SCOTT M MATHESON
GOVERNOR

STATE OF UTAH
DEPARTMENT OF COMMUNITY AND
ECONOMIC DEVELOPMENT

Division of
State History
(UTAH STATE HISTORICAL SOCIETY)

MELVIN T. SMITH, DIRECTOR
300 RIO GRANDE
SALT LAKE CITY, UTAH 84101
TELEPHONE 801 / 533-5755

August 3, 1982

Jim Smith
Attn: Sally Keefer
Division of Oil, Gas, and Mining
1588 West North Temple
Salt Lake City, Utah 84116

RE: Sage Point-Dugout Canyon Mine Plan

Dear Ms. Keefer:

In reference to a mitigation plan for the Sage Point-Dugout Mine, the Office of Surface Mining has forwarded a letter dated June 18, 1982, which your office has, requesting concurrence with the determination of no adverse effect if the proper mitigation plan is presented in the context of the two stipulations outlined by the Office of Surface Mining.

Our office had believed that there was a mitigation plan submitted for the Sage Point-Dugout Canyon Mine and has not seen any review of that mitigation plan by the Office of Surface Mining. It is apparent from their letter that they are requesting either an update of the mitigation plan or a new mitigation plan to be submitted by the owners of the Sage Point-Dugout Canyon Mine. Our office is available for consultation on determination of no adverse effect.

The above is provided on request as information or assistance. We make no regulatory requirement, since that responsibility rests with the federal agency official. However, if you have questions or need additional assistance, please let us know. Contact Jim Dykman at 533-7039.

Sincerely,

Melvin T. Smith
Director and
State Historic Preservation Officer

JLD:jr:B969/4179c

State History Board Milton C. Abrams, Chairman • Theron H. Luke • Ted J. Warner • Elizabeth Montague • Thomas G. Alexander
Dello G. Dayton • Wayne K. [illegible] • [illegible]

CC Joe SL
FILE 007/009

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
1860 LINCOLN STREET
DENVER, COLORADO 80295-0699

JUN 23 1982

FINDING OF NO SIGNIFICANT IMPACT

To All Interested Government Agencies and Public Groups:

As required by the EPA Regulation, "Preparation of Environmental Impact Statements for New Source NPDES Permits" (40 CFR 6.900), an environmental review has been performed on the proposed EPA action below:

Applicant:	Sunoco Energy Development Company
Location:	Carbon County, Utah
EPA Action:	Issuance of a New Source NPDES water discharge permit
Application No:	UT-0024031

Sunoco Energy Development Company has proposed to construct and operate four underground coal mines in Carbon County, Utah. The anticipated production of coal at full capacity is 5,220,000 tons per year. The mines will employ approximately 1,800 people.

Facilities proposed to be developed include:

- four independent underground mines with portal facilities
- office and warehouse facilities
- conveyors
- coal preparation plant
- waste rock disposal areas
- raw coal storage areas
- diversion structures
- sediment ponds
- roads
- loadout facility

Approximately 446 acres of land will be disturbed by construction and operation of the facility. Some wildlife and vegetation habitats will be destroyed. Local topography will be permanently altered. Emissions and water discharges will meet New Source Performance Standards determined for this industrial category.

The review process indicated that no significant environmental impacts are expected from the proposed facilities. A site-specific analysis of this project (then called the Sage Point-Dugout Canyon Project) was contained in a final environmental impact statement, Development of Coal Resources in Central Utah, prepared under the leadership of the U.S. Geological Survey in 1979.

The decision has been made on the basis of a careful review of the environmental information and other supporting data which are on file in the office listed below and are available for public scrutiny upon request. This Agency will not take any administrative action on the project for at least 30 days from the above date.

Written comments on this decision may be submitted for consideration by EPA. Comments should be addressed to:

Samuel Berman
Chief, State Programs Management Branch
Environmental Protection Agency
Region VIII
1860 Lincoln Street
Denver, Colorado 80295

Steven J. Durham
Regional Administrator

file copy
Copy for Lee, Sally, Sue

state of utah

DIVISION OF WILDLIFE RESOURCES

EQUAL OPPORTUNITY EMPLOYER

DOUGLAS F. DAY
Director

1596 West North Temple/Salt Lake City, Utah 84116/801-533-9333

August 31, 1981

Mr. Cleon B. Feight, Director
Division of Oil, Gas and Mining
1588 West North Temple
Salt Lake City, Utah 84116

Attention: James Smith

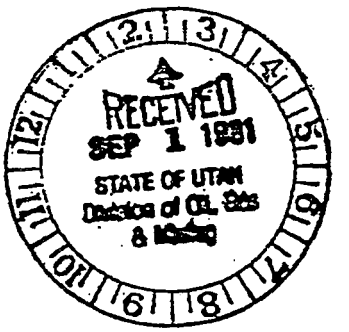
Dear Cleