in colluvium. They are on steep mountain sides with slopes of 35 to 50 percent. Included in this unit is 6 percent of Map Unit k, Cumulic Cryoborolls, and 2 percent rock outcrop.

Surface texture ranges from a loam to a fine sandy loam. C horizon texture ranges from a loamy very fine sand to a fine sand. Percent rock fragment by volume ranges from 10 to 15 at the surface and 35 to 70 in the C horizon. Depth to sandstone bedrock ranges from 25 to 38 inches. Erosion hazard is moderate at present and severe if disturbed due to surface texture and steepness of slopes. The potential rating for borrow topsoil is poor due to slope steepness. Present predominant vegetation is aspen.

TABLE 222d.
SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 10
MAPPING UNIT: g

VEGETATIVE TYPE: ASPEN
LOCATION: PERMIT AREA

HORIZ	DEPTH	COLOR		TEXTURE			CLASS	STRUCTURE	PERCENT	
		DRY	MOIST	SAND	SILT	CLAY			ROCK FRGTS.	ORG. MAT.
A1	0-6	10YR 4/2	10YR 3/2	63	21	16	s1	3f gr	10gr	7.83
AC	6-20	10YR 5/2	10YR 3/2	64	22	14	sl	2f sbk 2mgr	10gr 5K	2.81
C	20-31	10YR 6/3	10YR 5/4	64	22	14	s1	1m sbk	20gr 30K 20s	0.58
R*	31+	-	-	-	-	-	-	-	-	-

HORIZ	pH	EFFERVESCE NCE	EC X 1000	SOLUBILITY ppm			SAR	PERCENT MOIST. SATUR.
				Ca	Mg	Na		
A1	6.6	eo	0.67	97.1	13.8	6.9	0.09	41
AC	6.7	eo	0.47	65.6	6.6	9.4	0.15	30
C	6.4	eo	0.35	49.1	4.5	10.7	0.20	23
R*	-	-	-	-	-	-	-	-

Taxonomic Classification: Coarse loamy, mixed Pachic Cryoborolls
* Sandstone

MAP UNIT H

This unit consists of rock outcrops with less than 5 percent soil associated within the area. The soils dispersed among the rocky areas are similar to those described in Table 222e. Because of the similarities no chart of soils features has been prepared for this mapping unit.

TABLE 222e.
SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 7
MAPPING UNIT: h

VEGETATIVE TYPE: SAGEBRUSH
LOCATION: PERMIT AREA

HORIZ	DEPTH	COLOR		TEXTURE			CLASS	STRUCTURE	PERCENT	
		DRY	MOIST	SAND	SILT	CLAY			ROCK FGTS.	ORG. MAT.
A1	0-5	10YR 4/2	7.5YR 3/2	51	31	18	l	2f gr	15gr 15k 10s	5.25
B2	5-16	10YR 5/3	10YR 4/3	50	33	17	vfsl	2f sbk	5gr 30k 15s	1.32
R*	-	-	-	-	-	-	-	-	-	-

Horiz	Ph	Effervescence	EC x 1000	Solubility ppm			SAR	Percent Moist. Satur.
				Ca	Mg	Na		
A1	7.1	eo	0.83	133.4	16.8	12.5	0.14	41
B2	7.1	eo	0.54	84.5	11.7	12.0	0.16	31

Taxonomic Classification: Loamy-skeletal, mixed lithic Cryocrepts
* Sandstone

MAP UNIT i

This unit consists of deep, well drained soils that have formed in residuum. They are on moderately steep mountain slopes of 15 to 35 percent. Included in this unit is 8 percent of similar soil with 4 to 8 inches of mollic epipedon and 3 percent of a similar soil with 16 to 26 inches of mollic epipedon.

Textures in the surface are loam to very fine sandy loam.

Textures in the C horizon are very fine sandy loam to loamy fine sand. Thickness of the surface horizon ranges from 8 to 14 inches. Depth to the C horizon ranges from 20 to 40 inches. Rock fragment content by volume is 5 to 15 percent in the surface horizon, 15 to 30 percent in the B horizon and 35 to 50 percent in the C horizon. Erosion hazard rating for the topsoil is fair due to the percent rock fragment and slope steepness. In some places where the surface layer is less than 20 inches the rating is poor. At present the dominant vegetation is aspen and grass.

TABLE 222f.
SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 8
MAPPING UNIT: i

VEGETATIVE TYPE: ASPEN
LOCATION: PERMIT AREA

HORIZ	DEPTH	COLOR		TEXTURE			CLASS	STRUCTURE	PERCENT	
		DRY	MOIST	SAND	SILT	CLAY			ROCK FGTS	ORG. MAT.
0*	1-2									
A11	0-2	10YR 4/2	7.5YR 3/2	59	26	14	sl	1mkp1 2fgr	5gr	6.53
A12	2-10	10YR 5/3	7.5YR 3/2	58	25	17	sl	2fobk 2mgr	10gr 5k	3.51
B2	10-23	10YR 6/3	7.5YR 4/4	59	26	15	sl	2m sbk	20gr 10k	1.58
C	23-48	2.5YR 7/4	10YR 5/4	47	29	24	1l	m	15gr 20k k100	t
CR**	48-60+	-	-	-	-	-	-	-	-	-

Horiz	pH	Effervescence	EC x 1000	Solubility ppm			SAR	Percent Moist. Satur.
				Ca	Mg	Na		
0*								
A11	6.9	eo	0.96	121.4	17.4	9.47	0.11	67
A12	6.8	eo	0.49	55.4	6.1	10.2	0.17	29
B2	6.7	eo	0.33	40.3	2.9	15.2	0.31	22
C	6.3	eo	0.31	35.0	3.4	18.6	0.40	30
C	5.6	eo	0.31	27.8	4.2	20.8	0.48	21

Taxonomic Classification: Loamy-skeletal, mixed typic Cryoborolla.
* Decomposing leaves and twigs **Weathering conglomerate

MAP UNIT k

This unit consists of very deep, well drained soils that have formed in alluvium and colluvium. They are on toe slopes of steep and very steep mountain sides. Slopes range from 15 to 35 percent. Included is 3 percent of a similar soil with 15 to 25 percent cobbles throughout the profile.

Surface horizon textures are silt loam, loam, or very fine sandy loam. The C horizon textures are very fine sandy loam to loamy fine sand and begin at 30 to 36 inches depth. Rock fragment by volume ranges from 0 to 15 percent at the surface and 15 to 35 percent in the lower horizons. Erosion hazard is moderate at present and will be moderate if disturbed due to the location of the fans. The potential rating for topsoil is good. There is a thick surface and there are few rock fragments in the top 40 inches. Predominant vegetation at present is aspen, snowberry, and elderberry.

TABLE 222g.
SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 6
MAPPING UNIT: k

VEGETATIVE TYPE: ASPEN
LOCATION: PERMIT AREA

HORIZ.	DEPTH	COLOR		TEXTURE			CLASS	STRUCTURE	PERCENT	
		DRY	MOIST	SAND	SILT	CLAY			ROCK FGTS.	ORG. MAT.
A11	0-4	10YR 4/2	7.5YR 3/2	59	25	16	sl	3f gr	10gr	6.16
A12	4-14	10YR 5/3	5.5YR 3/2	48	34	18	l	2 f&m sbk	10gr 5k	1.07
AC	14-32	10YR 6/3	10YR 3/3	49	33	18	l	2m sbk	10gr 10k	2.72
C	32-48+	10YR 6/3	7.5YR 4/4	52	31	17	l	1 m&c sbk	10gr 15k 5s	t

Horizon	pH	Effervescence	EC x 1000	Solubility ppm			SAR	Percent
				Ca	Mg	Na		Moist. Satur.
A11	7.3	eo	.84	111.8	18.6	14.1	0.16	45
A12	7.2	eo	.33	40.0	4.6	14.1	0.28	29
AC	7.2	eo	.32	41.0	4.8	14.6	0.29	27
C	7.4	eo	.31	38.7	4.5	14.2	0.29	26

Taxonomic Classification: Coarse-loamy, mixed cumulic Cryoborolls.

MAP UNIT 1

This unit consists of moderately deep, excessively drained soils that have formed in residuum and colluvium. They are on very steep south facing mountain slopes of 60 percent and more. There is 30 percent rock outcrop and 10 percent shallow soils.

Surface texture is loam to very fine sandy loam. The mollic epipedon ranges from 7 to 11 inches in thickness. Depth to sandstone bedrock ranges from 24 to 40 inches. Percent rock fragment by volume ranges from 15 to 30 percent in the surface horizons and 35 to 65 percent in the lower horizons. Erosion hazard is moderate at present and severe if disturbed due to the steep slopes and sparse ground cover. The potential rating for topsoil is poor due to the thin surface layers, large percentage of rock fragments, and very steep slopes. Predominant vegetation is sagebrush and grass.

TABLE 222h.
SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 5
MAPPING UNIT: 1

VEGETATIVE TYPE: SAGEBRUSH
 LOCATION: PERMIT AREA

HORIZ.	DEPTH	COLOR		TEXTURE			CLASS	STRUCTURE	PERCENT	
		DRY	MOIST	SAND	SILT	CLAY			ROCK FGTS.	ORG. MAT.
A11	0-3	10YR 4/2	10YR 3/2	30	54	16	s1	2f gr	10gr 5k	2.66
A12	3-8	10YR 5/2	10YR 3/2	54	27	19	s1	1f sbk	10gr 10k	1.86
B	8-24	10YR 7/3	10YR 5/4	56	30	14	s1	2f sbk	10gr 30k 10s	t
C	24-31	2.5YR 7/4	10YR 5/5	52	25	28	sc1	1m sbk	5gr 25k 15s	t
R	31+ *	-	-	-	-	-	-	-	-	-

Horizon	pH	Effervescence	EC x 1000	Solubility ppm			SAR	Percent Moist. Satur.
				Ca	Mg	Na		
A11	7.3	eo	0.72	112.5	17.6	12.0	0.14	34
A12	7.3	eo	0.54	72.4	11.2	12.5	0.18	30
B	7.4	eo	0.37	52.3	8.3	11.2	0.19	25
C	7.4	eo	0.44	9.0	8.5	17.6	0.30	34
R	-	-	-	-	-	-	-	-

Taxonomic Classification: Loamy-skeletal, mixed typic cryoboralfs.
 * Sandstone

MAP UNIT m

This unit consists of deep, well drained soils that have formed in colluvium and residuum. They are on steep slopes that range from 35 to 60 percent. There is 8 percent similar soils included in this unit and 3 percent rock outcrop.

The surface texture is loam or clay loam. The surface is 6 to 10 inches thick. The C horizon begins at 18 to 20 inches. The percent of rock fragment by volume ranges from 5 to 10 in the upper 20 inches and 35 to 75 below 20 inches. Erosion hazard is moderate at present and severe if disturbed due to steepness of slopes. The potential rating for borrow topsoil is poor. There is a large rock fragment content, the surface layer is stony and the slopes are steep. Present vegetation is mostly big sagebrush, snowberry, and an understory of grass.

TABLE 222i.
SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 4
MAPPING UNIT: m

VEGETATIVE TYPE: SAGEBRUSH
LOCATION: PERMIT AREA

HORIZ.	DEPTH	COLOR		TEXTURE			CLASS	STRUCTURE	PERCENT	
		DRY	MOIST	SAND	SILT	CLAY			ROCK FGTS.	ORG. MAT.
A1	0-8	10YR 5/2	10YR 4/2	32	14	54	c1	3f gr	5gr	4.21
B2	8-19	2.5YR 7/2	2.5YR 6/4	22	37	14	c1	3f abk	5gr	t
C1	19-28	2.5YR 7/5	10YR 5/8	38	28	34	c1	2m sbk	15gr 25k	t
C2	28-36	2.5YR 7/2	10YR 6/3**	71	11	18	s1	m	5gr 20k 50s	t

Horizon	pH	Effervescence	EC x 1000	Solubility ppm			SAR	Percent Moist. Satur.
				Ca	Mg	Na		
A1	7.3	eo	0.88	156.5	8.6	14.4	0.15	56
B2	7.6	eo	0.38	62.2	2.7	11.8	0.20	41
C1	7.7	eo	0.47	81.4	4.3	12.5	1.18	35
C2	7.8	eo	0.44	74.2	2.9	8.8	0.14	28

Taxonomic Classification: Loamy-skeletal, mixed typic cryoboralf.
* 20% 10YR 6/8 weathering stains **10% 10YR 6/8 weathering stains

MAP UNIT p

This unit consists of deep, somewhat poorly drained soils that have formed in recent stream alluvium. These soils are on stream floodplains. Slopes range from 0 to 3 percent. There is 8 percent inclusion of soil with gravel layers at a depth of 40 inches and 2 percent inclusion of soils that are better drained.

The ground water table is high during spring runoff at 8 to 10 inches. Texture throughout the profile ranges from silt loam to loamy fine sand. Thickness of lenses ranges between 2 and 8 inches. There is an area of .5 acres where there is a gravel layer at 2 to 4 inches depth. This is believed to have been hauled into a corral area. There is a rating of good potential for borrow topsoil where the water table is below 12 inches. Otherwise, wetness is restrictive. At present, the predominant vegetation is a grass and forb mixture.

TABLE 222j.
SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 2
MAPPING UNIT: p

VEGETATIVE TYPE: DISTURBED
LOCATION: PERMIT AREA

HORIZ.	DEPTH	COLOR		TEXTURE			CLASS	STRUCTURE	PERCENT	
		DRY	MOIST	SAND	SILT	CLAY			ROCK FGTS.	ORG. MAT.
A1	0-5	10YR 4/2	10YR 2/2	46	34	20	1	3f gr	-	6.67
AC	1-12	10YR 5/2	10YR 5/2*	32	41	27	1	2m sbk	-	5.77
C1**	12-25	10YR 5/2	10YR 4/3	47	33	20	s1	2c sbk	-	4.31
C2	25-57	10YR 6/2	10YR 4/1	59	26	15	s1	m	-	1.96
C3	57-67	10YR 6/2	10YR 5/2	72	15	13	s1	m	65 gr	2.25

Horizon	pH	Effervescence	EC x 1000	Solubility ppm			SAR	Percent Moist. Satur.
				Ca	Mg	Na		
A1	6.2	eo	3.22	745.0	71.7	15.0	0.07	47
AC	7.2	eo	2.20	455.7	46.1	14.2	0.08	44
C1	7.0	eo	2.34	499.2	66.6	16.0	0.09	42
C2	7.2	eo	1.66	348.2	45.1	20.6	0.14	35
C3	6.8	eo	2.26	499.2	61.4	24.2	0.14	33

Taxonomic Classification: Coarse-loamy, mixed, mollic Cryofluvent

* Mottles begin at 8 inches

** C horizons are stratified layers of sands and silts that vary in thickness and in texture.

MAP UNIT q

This unit is moderately deep to gravel, and moderately well drained. These soils have formed in recent alluvium, and areas on stream terraces. Slopes range from 0 to 3 percent. There is 10 percent inclusion of similar soils in this unit.

The ground water is high during spring runoff at 18 to 24 inches. The surface texture is silt loam to loam. The C horizon texture is loam to loamy very fine sand. Depth to the gravel ranges from 28 to 36 inches. Erosion hazard is slight at present and will remain slight if disturbed. There is a rating of fair potential for borrow topsoil. The course texture in some lenses may be too sandy and the increase of coarse fragments below 40 inches depth makes reclamation potential of the borrow area fair. The present predominant vegetation is a mixture of sagebrush, grasses, and forbs.

TABLE 222k.
SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 1
MAPPING UNIT: q

VEGETATIVE TYPE: SAGEBRUSH
LOCATION: PERMIT AREA

HORIZ.	DEPTH	COLOR		TEXTURE			CLASS	STRUCTURE	PERCENT	
		DRY	MOIST	SAND	SILT	CLAY			ROCK FGTS.	ORG. MAT.
A11	0-5	10YR 4/2	10YR 2/2	45	31	24	1	3f gr	-	6.02
A12	5-14	10YR 4/2	10YR 2/2	73	4	23	sc1	3f gr	-	3.06
AC	14-24	10YR 5/2	7.5YR 3/2	45	36	19	1	1m sbk/2f sbk	-	1.27
C1	24-31	10YR 5/2	10YR 3/2	48	31	21	1	2c gr	-	1.36
C2	31-42+	10YR 5/3	10YR 3/3	59	21	20	s1	1fsbk	60 gr 4k	1.01

Horizon	pH	Effervescence	EC x 1000	Solubility ppm			SAR	Percent Moist. Satur.
				Ca	Mg	Na		
A11	6.9	eo	2.92	422.4	47.4	13.8	0.08	44
A12	7.3	eo	1.20	235.5	30.4	14.2	0.14	35
AC	7.1	eo	0.97	151.7	32.5	19.4	0.19	30
C1	7.2	eo	0.89	151.8	32.8	26.6	0.25	32
C2	7.3	eo	1.10	204.8	37.3	16.6	0.14	28

Taxonomic Classification: Coarse-loamy, mixed, cumulic cryoborolls.

MAP UNIT r

This type consists of well drained soils that have formed in colluvium and residuum. Slope ranges from 8 to 15 percent.

Elevations range from 8000 to 8100 feet. Present vegetation is predominately stinging nettle. Erosion is slight at present and erosion will be slight if disturbed. Suitability rating for topsoil is fair due to depth to bedrock. Range of characteristics include a surface layer 3 to 5 inches thick with 5 to 15 percent rock fragments by volume. The topsoil is 6 to 10 inches thick with 10 to 20 percent rock fragments by volume. Texture of the subsoil is loam or sandy clay loam. The substratum is moderately deep to bedrock at a depth of 30 to 36 inches. There is 35 to 55 percent rock fragment by volume and a texture of loam or sandy loam in the substratum. Included in this unit are 10 percent of the soils described in Unit p and 5 percent of a deep similar soil.

TABLE 222L
SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 15
MAPPING UNIT: r

VEGETATIVE TYPE: STINGING NETTLE
LOCATION: PERMIT AREA

HORIZ.	DEPTH	COLOR		TEXTURE			CLASS	STRUCTURE	PERCENT	
		DRY	MOIST	SAND	SILT	CLAY			ROCK FGTS.	ORG. MAT.
A1	0-4	10YR 3/2	10YR2.5/1	33	47	20	Loam	2f gr	10 gr	7.04
B2+	4-12	10YR 5/3	7.5YR 3/2	31	44	25	Loam	2m pr	15 gr	1.40
C1	12-23	10YR 7/3	10YR 4/4	36	44	20	Loam	massive	30 gr 15 cob	t
C2	23-34	10YR 6/4	10YR 4/4	37	41	41	Loam	massive	25 gr 15 cob 5 stone	t
R	33	-	-	-	-	-	-	-	-	-

Horizon	pH	Effervescence	EC x 1000	Solubility ppm			SAR	Percent Moist. Satur.
				Ca	Mg	Na		
A1	7.28	eo	.43	146.0	28.5	17.9	0.18	66
B2+	7.46	eo	.27	36.2	5.9	6.9	0.14	34
C1	7.61	eo	.20	20.2	4.4	9.4	0.25	28
C2	7.48	eo	.26	22.9	4.5	13.9	0.35	26

Taxonomic Classification: Typic argiborolls, coarse-loamy, mixed, frigid

MAP Unit s

This is a complex consisting of 45 percent of the soil described in Unit t, 35 percent of the soil described in Unit u, and 10 percent of the soil described in Unit r.

MAP UNIT t

This unit consists of well drained soils that have formed in residuum. Slopes range from 8 to 15 percent. Elevation ranges from 8000 to 9100 feet. Present vegetation is predominately Douglas Fir and Engelmann Spruce.

Erosion is slight to moderate at present and the erosion hazard will be moderate if disturbed. Suitability rating for topsoil is fair due to depth to bedrock. Range of characteristics include a surface layer 1 to 4 inches thick with 0 to 5 percent rock fragments by volume. The subsoil is 15 to 20 inches thick with 0 to 5 percent rock fragments by volume. The texture of the subsoil is sandy loam or loam. The substratum is moderately deep to bedrock at a depth of 30 to 36 inches. There are 20 to 35 percent rock fragment by volume and a texture of loam to sandy clay loam in the substratum. Included in this unit are 15 percent of the soil described in Unit u to 5 percent of the soil described in Unit q.

TABLE 222m.
SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 17
MAPPING UNIT: t

VEGETATIVE: SPRUCE/FIR
LOCATION: PERMIT AREA

HORIZ.	DEPTH	COLOR		TEXTURE			CLASS	STRUCTURE	PERCENT	
		DRY	MOIST	SAND	SILT	CLAY			ROCK FGTS.	ORG. MAT.
A1	0-2	10YR 3/2	10YR 2/2	35	44	21	Loam	3f gr	0	7.82
B21	2-11	10YR 4/2	10YR 3/3	35	41	24	Loam	2f sbk	5 gr	3.09
B22+	11-20	10YR 5/2	7.5YR 3/3	32	44	24	Loam	1f sbk	3 gr	1.35
C	20-33	10YR 6/3.5	10YR 4/4	35	40	25	Loam	massive	20 gr 5 cob	0.27
R	33	-	-	-	-	-	-	-	-	-

Horizon	pH	Effervescence	EC x 1000	Solubility ppm			SAR	Percent Moist. Satur.
				Ca	Mg	Na		
A1	7.20	eo	0.68	104.0	17.7	4.96	0.06	75
B21	7.36	eo	0.32	50.7	8.5	5.60	0.10	41
B22+	7.48	eo	0.21	31.4	4.4	6.24	0.14	36
C	7.31	eo	0.19	29.3	4.8	7.68	0.17	30

Taxonomic Classification: Mollic eutroboralfs coarse-loamy, mixed, frigid with 15% u and 5% q

MAP UNIT u

This unit consists of well drained soils that have formed in residuum. Slopes range from 2 to 8 percent. Elevations range from 8000 to 8900 feet. Present vegetation is predominately aspen.

Erosion is slight at present and the erosion hazard will be slight when disturbed. Suitability rating for topsoil is fair due to depth to bedrock. Range of characteristics include a surface layer 8 to 12 inches thick with 0 to 5 percent rock fragment by volume. The substratum is moderately deep to bedrock at a depth of 35 to 40 inches. Texture is clay loam or sandy clay loam. Rock fragments by volume range from 10 to 20 percent. Included in this unit are 10 percent of a similar deep soil and 5 percent of the soil described in Unit t.

TABLE 222n.
SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 18
MAPPING UNIT: u

VEGETATIVE TYPE: ASPEN
LOCATION: PERMIT AREA

HORIZ.	DEPTH	COLOR		TEXTURE			CLASS	STRUCTURE	PERCENT	
		DRY	MOIST	SAND	SILT	CLAY			ROCK FGTS.	ORG. MAT.
A11	0-3	10YR 3/2	10YR 2.5/2	33	41	26	Loam	3m gr	3 gr	7.15
A12	3-9	10YR 4/2	10YR 2.5/1	37	37	26	Loam	3m sbk	0	2.76
B21	9-15	10YR 5/3	7.5YR 3/35	41	24	Loam	2c sbk	0	0	0.61
B22	15-23	10YR 6/3	10YR 3/3	35	40	25	Loam	2m pr	5gr 10cob	t
C1	23-32	10YR 6/4	10YR 3/3	35	37	28	Clay/Loam	1f sbk	15gr	t
C2	32-37	10YR 6/4	10YR 4/4	31	36	28	Clay/Loam	massive	15gr	t
R	37	-	-	-	-	-	-	-	-	-

Horizon	pH	Effervescence	EC x 1000	Solubility ppm			SAR	Percent Moist. Satur.
				Ca	Mg	Na		
A11	7.23	eo	0.80	134.0	19.30	4.96	0.05	57
A12	7.33	eo	0.41	61.9	9.14	6.72	0.11	39
B21	7.41	eo	0.28	36.5	5.49	7.52	0.15	32
B22	7.45	eo	0.21	27.7	4.46	6.88	0.16	27
C1	7.26	eo	0.23	32.5	6.03	10.2	0.54	27
C2	7.16	eo	0.30	21.3	3.98	16.80	0.44	33

Taxonomic Classification: Typic haploborolls

MAP UNIT v

This type consists of shallow, excessively drained soils that have formed in colluvium and residuum. They are on steep to very steep mountain sides. Slopes are 35 to 60 percent. Included is 3 percent of a moderately deep similar soil and 8 percent rock outcrop. Textures range from loam to loamy very fine sand. Depth to fractured bedrock is 14 to 20 inches. Rock fragments range from 35 to 55 percent.

Erosion is moderate at present and the erosion hazard will be severe if disturbed due to sparse vegetation and steep slopes. The potential rating for borrow topsoil is poor due to steep slopes, thin surface layers and the amount of rock fragments. Predominant vegetation is sagebrush with a grass understory.

TABLE 222o.
SOIL ANALYSIS DATA, PROFILE DESCRIPTION, SAMPLE SITE 7
MAPPING UNIT: v

VEGETATIVE TYPE: SAGEBRUSH
LOCATION: PERMIT AREA

HORIZ.	DEPTH	COLOR		TEXTURE			CLASS	STRUCTURE	PERCENT	
		DRY	MOIST	SAND	SILT	CLAY			ROCK FGTS.	ORG. MAT.
A1	0-5	10YR 4/2	7.5YR 3/2	51	31	18	1	2f gr	15gr 15k 10s	5.25
B2	5-16	10YR 5/3	10YR 4/3	50	33	17	vfs1	2f sbk	5gr 30k 15s	1.32
R*	-	-	-	-	-	-	-	-	-	-

Horizon	pH	Effervescence	EC x 1000	Solubility ppm			SAR	Percent Moist. Satur.
				Ca	Mg	Na		
A1	7.1	eo	0.83	133.4	16.8	12.5	0.14	41
B2	7.1	eo	0.54	84.5	11.7	12.0	0.16	31

Taxonomic Classification: Loamy-skeletal, mixed lithic Cryocrepts
* Sandstone

(Welch, et.al., Endangered Plant Studies, Inc., 1980)

224. SUBSTITUTE TOPSOIL.

Refer to 231.200 through 231.300.

230. OPERATION PLAN.

231. GENERAL REQUIREMENTS.

231.100.

The General Office Area and the Belina Haul Road were constructed pre-law. The General Office Area is to be retained as a field office for Kanawha Hocking Coal & Coke Company after reclamation. Since the Belina Haul Road was constructed pre-law as well, no topsoil was preserved. The haul road however exhibits the same natural revegetation capabilities as does the Belina Mine Site and Valcam areas.

The majority of the topsoil, at the Belina Mine Site, was moved prior to the topsoil requirements, however, the remaining topsoil salvaged has since been used for reclamation around the Belina Mine Site. The Valcam Loadout Facility was also established prior to the topsoil requirement; however, some "substitute topsoil" or Vegetative-Supporting-Material (VSM) was harvested, analyzed, and approved. This material is stored at the Belina Mine Site. The material has been stabilized with vegetation and erosion control measures. The VSM stockpile contains approximately 975 cu. yds. of soil which came from the enlargement of the 002A sediment pond, near the truck scale at the Valcam Loadout Facility. The volume of soil was approximated using the AEA method. The excavated material met the criteria of and was approved by the Division.

231.200.

There are no plans to obtain topsoil or substitute topsoil from an off-site source during mine operation. The existing disturbed slopes vacant of topsoil or substitute topsoil, which have been temporarily revegetated, reflect the growing properties of the exposed subsoil strata, and conversely has no indication of incompatible soil characteristics being present. Supplemental to that fact, natural revegetation is occurring on all disturbed area slope planes. It is Valley Camp's position, since this phenomena has taken place and continues to transpire, the VSM area fill materials clearly meet standards set forth for a VSM.

At the Divisions request, when weather permits, in early 1993, Valley Camp has solicited the Carbon County SCS office to evaluate site specific conditions and make a determination if a soil survey would be needed at this point in time to determine suitability of the disturbed area soils for revegetation. If the SCS deems a survey necessary, Valley Camp would then furnish the SCS office with a mylar positive of Potential Map 233, Sheets 1 through 4, Titled: SCS 1993 Disturbed Area Soil Survey, (Scale 1"=100') to depict and describe their survey and results thereof. Upon SCS completing the project, maps and results will be submitted for inclusion in the Reclamation Plan and Appendices, with an additional copy in the "Annual Summary".

231.300.

Valley Camp is confident the disturbed areas soils demonstrate suitability for use as a VSM during both the operational and reclamation phases of mining as evidenced by the existing slope conditions and vegetation. The reseeded cut slopes and the fill slopes with and without topsoil and having no special attendance withstood two years of 200+ above normal precipitation with no apparent erosion problems followed by several years of aridity since, are supporting vegetation and characterizing natural revegetation on all the perimeter slopes. The only cut slopes not demonstrating suitability are those with a near vertical attitude. See Map 231.300 titled "Suitability of Topsoil Substitutes" illustrating the various slopes. Areas of natural encroachment are depicted on the Vegetation Map 341.300.

MAP 231.300. Suitability of Topsoil Substitutes VSM - Sheet 1
MAP 231.300. Suitability of Topsoil Substitutes VSM - Sheet 2
MAP 231.300. Suitability of Topsoil Substitutes VSM - Sheet 3
MAP 231.300. Suitability of Topsoil Substitutes VSM - Sheet 4

231.400.

The topsoil storage area at the Belina Mine Site is closely surrounded by dense forest exhibiting a medium amount of deadfall and heavy ground cover. This provides excellent protection against wind erosion as well as rapid snow melt in the spring.

Drainage control ditches encompass the storage area to direct any migration of material toward the bermed basin at the east end of the stockpile. The bermed basin also denies vehicle access on to the stockpile.

Straw bales have been utilized on the north facing side of the stockpile to assist in containment, should a stockpile slope failure occur. The stockpile has been successfully vegetated with the approved temporary seed mix and no longer requires straw bales for containment.

232. TOPSOIL AND SUBSOIL REMOVAL.

232.100. THROUGH 232.720.

No additional disturbance is planned for the Mine Permit Area, however, should new disturbance become necessary, the topsoil and subsoils involved will be handled in accordance with UDOGM Regulations.

233. TOPSOIL SUBSTITUTES AND SUPPLEMENTS.

The vast majority of the disturbance transpired pre-law and the fact the (soils) materials for reclamation will be derived from the fill areas required to reestablish the Whisky Creek channel negate the need for another attempt to satisfy the regulations dealing with a permit application.

Additional information provided related to topsoil substitutes and supplements to be used on reclaimed lands is found within the "Reclamation Plan" portion of this permit submittal.

233.100. THROUGH 233.400.

As described in 231.200 and 231.300 of this section, suitability of the "overburden materials" has been evidenced by virtue of existing vegetation within the disturbed areas. Further investigation at this time is not essential.

234. TOPSOIL STORAGE.

234.100. THROUGH 234.320.

Reclamation of each disturbed area will take place during the first appropriate season following the time when that area becomes available for such activities. Certain affected areas, such as cut and fill slopes on roads, operation pads, and outside slopes of sediment ponds, which required disturbance early in the operational life of the mines, appear to be stable and are revegetated but will be reevaluated by Valley Camp and the Division to determine practicality and magnitude of redisturbance of these areas prior to the commencement of reclamation. Other affected areas occupied by support facilities will not be reclaimed until the conclusion of mining activities. Refer to 231.100.

240. RECLAMATION PLAN.

Information related to reclamation applicable to this section has been moved to the MRP volume of the August 1993 permit submittal.

250. PERFORMANCE STANDARDS.

251. THROUGH 252.

All topsoil and Vegetation Supporting Materials, will be stockpiled, maintained, and redistributed according to 230 and 240.

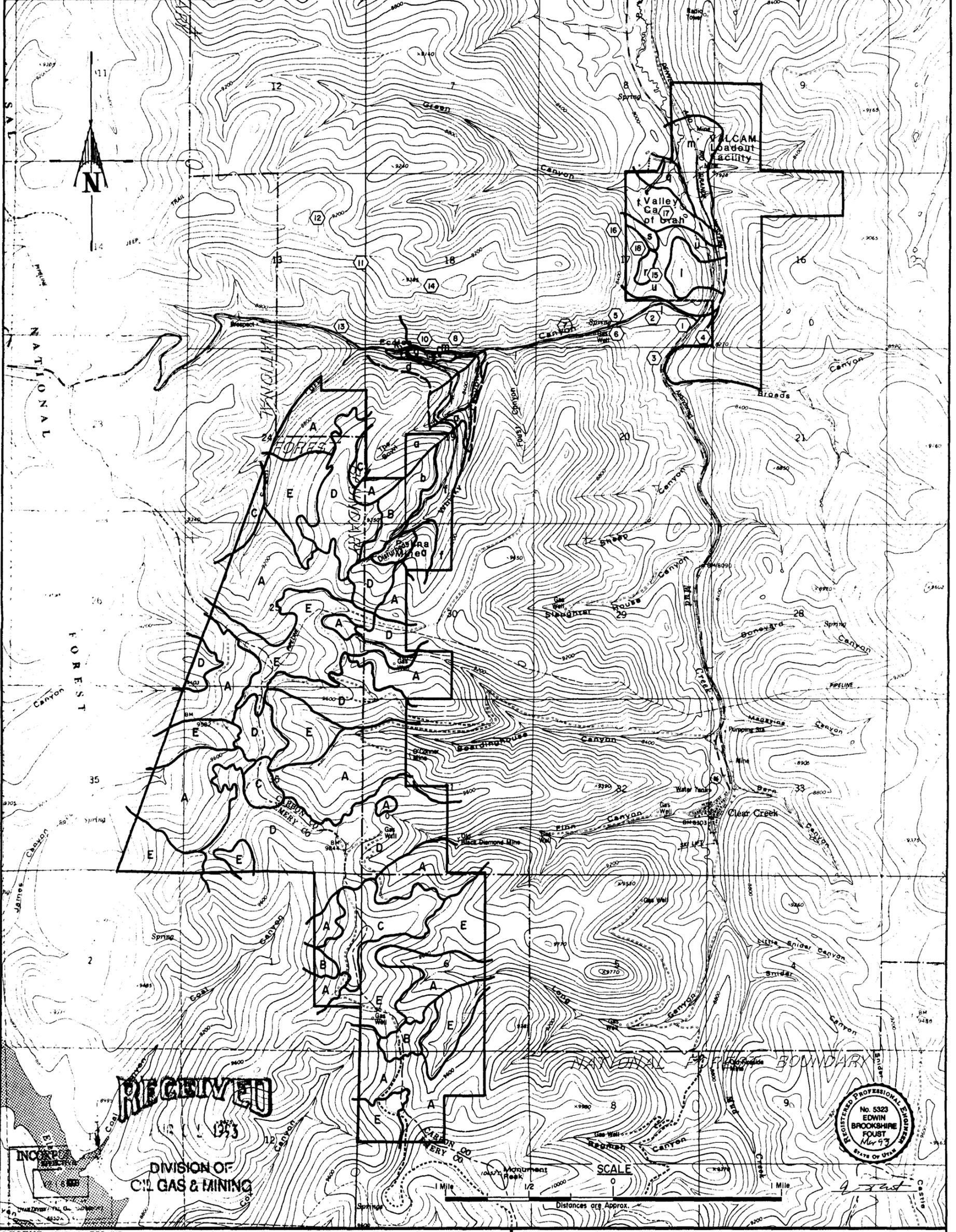
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VALLEY CAMP ACT/807/001 REVISION			INCORPORATED INTO MRP BY DOGM			VALLEY CAMP ACT/807/001 REVISION			INCORPORATED INTO MRP BY DOGM			VALLEY CAMP ACT/807/001 REVISION			INCORPORATED INTO MRP BY DOGM		
NO.	DATE	DESCRIPTION	REF. NO.	DATE	INITIALS	NO.	DATE	DESCRIPTION	REF. NO.	DATE	INITIALS	NO.	DATE	DESCRIPTION	REF. NO.	DATE	INITIALS



LEGEND - STUDY BY EPS, INC.

○ - SAMPLE SITES	g - Course-loamy, mixed Pachic Cryoborolls
A - Loamy-skeletal, mixed, mollic cryoborolls	k - Course-loamy, mixed Cumullic Cryoborolls
B - Fine loamy, mixed Argie Pachic Cryoborolls	l - Loamy-skeletal, mixed Typic Cryoborolls
C - Loamy-skeletal, mixed Argie Cryoborolls	m - Loamy-skeletal, mixed, Typic Cryoborolls
D - A complex of units B and C	q - Course-loamy, mixed Cumullic Cryoborolls
E - A complex of units A, B and C	r - Typic Argiborolls, course-loamy, mixed, frigid
G - Loamy-skeletal, mixed, mollic cryoborolls	s - Complex of 10% r, 45% t, and 35% u
D - Fine loamy, mixed Argie Pachic Cryoborolls	t - Mollic entroborolls course-loamy, mixed, frigid with 15% u and 5% q
f - Similar to b with 30% of the soils having a slope greater than 60% with as much as 50% rock fragments below 12 inches.	u - Typic haploborolls, course-loamy, mixed, frigid with 5% r

VALLEY CAMP OF UTAH, INC.
SCOFIELD ROUTE, HELPER, UTAH 84526

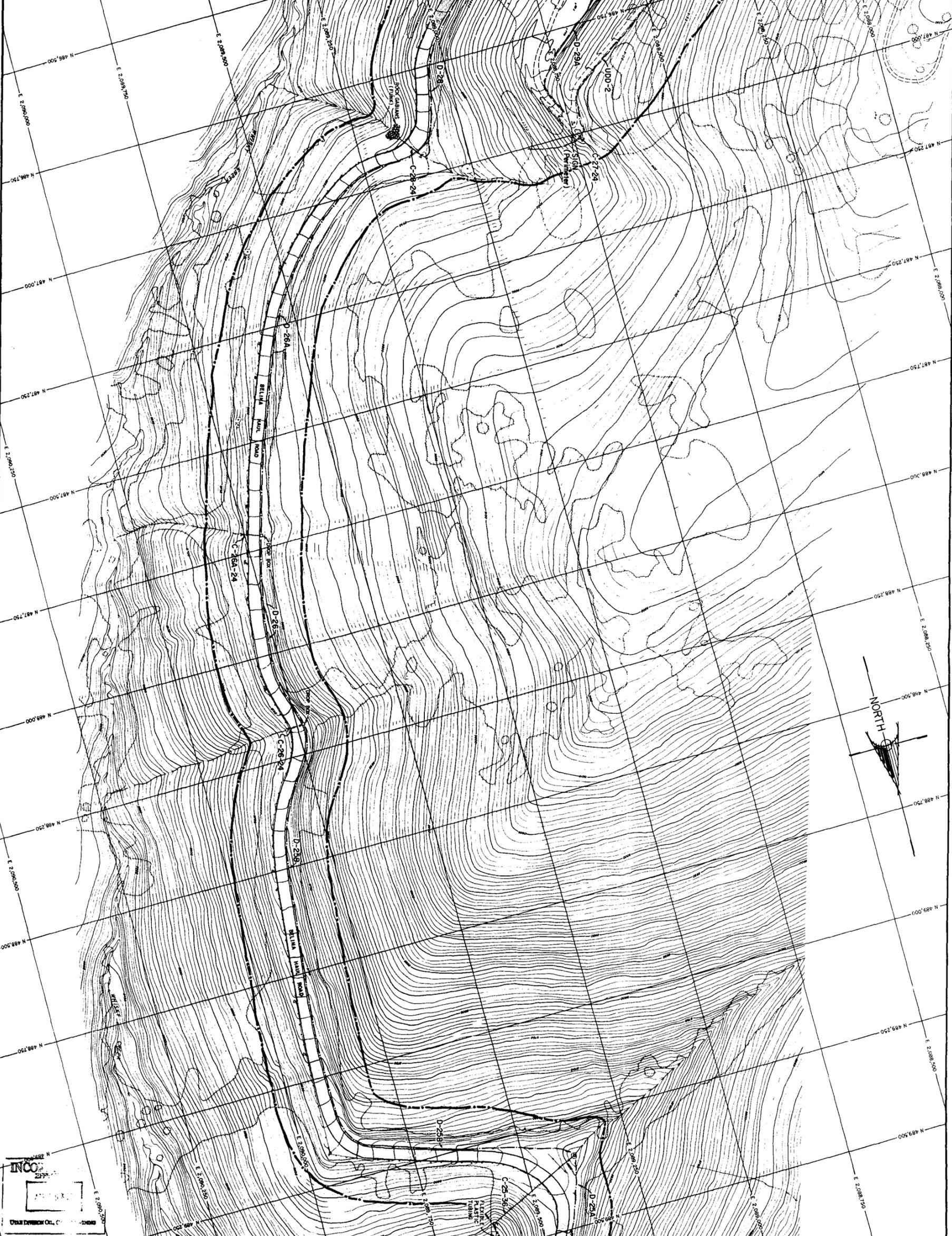
TITLE: **R645-301-223.100**
SOILS

Drawn by: Ed Sanderson
Approval: _____
Date: Sept. 1, 89

Drawing No. **R645-301-223.100**
Rev. 1
Date: 3/93

SAND DESIGN & GRAPHICS
SCALE: _____
SHEET 1 of 1

VALLEY CAMP ACT/007001 REVISION			INCORPORATED INTO MRP BY DOGM			VALLEY CAMP ACT/007001 REVISION			INCORPORATED INTO MRP BY DOGM			VALLEY CAMP ACT/007001 REVISION			INCORPORATED INTO MRP BY DOGM		
NO.	DATE	DESCRIPTION	REF. NO.	DATE	INITIALS	NO.	DATE	DESCRIPTION	REF. NO.	DATE	INITIALS	NO.	DATE	DESCRIPTION	REF. NO.	DATE	INITIALS



LEGEND:
Note: See Sheet 1

RECEIVED
AUG 05 1993
DIVISION OF
OIL GAS & MINING

REGISTERED PROFESSIONAL ENGINEER
No. 5323
EDWIN
BROOKSHIRE
FOUNT
MAY 93
State of Utah
Edwin Brookshire

VALLEY CAMP OF UTAH, INC.
SCOFIELD ROUTE, HELPER, UTAH 84526

CD

TITLE:
R645-301-231.300
SUITABILITY OF TOPSOIL
SUBSTITUTES - VSM

Drawn by: Ed Sanderson Date: 3/93
Approval: Date:
Drawing No. Rev 1
R645-301-231.300 3/93

SAND DESIGN & GRAPHICS SCALE: 1" = 100' SHEET 3 of 4

TABLE OF CONTENTS
BIOLOGY R645-301-300

<u>SECTION</u>	<u>PAGE NO.</u>
300. BIOLOGY	Page 300-1 of 9
310. INTRODUCTION	Page 300-1 of 9
320. ENVIRONMENTAL DESCRIPTION	Page 300-1 of 9
330. OPERATION PLAN	Page 300-2 of 9
340. RECLAMATION PLAN	Page 300-7 of 9
350. PERFORMANCE STANDARDS	Page 300-7 of 9
REFERENCES	Page 300-9 of 9

LIST OF TABLES

<u>TABLE NO.</u>	<u>PAGE NO.</u>
TABLE 321A PLANT COMMUNITIES OF THE VALLEY CAMP LEASE AREA BY PERCENT OF AREA COVERED.	Page 300-1 of 9

LIST OF MAPS

<u>MAP NO.</u>	<u>REFERENCE PAGE</u>
323.100. Vegetation	Page 300-2 of 9

310. INTRODUCTION.

320. ENVIRONMENTAL DESCRIPTION.

The Valley Camp of Utah, Inc. Mine Permit Area consists of about six and one-half square miles of land situated in the Wasatch Plateau of Utah astride the Carbon-Emery county line. The property straddles the divide between the headwaters of Huntington Creek to the west and Pleasant Valley on the east. Elevations vary from a low of about 8000 feet in the Pleasant Valley drainage to a high of near 9800 feet on the divide crests. Canyon slopes are steep with rounded summits, and are vegetated.

321. VEGETATION INFORMATION.

The Valley Camp of Utah, Inc., properties and adjacent areas occur within the aspen-spruce-fir phase of the boreal forest biome, with representatives of cool desert shrub, riparian, and, to a lesser extent, mountain brush community types present as significant though minor components. The vegetation map is referred to as Vegetation Map 323.100.

The spruce-fir community, a type mainly on north-facing slopes is dominated by Engelmann spruce and subalpine fir, with variants supporting admixtures of aspen and wet meadow subtypes characterized by species of sedges and grasses. Often broad transitional zones occur between the dense spruce-fir forest and adjacent aspen communities. Occasionally stands of the spruce-fir type are almost entirely single species dominants due to past logging or other successional influence. In greater abundance are stands containing all age classes of both spruce and fir species. The spruce-fir type, including areas transitional into aspen, constitutes some 40 percent of the Mine Permit Area.

TABLE 321A
 PLANT COMMUNITIES OF THE VALLEY CAMP
 LEASE AREA BY PERCENT OF AREA COVERED.

Vegetation Type	Map Designation	Percent
Spruce-Fir	SF	37.8
Aspen	A	21.0
Grass-Forb-Elderberry	GFE	12.8
Sagebrush	SB	21.9
Fringed Sage	FS	0.4
Disturbed	D	6.1
TOTAL		100%

Baseline data applicable to this section has been moved to Appendix 321.

322. FISH AND WILDLIFE INFORMATION.

Information applicable to this section has been moved to Appendix 321.

322.100 THRU 322.230.

Fish and wildlife information obtained for this MRP to obtain a permit meets the requirements of the sections.

Resource information has been gathered for the area within the Mine Permit Area and for those portions of the adjacent areas where effects on the resource may be expected to occur.

The information presented is based on the regulatory authority's determination as to level of detail required and the area of study to be involved. It includes published data and site specific information gathered by the applicant and various consultants.

323. MAPS AND AERIAL PHOTOGRAPHS.

Maps of vegetative types were made by using a mosaic of aerial photographs. Community types were outlined on the photomosaics. Accuracy was assured by correlation of actual communities as inspected on the ground to those discernible on the photographs.

323.100. THRU 323.400.

Refer to Vegetation Map 323.100.

MAP 323.100. Vegetation

330. OPERATION PLAN.

AQUATIC RESOURCE MONITORING PLAN.

ECCLES CREEK

Available data on Eccles Creek include fish survey results (UDWR, 1968-1979); macroinvertebrate survey results (Winget, 1979); water quantity and quality survey results (Vaughn Hansen Associates, 1979-1980); and stream habitat observations (Winget, 1979). Yearly monitoring of Eccles Creek of Macroinvertebrate samples, habitat measurements and fish surveys are taken by the DWR. Intensity and duration of sampling will be dependent upon success of sedimentation control measures. Regular water quality and quantity monitoring is ongoing as required.

MUD CREEK

No surface disturbance of Mud Creek is anticipated. Sedimentation from upstream land use is one of the potential threats to Mud Creek. Sediment samples will be taken at a frequency

and duration depending upon success of sediment control upstream. Aquatic macroinvertebrate samples will be taken in conjunction with the sediment samples in the spring, summer, and fall of each year as required by effects of surface disturbance activities.

JAMES CANYON CREEK

Cutthroat trout have been observed in high number in James Canyon Creek during the spring spawning time. James Canyon Creek is an important part of the fisheries resource of Electric Lake. The stream will probably not be impacted by the Belina Project. If the stream is impacted a monitoring and protection plan will be initiated.

SLAUGHTERHOUSE, BOARDINGHOUSE, FINN, WHISKY, LONG AND MUD CREEKS

These streams are all intermittent, at least during low precipitation years. As such they are not considered as important parts of the fishery resources of Mud Creek or Scofield Reservoir (personal communication, Mr. John Livesay, UDWR, Price Office, November 7, 1979). Since these streams will not be directly impacted by the Belina Project, a monitoring or protection plan will not be necessary.

AVIFAUNA AND RAPTOR PLAN

Ornithological investigations have been accomplished over several time periods in the Scofield, Skyline, and Valley Camp of Utah, Inc. coal mining areas. Specifically, these periods have been: December 1, April 7-8, April 25-26, May 17-18, June 13-14, and July 26-29. During these periods a record has been maintained on threatened or endangered species, raptors and raptor nests, occurrences of species of high Federal interest, and migratory birds. The obvious time period where observations are missing is during the major autumn migration period of September-October. This may represent a critical time. For example, the peak RAPTOR migration along the Wasatch Front, 60 miles north of Scofield, revealed a total of 308 migration raptors recorded between September 9 and October 4 with the peak number around mid to late September (Mosher, et al. 1978).

No part of the Mine Permit Area has shown evidence of being inhabited by the endangered Northern Bald Eagle which occurs in the Scofield area during the migration season between November 15 and March 15 each year. Currently no roost trees have been observed. Two active nests were found in ECCLES Canyon, one of the Goshawk and the other of the Cooper's Hawk (White, 1980). The Cooper's Hawk is a species of high federal interest. These two species can generally tolerate considerable human impact. The Golden Eagle, also of high federal interest, has been seen in the Mine Permit Area, but no nests were found.

In order to minimize disturbance to the Bald Eagle and other endangered or important species all personnel associated with the mining operation will be made aware of the birds' annual presence and value to society. These people will also be instructed not to disturb Bald Eagles or other endangered or important raptors. If a roost tree is located it will be immediately reported to the UDWR and the USFWS. Roost trees and a suitable buffer zone will be protected from human disturbance during the winter period.

Design and construction of all electric power lines and other transmission facilities will be in accordance with guidelines set forth in "Environmental Criteria for Electric Transmission System" published by the USDI and USDA in 1970 and/or the REA Bulletin 61-10 "Powerline Contacts by Eagles and Other Large Birds."

In 1982 Mr. Ron Joseph of the United States Department of the Interior, Fish and Wildlife Service, 1311 Federal Building, 125 South State Street, S.L.C., Utah, conducted a power distribution line survey of the permit area and found no threat to the Bald or Golden eagle. Mr. Joseph stated previous Fish and Wildlife Service (FWS) surveys have not shown a problem with powerlines in coniferous cover primarily because trees themselves offer much better perch sites than crossarms of power poles. Mr. Joseph also stated that, on close examination, the powerlines did not reveal any use by raptors. This may be verified in the Fish and Wildlife Service survey report to Mr. Cleon Feight, Director of the Utah Division of Oil, Gas and Mining, Dated November 10, 1982.

HIGH INTEREST WILDLIFE AND HIGH VALUE HABITATS

Mule deer and elk inhabit high priority and crucial-critical winter ranges between November 1 and May 15 each year. These areas will be protected from exploration activities during the inhabited periods. Disturbances on high priority deer winter ranges will be kept to a minimum.

Big game on winter ranges are sensitive to disturbances. Therefore, all personnel associated with the mine will be instructed on the annual presence and value of this big game. Efforts will be made to avoid any unnecessary disturbance by man.

If the mining operation installs structures which present barriers to wildlife's daily movements, suitable passage structures will be installed.

WILDLIFE PROTECTION PLAN

1. All roads under the applicant's control, and within the Mine Permit Area, will have posted speed limits.
2. The access road along Whisky Canyon will be posted with warning signs indicating possible animal crossing areas.
3. Design and construction of power transmission and distribution lines will be in accordance with guidelines set forth in "Environmental Criteria for Electric Transmission System" (USDI, USDA [1970]) and REA Bulletin 61-10.
4. Consideration of possible restriction of animal movement will be incorporated into the design and installation of all structures within the Mine Permit Area.
5. All hazards associated with the mine will be fenced or covered to minimize danger to wildlife.
6. Disturbances to big game on high priority winter range will be kept to a minimum.

7. Wildlife habitat will be enhanced at the time of reclamation (using the best technology currently available) through restoration of habitat features and selection of reclamation materials that will improve the quality and or quantity of forage and or cover.
8. All riparian habitat disturbed by the applicant during mining will be reclaimed to pre-mining status.
9. The presence of any threatened or endangered plant or animal within the Mine Permit Area will be reported to the appropriate regulatory agency.
10. Adequate precautions will be taken to keep coal out of stream channels.
11. Personnel associated with the mine will be informed of the values of the wildlife resource associated with the Mine Permit Area and adjacent area.
12. All mine personnel will be instructed through annual training on the importance of fish and wildlife protection.

Smaller areas of riparian habitat are found in Whisky Canyon, South Fork of ECCLES Canyon, and minor drainages associated with these canyons. These areas will not be disturbed by the applicant's operations. The portal site in Whisky Canyon was developed under the 211 Program and affected the riparian habitat in that area. Stream disturbance related to surface activities should not occur within the Mine Permit Area and, as a result, impact on fish should be minimized. Mitigation measures will include a Surface Water Monitoring Program, as well as activities proposed by the applicant and approved by the proper authority.

The total area of the permit is considered summer range for elk, deer, and moose. There is no winter range use with the exception of the riparian habitat areas used by moose, as well as for spring calving.

Valley Camp has infrared aerial photography from the forest service subsidence monitoring endeavor in the late seventies and early eighties. This infrared photography should suffice for the forest service needs presently and should additional infrared be needed, the bond release aerial photography commitment could include it.

A survey for RAPTOR nests in the areas providing a nesting habitat will be conducted in the early spring of 1993 with the assistance from DWR and the Division.

The 1993 survey will cover the area immediately above the newly projected mining plan directly north of the O'Connor mine, this area will include a specified radius encompassing proposed mining for one year.

Additional surveys will depend upon future mining time frames. When mining is reactivated, Valley Camp will with the assistance of DWR, during the winter do an aerial survey of all the permit area which contains raptor nesting habitat.

331.

Refer to 341.100 and 341.200

332. SUBSIDENCE.

333.0 THRU 333.300.

A survey (for presubsidence) within or adjacent to the Valley Camp of Utah, Inc. Mine Permit Area conducted for Valley Camp Utah, Inc. by Endangered Plant Species through Vaughn Hansen Associates, demonstrates that areas for agricultural or silvicultural production of food and fiber and grazing lands are of such low production that they can be classified as non-renewable resource lands. The statement regarding food and fiber has been taken from the presubsidence survey report prepared by EPS, Inc. in 1980. This report was approved in the 1984 TA by OSM.

Aquifers and areas for the recharge of aquifers and other underground waters will suffer minimal adverse impacts from the mining activities. Should subsidence occur the subsidence cracks will likely seal rapidly preventing the deep percolation of water and subsequent loss of springs and other water sources (Hansen, 1980).

Refer to 222 thru 223 Soil Survey and 322 Vegetation Information. This survey was conducted by Vaughn Hansen & Associates. The information referenced above was approved by the Division for insertion as the "Renewable Resource Survey" requirements by Mr. Lynn Kunzler.

The Subsidence Base Map, shows survey monument information, gas line locations, power lines and other information. The determination of the types of lands that exist within and adjacent to the Mine Permit Area were determined by use of Federal Government land use maps and private consultants. The productivity levels of this land are discussed in 200. and 300. Refer also to Soil Map 223.100 and Vegetation Map 323.100.

The only structures which could be damaged if subsidence occurs are gas pipelines. These structures will be protected by limiting extraction directly under the pipelines and within an area including a 35 degree angle of draw from the lowest coal seam to be mined. Such a label actually applied to the agricultural portion of the definition of a "Renewable Resource", and not to aquifers and areas for the recharge of aquifers or silvicultural production. Material damage or diminution of value of aquifers is discussed in the Vaughn Hansen Associates Report.

The forest land is classed as a renewable resource, and as such, will be afforded maximum subsidence protection in order to ensure future productivity.

Should material damage be incurred to the Mountain States Resources (now doing business as Questar Pipeline Company) natural gas pipelines, despite the approved subsidence damage prevention measures, the applicant will repair the damage to the pipelines caused by subsidence from the applicant's mining activities or compensate the owner of the pipeline for such damage.

Any area roads which are materially damaged by subsidence will be repaired and re-graded to restore them to pre-subsidence usefulness. A buffer zone of at least 150 feet is left around natural gas wells in the Mine Permit Area. Subsidence should not cause damage to the wells.

Belina No. 1 Mine Map E1-0002 (Map 521.141a) and Belina No.2 Mine Map D2-0060, (Map 521.141b) indicate mining plan consideration of subsidence protection for surface structures. The plan calls for an angle-of-draw of 35 degrees. If the monitoring study indicates a different angle-of-draw, the plan will be modified. Also included as part of the Subsidence Plan is approval from the MMS for using a 35 degree angle-of-draw for limited extraction. It is anticipated that the true draw angle will be determined when actual subsidence data become available. The angle-of-draw appears to be influenced by the faults within the immediate area of subsidence.

The Subsidence Control plan is presented in Appendix 724.600. Associated subsidence mapping is identified as the Belina No. 1 Mine Map E1-0002 (Map 521.100), the Belina No. 2 Mine Map D2-0060, (Map 521.100), and Subsidence Base Maps 728.100a and 728.100b.

340. RECLAMATION PLAN.

Information related to reclamation applicable to this section has been moved to the MRP volume of the August 1993 permit submittal.

350. PERFORMANCE STANDARDS.

351. GENERAL REQUIREMENTS.

All coal mining and reclamation operations will be carried out according to plans provided under 330 thru 340..

352. CONTEMPORANEOUS RECLAMATION.

The revegetation on all disturbed land by the coal mining and reclamation operations will be done as contemporaneous as practicable.

353. THRU 353.300. REVEGETATION: GENERAL REQUIREMENTS.

The vegetative cover will be diverse, effective, and permanent, and comprised of species native to the area, or of introduced species where desirable and necessary to achieve the approved post mining land use and approved by the Division, being at least equal in extent of cover to the natural vegetation of the area and be capable of stabilizing the soil surface from erosion. The reestablished plant species will be compatible with the approved post mining land use and have the same seasonal characteristics of growth as the original vegetation. Also it will be capable of self-regeneration and plant succession and be compatible with the plant and animal species of the area and meet the requirements of applicable Utah and federal seed, poisonous and noxious plant and introduced species laws or regulations.

353.400.

N/A

354. THRU 355. REVEGETATION.

Information related to reclamation applicable to this section has been moved to the "Reclamation Plan" volume of this permit submittal.

356. REVEGETATION: STANDARDS FOR SUCCESS.

356.100.

Success of revegetation will be judged on the effectiveness of the vegetation for the approved post mining land use, the extent of cover compared to the extent of cover of the reference area or other approved success standard, and the general requirements of 353.

Additional information related to reclamation applicable to this section has been moved to the "Reclamation Plan" volume of this permit submittal.

356.300 THRU 356.400.

Adequate siltation structures will be maintained until the site has been vegetated and stabilized and either approved to be left or removal is authorized by the Division. If these structures are removed the affected area will be revegetated in accordance with the Reclamation Plan.

357. REVEGETATION: EXTENDED RESPONSIBILITY PERIOD.

357.100 THRU 357.300.

Since the precipitation is in excess of 26 inches annually, it is assumed that the five-year extended liability period will apply.

No husbandry practices are envisioned at this point in time.

358. PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES.

358.100. THRU 358.530.

Valley Camp will, to the extent possible using the best technology currently available, minimize disturbances and adverse impacts on fish, wildlife, and related environmental values and will achieve enhancement of such resources where practicable. Refer to 330.

REFERENCES

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TABLE OF CONTENTS
R645-301-400. LAND USE AND AIR QUALITY.

<u>SECTION</u>	<u>PAGE NO.</u>
400. LAND USE AND AIR QUALITY	Page 400-1 of 5
410. LAND USE	Page 400-1 of 5
420. AIR QUALITY	Page 400-4 of 5
REFERENCES	Page 400-5 of 5

LIST OF MAPS

<u>MAP NO.</u>	<u>REFERENCE PAGE</u>
411.100. Premining Land Use Map	Page 400-1 of 5

R645-301-400. LAND USE AND AIR QUALITY.

410. LAND USE.

411. ENVIRONMENTAL DESCRIPTION.

See Section 320.

411.100. PREMINING LAND USE INFORMATION.

Eccles Canyon serves as the boundary between two livestock grazing allotments. The USDA Forest Service has range analysis maps for both areas. These maps were used to compile the premining land capability and the premining land use. See the Premining Land Use Map 411.100 in the 1993 Appendix 411.

MAP 411.100. Premining Land Use Map

411.110. THRU 411.120.

The surrounding area is rich in mining history. For a number of years prior to the opening of the Utah No. 2 Mine in 1974 by Valley Camp of Utah, Inc., only limited mining activity had taken place in that area. However, early commercial production of coal was initiated in the region during the latter part of the nineteenth century. The Pleasant Valley Coal Company, Utah Fuel Company and others began mining operations in the Scofield area first. Wagon roads and then a narrow gauge railroad were utilized to transport the coal to more heavily populated Utah and Salt Lake Valleys.

The oldest mine in the district, Utah No. 1 Mine, is situated on properties now held by Valley Camp, just south of the Valcam Loadout Facility on the east side of Mud Creek about three miles south of Scofield, Utah. It was opened in 1878 and was originally called the Mud Creek Mine. The portals of the mine were at tippie level above the railroad. Conventional mining methods (drill, shoot, and load) and rail haulage were used, typical of most mines in this district. The principal operator at that time was Utah Fuel Company, a subsidiary of the Denver and Rio Grande Western Railroad. This mine had several periods of activity but the workings were not extensive. Doelling (1972) estimated 713,800 tons total production.

The Union Pacific Mine just east of Scofield was opened in 1844 in a coal seam that had a thickness in excess of 30 feet. The upper seam split to north, however both splits were mined. An upper seam with about 100 feet of separation was also mined to some extent. Mining was terminated after the lower seam caught fire and to date is still burning.

The Winter Quarters Mine, about one and one-half miles west of Scofield, Utah, developed into the largest mine in the district, producing nearly 11 million ton of coal. Spieker (1931), described the mine as having five openings, and eventually six openings. These operations were owned by the Utah Fuel Company (D&RGW). This mine was the site of a major disaster May 1, 1900, when more than 200 men were killed in a coal dust explosion.

Several other mines were opened in the vicinity of Scofield, but the only other mines of significance were the Kinney Mine to the Northeast, and later, the Colombine Mine near the same locality.

The Clear Creek Mines at Clear Creek, Utah were opened in 1899. The majority of the mining took place in the lower of two seams on the east side of the main valley. Extensive mining moved eastward until terminated by a major fault zone. A 1700' rock tunnel was driven across the fault zone and mining continued to the outcrop in upper Bob Wright Canyon.

In Eccles Canyon on the south side of Eccles Creek within Coastal States Mine site disturbed area, there was a small mining operation in the Lower O'Connor seam. Nothing is known about this mine or the period of activity and production is assumed to have been limited.

The Bentley, Huntington Mine and Loucks Mines were the only significant producer, as 440,000 ton of coal was produced between 1895 and the early 1940's (Doelling, 1972). These mines are located within the southern projection of the Connelville Block.

An early wagon mine, the Black Diamond Mine, was operated in upper Finn Canyon west of Clear Creek, Utah. The period of activity and the production are not known for certain, but it was probably operated intermittently between 1923 and 1941.

Mining from the O'Connor Mines in Boardinghouse Canyon later broke into the Black Diamond Mine. These mines lie immediately to the east of the O'Connor fault. Both the Upper and Lower O'Connor seams were mined, with each seam having a thickness of nearly 18 feet at the outcrop. The coal was shipped to the Castlegate Prep Plant near Helper, Utah, where it was washed and sold.

In 1974 Valley Camp of Utah, Inc. opened the Utah No. 2 Mine, which was projected to produce between one-half to three-quarters of a million ton annually, however unexpected faulting caused the operation to cease. In 1976, Valley Camp opened the Belina No. 1 Mine and constructed the necessary support facilities near the head of Whisky Canyon. The projected production was also from one-half to three-quarters of a million ton annually.

The historic land use at the Belina Mine Site is rangeland.

The land use in the immediate vicinity of the Utah No. 2 Mine, at the Valcam Loadout Facility has been historically mined.

Land use for the Belina Mine Site and Belina Haul Road areas were in fact only used for rangeland prior to Valley Camp's mining activities, while approximately 40% of the Valcam Loadout Facility was previously disturbed by the activities of Utah No. 1 Mine around the turn of the century, the remainder was rangeland. The General Office Area (just south of the office building) are foundations of an old sawmill.

The analysis of land capability and productivity is based on soil and vegetation studies, USDA information, and consultant work. The premining land use for the area affected by the surface facilities was capable of supporting shrub and brush rangeland and mixed forests. For specific information see Soils 200. and Biology 300.

411.130.

The land use classifications under local zoning laws for the Mine Permit Area are as follows:

CARBON COUNTY

All of the Mine Permit Area situated in Carbon County is zoned for Recreation, Forestry and Mining with the exception of the West half of the South West Quarter of Section 9, T13S, R7E SLB&M. The rezoning of the Critical Environmental (CE-1) back to RF&M is being prepared.

EMERY COUNTY

All of the Mine Permit Area situated in Emery County is zoned for Recreation, Forestry and Mining. However rezoning to Critical Environmental in certain sections, are being considered. When these changes are finalized, the changes will be noted in this permit.

411.140. THRU 411.145.

See the 1993 Appendix 411.140, also see the Pleasant Valley Mining District Map 521.111.

411.200. PREVIOUS MINING ACTIVITY.

There was no previous mining activity at the Belina Mine Site. Refer to 411.110. thru 411.120..

412. THRU 412.140. RECLAMATION PLAN.

The complete reclamation plan available at this time is presented in the "Reclamation Plan" volume included as part of this 1993 permit submittal.

Adequate siltation structures will be maintained until the site has been vegetated and stabilized and either approved to be left or removal is authorized by the Division. If these structures are removed the affected area will be revegetated in accordance with the Reclamation Plan.

412.200. LAND OWNER OR SURFACE MANAGER COMMENTS.

Any information related to Land Owner or Surface Manager comments is available for review at the office of Valley Camp of Utah, Inc..

412.300.

N/A

413. PERFORMANCE STANDARDS.

413.100. THRU 301.120.

See SOILS 200., BIOLOGY 300. and ENGINEERING 500..

413.200.

N/A

413.300.

N/A

420. AIR QUALITY.

The Air Pollution Control Plan at Valley Camp has been approved by the State of Utah, Bureau of Air Quality, letter of May 23, 1975, and May 7, 1980. The USEPA (May 29, 1980 Ref. 8AH-A) has determined that Valley Camp does not require a Point Source Discharge Permit. Therefore, no air quality monitoring plan is proposed. See 1993 Appendix 420.

Fugitive Dust Control Plan

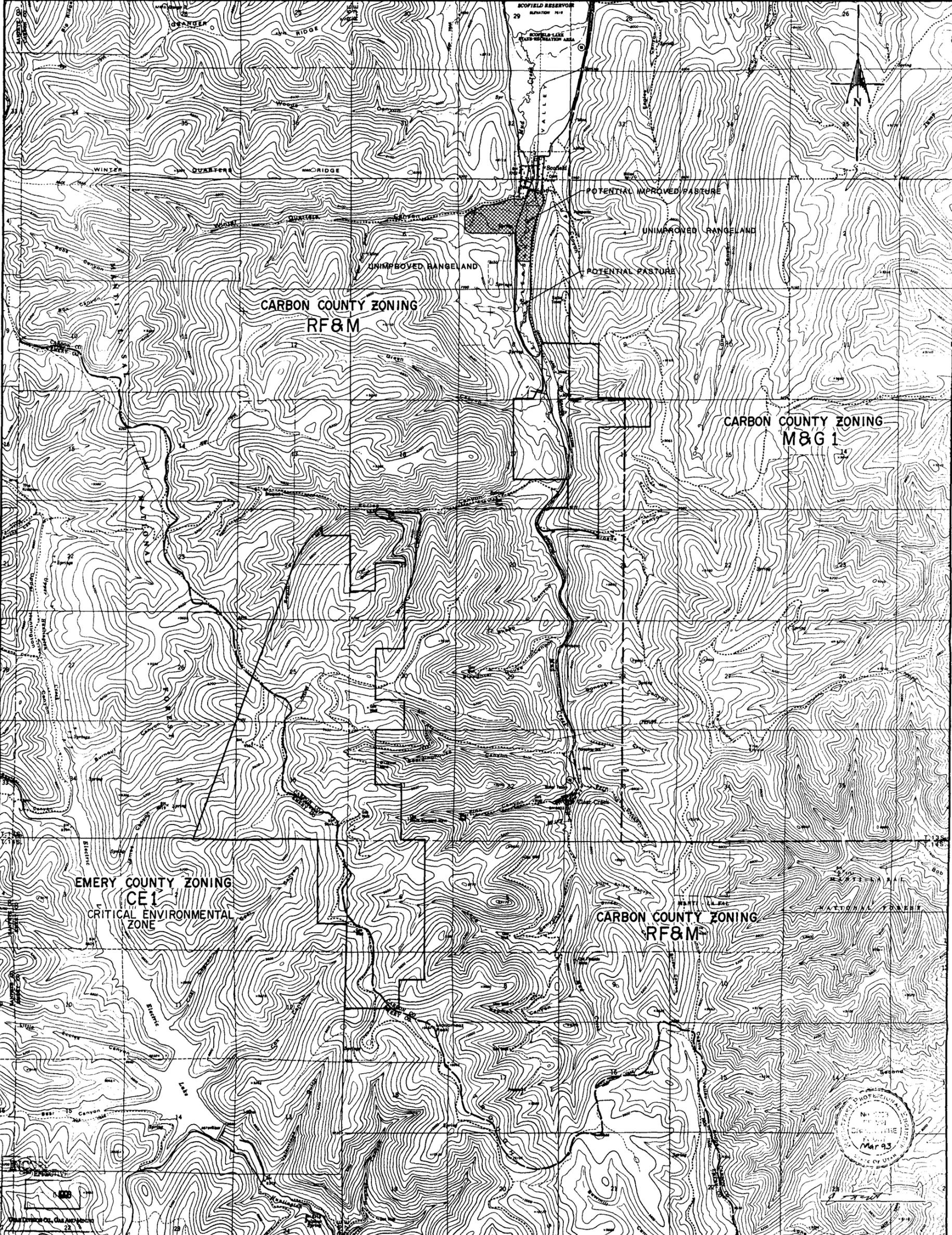
1. Conveyor hood sections will be securely positioned when transporting coal and will be maintained in good condition.
2. Conveyor head, reclaim tunnel feeder, and vibration feeder discharge chutes will be totally enclosed.
3. Conveyor skirt boards will be properly positioned when transporting coal and will be replaced as needed.
4. Stacker tube dust flaps will be replaced as needed.

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VALLEY CAMP ACT/007/001 REVISION			INCORPORATED INTO MRP BY DOGM			VALLEY CAMP ACT/007/001 REVISION			INCORPORATED INTO MRP BY DOGM			VALLEY CAMP ACT/007/001 REVISION			INCORPORATED INTO MRP BY DOGM		
NO.	DATE	DESCRIPTION	REF. NO.	DATE	INITIALS	NO.	DATE	DESCRIPTION	REF. NO.	DATE	INITIALS	NO.	DATE	DESCRIPTION	REF. NO.	DATE	INITIALS



LEGEND:

RECEIVED
MAR 5 1993
DIVISION OF
OIL GAS & MINING

VALLEY CAMP OF UTAH, INC.
SCOFIELD ROUTE, HELPER, UTAH 84526

	TITLE: R645-301-411.100. PREMINING LAND USE MAP	Drawn by: <i>Ed Sanderson</i>	Date: 12/15/89
		Approval:	Date:
	Drawing No. R645-300-411.100	Rev. 1	3/93

SAND DESIGN & GRAPHICS

SCALE: 1"=2000' SHEET 1 of 1



TABLE OF CONTENTS
ENGINEERING. R645-301-500

<u>SECTION</u>	<u>PAGE NO.</u>
500. ENGINEERING	Page 500-1 of 32
510. INTRODUCTION	Page 500-1 of 32
520. OPERATION PLAN	Page 500-7 of 32
530. OPERATIONAL DESIGN CRITERIA AND PLANS	Page 500-28 of 32
540. RECLAMATION PLAN	Page 500-32 of 32
560. PERFORMANCE STANDARDS	Page 500-32 of 32

LIST OF TABLES

<u>TABLE NO.</u>	<u>PAGE NO.</u>
525a. SUBSIDENCE REFERENCE GUIDE	Page 500-19 of 32

LIST OF MAPS

<u>MAP NO.</u>	<u>REFERENCE PAGE</u>
521.111. Pleasant Valley Mining District	Page 500-7 of 32
521.124. Valcam Loadout Facility Disturbance - Sheet 1	Page 500-8 of 32
521.124. Belina Haul Road - Lower Section Disturbance - Sheet 2	Page 500-8 of 32
521.124. Belina Haul Road - Upper Section Disturbance - Sheet 3	Page 500-8 of 32
521.124. Belina Mine Site Disturbance - Sheet 4	Page 500-8 of 32
521.141a. Belina No. 1 Mine Progress Map	Page 500-9 of 32
521.141b. Belina No. 2 Mine Progress Map	Page 500-9 of 32
521.150. Valcam Loadout Surface Facilities - Sheet 1	Page 500-9 of 32

LIST OF MAPS - (Continued)

MAP NO.

REFERENCE PAGE

521.150.	Belina Haul Road - Lower Section Surface Facilities - Sheet 2 . . .	Page 500-9 of 32
521.150.	Belina Haul Road - Upper Section Surface Facilities - Sheet 3 . . .	Page 500-9 of 32
521.150.	Belina Mine Site Surface Facilities - Sheet 4	Page 500-9 of 32
521.222.	Surface Facilities	Page 500-8 of 32

R645-301-500. ENGINEERING.

510. INTRODUCTION.

The Engineering section of the MRP is divided into the operation plan, reclamation plan, design criteria, and performance standards. All of the activities associated with the mining and reclamation operations are designed, located, constructed, maintained, and those considered reclaimed are in accordance with the operation and reclamation plan. All of the design criteria associated with the operation and reclamation plan have been met.

511. GENERAL REQUIREMENTS.

511.100. THROUGH 511.300.

The combined operation and reclamation permit packages include descriptions of the mining and reclamation operations with attendant maps, plans, and cross sections and its potential impacts to the environment as well as methods and calculations utilized to achieve compliance with design criteria and reclamation.

512. CERTIFICATIONS.

512.100. MAPS AND CROSS SECTIONS.

All maps and cross sections specified under 512.100 through 512.150 are prepared by, or under the direction of, and certified by a qualified, registered, professional engineer or land surveyor, with assistance from professionals of related fields. All maps and cross sections will be updated when necessary.

512.200. PLANS AND ENGINEERING DESIGN.

All plans and engineering designs for excess spoil, durable rock fills, coal mine waste, impoundments, primary roads and variances from approximate original contour will be certified by a qualified registered professional engineer.

512.210. EXCESS SPOIL.

The professional engineer experienced in the design of earth and rock fills will certify the design according to 535.100.

512.220. DURABLE ROCK FILLS.

The professional engineer experienced in the design of earth and rock fill will certify that the durable rock fill design will ensure the stability of the fill and meet design requirements according to 535.100 and 535.300.

512.230. COAL MINE WASTE.

The professional engineer experienced in the design of similar earth and waste structures will certify the design of the disposal facility according to 536.

512.240. IMPOUNDMENTS.

The professional engineer will use current, prudent, engineering practices and will be experienced in the design and construction of impoundments and certify the design of the impoundment according to 743.

512.250. PRIMARY ROADS.

The professional engineer will certify the design and construction or reconstruction of primary roads as meeting the requirements of 742.420.

512.260. VARIANCE FROM APPROXIMATE ORIGINAL CONTOUR.

The professional engineer will certify the design for the proposed variance from the approximate original contour, as described under 270, in conformance with professional standards established to assure the stability, drainage and configuration necessary for the intended use of the site.

513. COMPLIANCE MSHA REGULATIONS AND APPROVALS.

513.100. COAL PROCESSING WASTE DAMS OR EMBANKMENTS.

There are no coal processing waste dams or embankments constructed within the Mine Permit Area. Should coal processing waste dams or embankments become necessary compliance with MSHA, 30 CFR 77.216-1 and 77.216-2 will be met. (see 528 and 536.820).

513.200. IMPOUNDMENTS/SEDIMENT PONDS.

There are no impoundments/sediment ponds which meet the MSHA size or qualifying criteria within the Mine Permit Area. Should impoundments and sedimentation ponds meeting the size or other qualifying criteria of MSHA, 30 CFR 77.216(a) become necessary compliance with the requirements of MSHA, 30 CFR 77.216. will be met. (see 533.600, 742.222, and 742.223).

513.300. DISPOSAL OF UNDERGROUND DEVELOPMENT WASTE COAL PROCESSING WASTE OR EXCESS SPOIL.

Should it become necessary to dispose underground development waste, coal processing waste, or excess spoil in the underground mine workings, it shall be accomplished in accordance MSHA and the Division (see 528.321)

513.400. REFUSE PILES.

There are no refuse piles associated with the Mine Permit Area. In the event construction of a refuse pile(s) is necessary, the requirements of MSHA, 30 CFR 77.214 and 77.215 will be met. (see 536.900).

513.500. SURFACE OPENINGS.

Each shaft, drift adit, tunnel, exploratory hole, entry or other opening to the surface from the underground will be capped, sealed, backfilled or otherwise properly managed consistent with MSHA, 30 CFR 75.1771 (ref. to 551).

513.600. DISCHARGES INTO AN UNDERGROUND MINE.

Currently there is no discharge into the underground mine openings, nor is any planned in the future at this point in time. The underground mine openings were graded near the portal mouth so as not to allow drainage from outside the mine to flow into the mine.

There will be no discharge into the underground mine openings prior to approval by MSHA and the Division. (see 731.511.4).

513.700. SURFACE COAL MINING AND RECLAMATION ACTIVITIES. (TIMING AND SEQUENCE)

N/A

513.800. COAL MINE WASTE FIRES.

All fires (intentional or unintentional) are extinguished in accordance with MSHA Regulations by personal specifically trained in fighting coal mine fires. These people are trained according to an MSHA approved fire fighting plan.

Coal mine waste fires will be extinguished in accordance with a plan approved by MSHA and the Division (see 528.220).

Coal stockpile fires are extinguished as quickly as possible, the hot spots are removed from the stockpile, spread out and cooled with water and the coal is promptly returned to the stockpile.

514. INSPECTIONS.

All engineering inspections will be conducted by a qualified registered professional engineer or other qualified professional specialist under the direction of the qualified engineer, except as described under 514.330.

514.100. THROUGH 514.114. EXCESS SPOIL INSPECTIONS.

Monitoring of all excess spoil fill will be conducted by the qualified registered professional engineer or specialist through out the duration of the project, which includes

foundation preparation, removal of organic material and topsoil, placement of underdrains, protective filter systems, final surface drainage systems, final grading and revegetation of the fill(s).

514.120. EXCESS SPOIL CERTIFIED REPORTS.

Certified reports will be provided to the Division by the qualified registered professional engineer promptly after each inspection of the fill(s) indicating proper construction and maintenance as designed and that it is in accordance to the approved plan and R645-302 Rules. The report will include any structural instability, weakness, or hazardous condition.

514.130. EXCESS SPOIL DRAINAGE SYSTEM AND PROTECTIVE FILTERS CERTIFIED REPORTS.

514.131.

Certified reports will include color photographs during and after construction, prior to being covered with the spoil. This pertains to segmented construction as well.

514.132.

Excess durable rock spoil placed in single or multiple lifts where the underdrain system is constructed simultaneously with excess spoil placement by the natural segregation of dumped materials, in accordance with 535.300 and 745.300, color photographs will be taken of the underdrain as the underdrain system is being formed.

514.133.

Photographs will be of adequate size, scale, and number to depict the site features.

514.140. INSPECTION REPORTS.

Copies of all inspection reports will be kept at the General Office.

514.200. REFUSE PILES.

Valley Camp has not constructed any refuse piles. Should it become necessary to construct a refuse pile(s) a professional engineer or specialist experienced in the construction of similar earth and waste structures will inspect the refuse pile during construction.

514.210.

Regular inspections by the engineer or specialist will also be conducted during placement and compaction of coal mine waste materials. More frequent inspections will be conducted if a danger of harm exists to the public health and safety or the environment. Inspections will continue until the refuse pile has been finally graded and revegetated or until a later time as required by the Division.

514.220. THROUGH 514.224.

Such inspection will be made at least quarterly throughout construction and during the following critical construction periods of foundation preparation, including the removal of all organic material and topsoil, the placement of underdrains and protective filter systems, the installation of final surface drainage systems, and the final graded and revegetated facility.

514.230.

A qualified registered professional engineer will provide a certified report to the Division promptly after each inspection that the refuse pile has been constructed and maintained as designed and in accordance with the approved plan and R645 Rules. The report will include appearances of instability, structural weakness, and other hazardous conditions.

514.240.

A certified report on the drainage system and protective filters will include color photographs taken during and after construction, and before underdrains are covered with coal mine waste. If the underdrain system is constructed in phases, each phase will be certified separately. The photographs accompanying each certified report will be taken in adequate size and number with enough terrain or other physical features of the site shown to provide a relative scale to the photographs and to specifically and clearly identify the site.

514.250.

Copies of each inspection report will be retained at the General Office.

514.300. IMPOUNDMENTS.

514.310. THROUGH 514.313 CERTIFIED INSPECTIONS.

There are no impoundments which meet the MSHA requirements within the Mine Permit Area. Should it become necessary to construct such an impoundment the following will be complied with:

CERTIFIED INSPECTION

A professional engineer or specialist experienced in the construction of impoundments will inspect the construction of the impoundment and the engineer will promptly, after each inspection, provide to the Division, a certified report that the impoundment has been constructed and maintained as designed and in accordance with the approved plan and the R645 Rules. The report will include discussion of any appearances of instability, structural weakness or the other hazardous conditions, depth and elevation of any impounded waters, existing storage capacity, any existing or required monitoring procedure and instrumentation and any other aspects of the structure affecting stability.

The professional engineer or specialist experienced in the construction of impoundments will also inspect such impoundment(s) at least yearly until removal of the structure or release of the performance bond.

Impoundments, not subject to MSHA, 30 CFR 77.216, will be examined at least quarterly by a qualified person designated by the operator for appearance of structural weakness and other hazardous conditions.

514.320. WEEKLY INSPECTIONS.

WEEKLY INSPECTION

Impoundments subject to MSHA, 30 CFR 77.216 will be examined in accordance with 30 CFR 77.216-3.

514.330. QUARTERLY INSPECTIONS.

QUARTERLY INSPECTION

Other impoundments, not subject to MSHA, 30 CFR 77.216 will be monitored quarterly by a qualified person designated by the operator for appearance of structural weakness and other hazardous conditions.

515. REPORTING AND EMERGENCY PROCEDURES.

515.100.

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

515.200. IMPOUNDMENT HAZARDS.

If during an examination or inspection of an impoundment, there is a potential hazard discovered, the person(s) who have examined the impoundment will inform the Division of the finding and of the emergency procedures formulated for public protection and remedial action. If adequate procedures cannot be formulated or implemented, the Division will be notified immediately.

515.300. TEMPORARY CESSATION.

515.310. THROUGH 515.311.

During a temporary cessation, provisions of the approved permit will be carried out. All mine portals will be maintained and the surface facilities will be secured where there is no current operations.

515.320.

Should a temporary cessation of coal mining and reclamation operations of 30 days or more occur, the division will be notified by registered letter, which will contain the following required information.

1. Exact number of surface acres,
2. Horizontal and vertical extent of subsurface strata in the Mine Permit Area prior to cessation,
3. Extent and kind of reclamation of surface area which will have been accomplished, and identification of the backfilling, regrading, revegetation, environmental monitoring, portal closures and water treatment activities taking place during temporary cessation.

520. OPERATION PLAN.

521. GENERAL.

This plan includes maps, cross sections, narratives, descriptions, and calculations indicating how the relevant requirements are met. Also the permit describes and identifies the lands subject to coal mining and reclamation operations over the estimated life of the operations.

521.100. CROSS SECTIONS AND MAPS.

Cross sections and maps show all relevant information required by the Division. See the Map index.

521.110. PREVIOUSLY MINED AREAS.

521.111.

Pleasant Valley Mining District Map 521.111 shows the approximate location and extent of known workings of active, inactive, or abandoned underground mines, including mine openings to the surface within the Mine Permit Area and adjacent areas. The Pleasant Valley Mining District Map, is not intended to be certified, as only the larger mines are depicted to show general reference to the District.

MAP 521.111. Pleasant Valley Mining District

521.120. EXISTING SURFACE AND SUBSURFACE FACILITIES AND FEATURES MAPS.

521.121.

The maps show all buildings within 1000 feet of the Mine Permit Area, with identification of the current use of the buildings (see Maps 521.124 Sheets 1 through 4).

521.122.

Location of surface and subsurface man-made features within, passing through, or passing over the Mine Permit Area are depicted on Maps 521.150 Sheets 1 through 4.

MAP 521.122. Surface Facilities

521.123.

All public roads located in or within 100 feet of the Mine Permit Area are shown on Permit Area Base Map 100.

521.124.

All pertinent features of this section are exhibited on Maps 521.124 Sheet 1 through Sheet 4.

- MAP 521.124. Valcam Loadout Facility Disturbance - Sheet 1
- MAP 521.124. Belina Haul Road - Lower Section Disturbance - Sheet 2
- MAP 521.124. Belina Haul Road - Upper Section Disturbance - Sheet 3
- MAP 521.124. Belina Mine Site Disturbance - Sheet 4

521.125.

For the location of each sedimentation pond (001A through 004A) and the filter pond (005A), see 521.124.

521.130. LANDOWNERS AND RIGHT OF ENTRY AND PUBLIC INTEREST MAPS.

521.131.

All boundaries of lands and names of present owners of record of both surface and subsurface within the Mine Permit Area are shown on the Surface Ownership Map 112.500 and the Coal Ownership Map 112.600, respectively.

521.132.

The permit boundary is shown on all applicable maps.

521.133. THROUGH 521.133.2.

N/A

521.140. MINE MAPS AND PERMIT AREA MAPS.

521.141.

The boundaries of all areas affected over the estimated total life of the coal mining and reclamation operations, with size, sequence and timing of the mining of subareas for the lands to be affected. See maps 521.141a and 521.141b.

MAP 521.141a. Belina No. 1 Mine Progress Map
MAP 521.141b. Belina No. 2 Mine Progress Map

Within the Disturbed Area Boundary four types of disturbances exist and are shown on Sediment Control Facilities Maps 731.720a through 731.720d.

521.142. PLANNED SUBSIDENCE MINING METHODS.

Mining conducted at Valley Camp is accomplished utilizing the "Room and Pillar" method of mining. No other mining methods have ever been used within any of the Valley Camp mines here in Utah, nor are they planned to be used in the immediate future. Should any change be made in methods used, UDOGM will be notified.

Subsidence "Projected Draw Angles" and "Mine Plan Projection Lines" are utilized by Valley Camp to plan mining activities in conformance with the regulations as they relate to the protection of surface features in that they prevent, control, or minimize subsidence and subsidence related damage. See Maps 728.100a and 728.100b.

521.143. DISPOSAL SITES.

The only disposal site(s) to date are garbage hoppers within the Mine Permit Area.

521.150. LAND SURFACE CONFIGURATION MAPS.

Maps 521.150 Sheet 1 through Sheet 4 show Valley Camp disturbed area boundaries within the Mine Permit Area.

MAP 521.150. Valcam Loadout Surface Facilities - Sheet 1
MAP 521.150. Belina Haul Road - Lower Section Surface Facilities - Sheet 2
MAP 521.150. Belina Haul Road - Upper Section Surface Facilities - Sheet 3
MAP 521.150. Belina Mine Site Surface Facilities - Sheet 4

521.151.

All design related contour maps show contours at least 100' above and below the coal outcrop where applicable.

521.152.

The maps showing previously mined areas have contour lines at least 100' beyond the limits of mining disturbances where applicable.

The "adjacent to" previously mined areas are shown on the mine maps, but are based on historic data and were not certified by the criteria of today's standards.

521.160. MAPS AND CROSS SECTIONS OF THE PROPOSED FEATURES FOR THE PROPOSED PERMIT AREA.

521.161. THROUGH 521.169.

At this point in time no new surface features are planned.

521.170. TRANSPORTATION FACILITIES MAPS.

The transportation facilities are shown on Maps 521.124 Sheet 1 through Sheet 4.

521.200. SIGNS AND MARKERS SPECIFICATIONS.

521.210. THROUGH 521.230.

Signs and markers are posted, maintained, and will be removed by Valley Camp and are uniform design that can be readily seen and read; durable; and conform to local laws and regulations.

521.240. THROUGH 521.244. MINE AND PERMIT I.D. SIGNS.

Identification signs are displayed at each point of access to the Mine Permit Area from public roads and display name, address, phone number, and UDOGM I.D. number of the permittee. Signs will be maintained until after the release of all bonds for the Mine Permit Area.

521.250. PERIMETER MARKERS.

521.251.

All perimeter markers are clearly marked with orange markings on trees, orange or red painted "tee" posts.

521.260. BUFFER ZONE MARKERS.

521.261.

Buffer zone signs are located so as to prevent disturbance by the surface facility operations and meet the requirements of 731.600.

521.270. TOPSOIL MARKERS.

Topsoil signs are in place at the Belina Mine Site and at the Valcam Loadout Facility. The sign at Belina is 18" x 24" and reads;

BELINA MINE
TOPSOIL
STORAGE AREA
DO NOT DISTURB

522. COAL RECOVERY.

Valley Camp of Utah, Inc. operates the Belina No. 1 Mine (currently idle), and the Belina No. 2 Mine, both of which are near the head of Whisky Canyon, approximately 4.5 miles south of Scofield, Utah. Mining is currently being conducted in accordance with the Permit approved February 10, 1977, and Utah Division of Oil, Gas, and Mining Permit ACT/007/001.

The Valley Camp operation originated under the Coal Exploration and Mining Operations Rules, 30 CFR 211, which governed operations for the exploration, development, and production of coal from Federal lands in accordance with the requirements of the Mineral Leasing Act of 1920 and its amendments. In 1983 Valley Camp provided Minerals Management Service with a cross-reference index from the State regulations to the 30 CFR 211 regulations to aid in their review of the MRP. The BLM office for the Price River Resource Area approves all Valley Camp mining plans and modifications, as well as inspects the mine(s) to assure there are no detrimental effects on recoverable reserves and that Valley Camp satisfies the requirements of maximum economic recovery of the federal coal resource. Please refer to the 1984 OSM Technical Analysis, Chronology of Events, Date; February 10, 1977, Event USGS issues 211 permit for Belina #1 mine covering the existing Belina #1 mine (Upper O'Connor seam).

The Belina No. 1 Mine and the Belina No. 2 Mine are located in the Upper and Lower O'Connor Seams, respectively. Each seam ranges in thickness from 5 feet to 25 feet, with the average of each being approximately 16 feet. Also see 523. The Belina Mines are currently operating under a Mine Plan approved by the Bureau of Land Management. As part of the approval Valley Camp is required to maximize the use and conservation of the coal resource, using the best technology currently available as well as protect the integrity of the land.

The Belina Mines are surrounded by major faults and will have virtually no impact to adjacent coal reserves as outcrop entry into the coal seams are not readily available leaving shaft access as the only feasible entry into the coal seams.

523. MINING METHOD(S).

The Mine Plan calls for mining in the upper 12 feet of each coal seam. Approximately 2 feet of the upper-most coal are left in place to aid roof support. The next 10 feet (first mining) below is mined using a continuous miner. The remaining bottom coal is then extracted during the retreat (second mining) from each mining section.

Development mining techniques include a main entry system, a sub-main entry system developed off the mains, and room and pillar panels which are developed off the sub-mains. Components of each are described as follows:

- a. Main Entry System-South-Composed of 5 entries (4 intakes and 1 neutral belt line), and 3 return entries on each side.
- b. Main Entry System-West-Consists of 5 entries, 2 intakes, 2 returns and 1 neutral belt line.
- c. Sub-main systems developed using 3 entries, 1 intake, 1 neutral belt line and 1 return.
- d. Room and pillar entries consist of Multi-entries, intakes, returns, and 1 neutral belt line.
- e. Room and pillar entries (bottom coal) Mid 1989, utilizes multi-intakes, 1 neutral belt line and multi-returns.

Room and pillar mining has been the only production method employed thus far.

For safety and recovery maximization, the Upper O'Connor coal seam will be mined first in a particular location. Other mining methods which would improve utilization of the resource by increasing recovery are presently being investigated.

At present, protection of the gas lines is provided by limiting pillar extraction under these lines. The size of the restricted area of mining is determined by a 35 degree angle-of-draw from the gas lines down to the seams. It is hoped that negotiations with the gas company and Federal and State agencies will result in the assumption of a steeper angle of draw, thus increasing the recovery while providing adequate support for the gas lines.

Non-recovery areas within the Mine Permit Area are only those areas remaining between mined out sections used for ventilation barriers, property line barriers, areas where the seams are so thin that mining is uneconomical, areas where adverse mining conditions jeopardize the safety of employees and areas within a 150 foot radius of all oil and gas wells located in the Mine Permit Area (State and Federal requirements).

The current Mine Plan is described as the "Double Lift" mining method. This method utilizes a Remote Control Continuous Miner developing seven entries incorporating 60'x 60'room (X-Cuts) centers. The double lift mining will leave 18' to 20' high pillars with cross-sectional dimensions of 40'x 40'.

For further details see the Ground Control Study For Double Lift Mining Panels; August 1989; Kenneth C. Ko & Associates report in the 1993 Appendix 523 Labeled "Confidential". Copies are held at the Division office in Salt Lake City, Utah.

The current design production level is 450,000 tons per year for Belina No. 2 Mine, actual production rates are below the designed maximum capacity because of present market conditions.

The primary mining equipment includes:

Joy 12RC continuous miner
Joy 10SC shuttle cars
Long-Airdox feeder breakers

Joy 12CM continuous miners
ATS roof bolters
Mantrips

The coal is cut from the working face by a Joy 12CM or Joy RCCM miner. Joy 10SC shuttle cars transport the coal to a Long-Airdox feeder breaker, which reduces the coal to a size compatible for the belt conveyors transporting the coal to the surface stockpile, used by both mines.

A variety of loaders, ramcars, compressors, transformers, and other miscellaneous support equipment are also used underground.

Reserve calculations are based upon a five foot cutoff height due to economic and equipment constraints.

An underground reclaimer belt transports the coal from the outside stockpile to a 30 ton truck loading bin. The coal is then hauled to the Valcam Loadout Facility by a contract trucking company. The contractor utilizes bottom-dump trailers pulled in tandem, or one bottom dump trailer during inclement weather. Because of the moisture content of the product, coal dust emitted from haulage activities is not a problem. In the event coal dust does become a problem, the appropriate control measures will be taken.

Spillage is controlled by limiting the trucks to loads which will not spill over the tops of the trailers while cornering, and by instructing drivers to keep the trailer dump gates closed during return trips.

The Roof Control Plan has been approved by MSHA. Their approvals are based on specific site conditions, mining experience in the area, and geologic information available. The approved Roof Control Plan addresses size of underground openings, pillar size, roof support methods, cross-cut centers, and coal recovery methods.

The design and operation of the mines comply with accepted engineering practices, and with all regulatory requirements. Ventilation Plan, Roof control Plan, and all other MSHA required plans are on file with MSHA and in the Belina Mine Office.

523.100. SURFACE COAL MINING AND RECLAMATION (ACTIVITIES PROPOSED WITHIN 500 FEET OF AN UNDERGROUND MINE)

The Valcam Loadout Facility and the Utah No. 2 Mine (prelaw mine) now closed and sealed is in fact located within the 500 foot limitations of the old Utah No. 1, which is the oldest known mine in the Pleasant Valley Mining District. The General Office Area, Belina Haul Road, or the Belina Mines are not within the 500 foot limitations of any known abandoned underground coal mine(s).

523.200. SURFACE COAL MINING AND RECLAMATION ACTIVITIES. (CONDUCTED CLOSER THAN 500 FEET OF AN UNDERGROUND MINE.)

The Utah No. 2 Mine and the coal handling facilities (known as the Valcam Loadout Facility) are closer than 500 feet of the old Utah No. 1 Mine and are exhibited on an MSHA

Approved mine map, however the old Utah No. 1 Mine maps can not be certified by today's standards.

In the event that new mining or new reclamation activities are proposed within 500 feet of the adjacent workings of the Utah No. 1 Mine, Valley Camp will seek approval from MSHA and the Division in accordance with the requirements of this section.

524. BLASTING AND EXPLOSIVES.

Valley Camp of Utah, Inc. will not routinely utilize surface blasting for underground coal mining activities. In accordance with the requirements of this section, a blasting plan will be provided to the Division and MSHA when required. Each blasting plan will contain a description of any system to be used to monitor compliance with the standards of 524.600 including the type, capability, and sensitivity of any blast-monitoring equipment and proposed procedures and within 500 feet of active underground mines require approval of MSHA. Blasts that use more than five pounds of explosive or blasting agent will be conducted according to the schedule provided under 542.400.

524.100. BLASTERS CERTIFICATION.

Valley Camp will, prior to conducting any surface blasting operations, ensure that all surface blasting operations incident to underground coal mining in Utah will be conducted under the direction of certified blaster. Certificates of blaster certification will be carried by blasters or will be on file at the Mine Permit Area during blasting operations. A blaster and at least one other person will be present at the firing of a blast.

Persons responsible for blasting operations at a blasting site will be familiar with the blasting plan and site-specific performance standards and give on-the-job training to persons who are not certified and are assigned to the blasting crew or assist in the use of explosives.

Valley Camp has no immediate plans necessitating the use of explosives, therefore no detailed blasting plans are present in the permit. In the event blasting is required to facilitate construction or demolition, a blast design will be submitted for all blasts conducted within 1,000 feet of any building used as a dwelling, public building, school, church, or community or institutional building outside the permit area or within 500 feet of an active or abandoned underground mine (MSHA). The blast design requiring more than five pounds of explosive or agent, will be submitted for Division and MSHA approval, prior to blasting. The blast design will contain sketches of the drill and delay patterns, decking, type and amount of explosives required per blast, critical dimensions, design factors utilized to protect the public, general location map of protected structures, and meet the applicable airblast, flyrock, and ground vibration standards in 524.600.

The blast design will be prepared using accepted standard design practices and signed by a certified blaster.

524.300. PREBLASTING SURVEY.

A preblasting survey will be conducted when more than five pounds of blasting agent or explosive per blast is to be used.

As part of the preblasting survey Valley Camp will:

I. Notify, in writing, all residents or owners of dwellings or other structures located within one-half mile of the blasting site in the Mine Permit Area how to request a preblasting survey at least 30 days before initiation of blasting.

II. Any resident or owner of a dwelling or structure within one-half mile of the blasting site in the Mine Permit Area who requests a preblasting survey in writing, directly to Valley Camp of Utah, Inc. or to the Division, will have a preblast survey conducted by Valley Camp of the dwelling or structure and promptly prepare a written report of the survey. An updated survey of any additions, modifications, or renovations will be performed by Valley Camp if requested by the resident or owner.

III. Valley Camp will determine the condition of the dwelling or structure and will document any preblasting damage and other physical factors that could reasonably be affected by the blasting. Structures such as pipelines, cables, transmission lines, and cisterns, wells, and other water systems warrant special attention; however, the assessment of these structures may be limited to surface conditions and other readily available data.

IV. A written report of the survey will be signed by the person who conducted the survey. Copies of the report will be promptly provided to the Division and to the person requesting the survey. If the person requesting the survey disagrees with the contents and/or recommendations contained therein, he or she may promptly submit to both Valley Camp and the Division a detailed description of the specific areas of disagreement.

V. Any surveys requested more than ten days before the planned initiation of blasting will be completed prior to blasting.

524.400.

All blasting will be conducted between sunrise and sunset unless nighttime blasting is approved by the Division which exhibits the public will be protected from adverse noise and other impacts. The residents and local governments within one-half mile of the blasting site will receive written notification of the proposed times and locations of the blasting operation. Notice of blasting schedule may be announced weekly, but in no case less than 24 hours prior to blasting.

Unscheduled blasts will be conducted only where public or operator health and safety so requires and for emergency blasting actions. When an unscheduled surface blast incidental to the coal mining and reclamation operation occurs, the use of audible signals, will notify residents within one-half mile of the blasting site and will be recorded in the blasting records of why the unscheduled blasting was required.

524.500. BLASTING AND WARNING SIGNS, ACCESS CONTROL.

Blasting signs will read "BLASTING AREA" and be conspicuously placed along the edge of any blasting area that comes within 100 feet of any public road Right-of-Way, and at the point where any other road provides access to the blasting area. At all entrances to the Mine Permit Area from public roads or highways, signs conspicuously placed which read "WARNING! EXPLOSIVES IN USE", which clearly list and describe the meaning of the audible blast warning and all-clear signals in use, and explain the identification of blasting areas where charged holes await firing at the blasting site in the Mine Permit Area.

Warning and all-clear signals of different character or pattern that are audible within a range of one-half mile from the point of the blast will be given. Each person who resides or works regularly within one-half mile of the blast site in Mine Permit Area will be notified of the meaning of the signals as required in the blasting notification.

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

524.600. ADVERSE EFFECTS OF BLASTING.

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

Airblast Limits. Airblast will not exceed the maximum limits listed below at the location of any dwelling, public building, school, church, or community or institutional building outside the Mine Permit Area, except for those structures and facilities owned by Valley Camp as approved by the Division. Maximum Airblast Limits are as follows:

Lower Frequency Limit of Measuring System, HZ (+ or - 3dB)	Maximum Level dB
0.1 Hz or lower-flat response*	134 peak
2 Hz or lower-flat response	133 peak
6 Hz or lower-flat response	129 peak
C-weighted - slow response*	105 peak dBC

* Only when approved by the Division.

Monitoring. Periodic monitoring will be conducted to ensure compliance with the airblast standards. The Division may require airblast measurements and specify locations at which such measurements are taken. Should such monitoring be required, the measuring systems used will have an upper-end flat frequency response of at least 200 Hz.

Flyrock. Flyrock traveling in the air or along the ground will not be cast from the blasting site - more than one-half the distance to the nearest dwelling or other occupied structure; beyond the area of blasting access control or beyond the Mine Permit Area Boundary.

Ground Vibration. In all blasting operations, except as otherwise authorized by the Division, the maximum ground vibration will not exceed the values approved by the Division. The maximum ground vibration for protected structures will be in accordance with the maximum peak-particle-velocity limits, the scaled-distance equation, the blasting-level chart, or by the Division. All other structures in the vicinity of the blasting area such as water towers, pipelines and other utilities, tunnels, dams, impoundments, and underground mines will be protected from damage by establishment of a maximum allowable limit on the ground vibration. These limits will be submitted by Valley Camp and approved by the division prior to blasting.

Maximum Peak-Particle Velocity. The maximum ground vibration will not exceed the following limits at the location of any dwelling, public building, school, church, or community or institutional building outside the Mine Permit Area in accordance with the following:

EXPLOSIVES

Distance (D) from Blast Site (ft)	Maximum allowable Particle Velocity (Vmax) for ground vibration (in/second)*	Scaled distance factor to be applied without seismic monitoring** (Ds)
0 to 300	1.25	50
301 to 5,000	1.00	55
5,001 and beyond	0.75	65

* Ground vibration will be measured as the particle velocity. Particle velocity will be recorded in three mutually perpendicular directions. The maximum allowable peak particle will apply to each of the three measurements.

** Applicable in the scaled-distance equation of $524.651 A$ A seismographic record will be provided for each blast.

Scaled-distance equation. Valley Camp may use the scaled-distance equation, $W=(d/D_s)^{**}$, to determine the allowable charge weight of explosives to be detonated in any eight-millisecond period, without seismic monitoring: where W=the maximum weight of explosives, in pounds; D=the distance, in feet, from the blasting site to the nearest protected structure; and D_s =the scaled-distance factor, which may initially be approved by the division using the values for scaled-distance factor.

The development of a modified scaled-distance factor, may be authorized by the Division on receipt of a written request by Valley Camp, supported by seismographic records of blasting at the mine site. The modified scaled-distance factor of the predicted ground vibration will not exceed the prescribed maximum allowable peak particle velocity at a 95-percent confidence level.

Blasting-Level-Chart. The ground-vibration limits may be used to determine the maximum allowable ground vibration. A seismographic record including both particle velocity and vibration-frequency levels will be provided for each blast. The method for the analysis of the predominant frequency contained in the blasting records will be submitted by Valley Camp and approved by the Division prior to application of this alternative blasting criterion.

The maximum airblast and ground-vibration standards shown above will not apply at the following locations: At structures owned by Valley Camp and not leased to another person; and at structures owned by Valley Camp and leased to another person, if a written waiver by the lessee is submitted to the Division prior to blasting.

524.700 RECORDS OF BLASTING OPERATIONS.

Blasting records will be maintained at the General Office for at least three years and upon request, blasting records will be available for inspection by the Division or the public. Blasting records will contain a record, including: the name of mining company or other authorized contractor conducting the blast; location, date, and time of the blast; name, signature, and certification number of the blaster conducting the blast; his assistant's name, identification, direction, and distance, in feet, from the nearest blast hole to the nearest dwelling, public building, school, church, community or institutional building outside the Mine Permit Area, except those structures and facilities owned by Valley Camp; and, weather conditions, including those which may cause possible adverse blasting effects.

The record of the blast will include: The type of material blasted; sketches of the blast pattern including number of holes, burden, spacing, decks, and delay pattern; diameter and depth of holes; types of explosives used; total weight of explosives used per hole; the maximum weight of explosives detonated in an eight-millisecond period; initiation system; type and length of stemming; and, mats or other protection used.

If required, the record of seismographic and airblast information will include: type of instrument, sensitivity, and calibration signal or certification of annual calibration; exact location of instrument and the date, time, and distance from the blast; name of the person and firm taking the reading, name of the person and firm analyzing the seismographic record; the vibration and/or airblast level recorded; and, the reasons and conditions for each unscheduled blast.

524.800.

Valley Camp will comply with all appropriate Utah and federal laws and regulations in the use of explosives.

525. THROUGH 525.300. SUBSIDENCE.

It is the desire and intent of this section to summarize issues related to subsidence as required under the regulations. In order to accomplish this, the majority of subsidence issues as they pertain to control and monitoring are outlined and discussed within this section. Subsidence related issues dealing with the effects of subsidence are found within Section 728 along with the discussion of probable hydrologic consequences. Other minor references to subsidence found throughout the permit are discussed briefly at the point of reference, however, where possible, the major discussion dealing with the issue has been condensed within either Section 525 or within the 1993 Appendix 724.600. The following reference guide has been prepared to document which sections of the permit contain the specifics of subsidence.

**TABLE 525a.
SUBSIDENCE REFERENCE GUIDE.**

REFERENCED SECTION	SECTION CONTENT
222 through 223	Soils Presubsidence Survey
321	Vegetation Presubsidence Survey
322	Fish and Wildlife Presubsidence Survey
522 through 523	Coal Recovery and Mining Methods
525	Control, Monitoring, & Mitigation Plan
728	Probable Hydrologic Consequences

SUBSIDENCE CONTROL PLAN

The forest land is classed as a renewable resource, and as such, will be afforded subsidence protection as outlined within this permit in order to ensure future productivity of the forest and at the same time maximize the use of the natural coal resources of the area as required under 522. Steps being taken by Valley Camp to maximize this resource while controlling the limits and effects of subsidence include the following:

- Valley Camp coal recovery operations currently utilize the "Room and Pillar" method of mining. This mining method has historically been the method showing the least amount of overall subsidence to surface features, and as discussed under regulation 525.210,

Valley Camp has opted not to adopt other methods of mining at this point in time in lieu of the "Room and Pillar" method.

- Mining within the Valley Camp permit area is conducted in a manner to attempt to follow the overall mining projections shown on mining maps contained within the permit. The extent of mining is controlled by faulting and by the angle of draw from identified surface features such as existing gas lines, etc.. The approved MMS plan calls for an angle-of-draw of 35 degrees for limited extraction. If at any future time monitoring indicates a different angle-of-draw, the plan will be modified.
- As per the report entitled "Subsidence Potential over Two-Seam Developments" prepared in March 1991 by Kenneth C. Ko & Associates, Inc., (and found within the 523 section of the 1993 Appendix) Valley Camp has the intention of maintaining a standard overburden of at least 200 feet. This overburden was identified as the minimum amount required to protect against "Plug" type subsidence under full seam recovery.
- A buffer zone of at least 150 feet is left around natural gas wells located within the mine area. According to information obtained from consultants and our understanding of local angle of draw characteristics, subsidence should not damage the wells.

The Subsidence Base Maps 728.100a and 728.100b show angle of draw, survey monument information, gas line locations, power lines and other pertinent surface features related to subsidence.

In 1987, the Manti-Lasal National Forest USDA withdrew from the subsidence monitoring program, and in 1988 Valley Camp committed to conduct annual aerial surveys in an effort to monitor subsidence. In response to that commitment, both the aerial survey and the pedestrian survey were completed during the summer of 1988 and 1989. The aerial surveys completed proved unable to produce data which could be utilized for the construction of a Subsidence Map because of heavy forestation which is characteristic of currently subsided areas. The pedestrian survey, in coordination with a differential level survey of subsided areas utilizing rebar monuments, has proved to be the most reliable source for the identification of surface disturbance. The pedestrian survey have been conducted annually since 1982 by Hansen, Allen & Luce, Inc. and the controlled survey has been completed by Bruce T. S. Ware. Data recorded as part of these surveys is documented on Maps 728.100a and 728.100b.

As part of the monitoring plan the following conditions will be met by Valley Camp:

- One copy of the Subsidence Map and data will be submitted to the Division each year. The subsidence map and data will be part of the annual subsidence report which will be prepared and submitted to the Division within the first quarter of the following year.
- The Subsidence Monitoring Plan will continue for at least five years following reclamation of the mined area. Concurrence of all involved parties would be necessary for any additional annual monitoring for subsidence.

SUBSIDENCE MITIGATION PLAN

It is understood and expected that some subsidence will occur within the Valley Camp permit area as has occurred historically. Continued monitoring of subsidence as described in the preceding section will verify that subsidence is occurring as planned, and within the areas designated on Map 728.100a. Should monitoring discover that subsidence has occurred, the following steps to mitigation will be implemented.

- Should material damage be incurred to the natural gas pipelines located within the permit area, despite the approved subsidence damage prevention measures, will be either 1) to repair the damage to the pipelines caused by subsidence from the applicant's mining activities, or 2) to compensate the owner of the pipeline for such damage according to the value of the damaged section of the pipeline at the time that damages occurred.
- Any roads within the mine permit area which are materially damaged by subsidence will be repaired and re-graded to restore them to presubsidence usefulness.
- The operator will restore to the extent physically and economically feasible the original stream channels of intermittent and perennial streams within the permit area that may be disturbed by underground coal mining activities, including surface subsidence effects.
- Water resources impacted by subsidence will be mitigated according to the plan included within Section 728 including the following actions.
 1. Private contractors living within the district could be retained to haul water to specific locations from applicant owned sources within Pleasant Valley.
 2. The affected water right could be purchased by the applicant.
 3. The applicant has two wells within the Mine Permit Area which could be utilized to supply supplemental amounts of water for both private or industrial use.
 4. The applicant could initiate an exchange of water right with the State Engineer to exchange water owned by the applicant in Scofield Reservoir for water currently found at any one of the other 71 springs found within or adjacent to the Mine Permit Area for which water rights have not been filed. This option would in most cases be acceptable to the State Engineer if it could be shown that the spring upon which water is being filed is not critical to downstream rights between the spring and Scofield Reservoir.

526. MINE FACILITIES.

All structures are in compliance with the requirements of R645-301, and the designs and any modifications to the structures were accomplished in a professional manner.

The mine structures and supporting facilities listed below are shown on the 521.124 "As Built" 100 Scale Maps, Sheet 1 through Sheet 4.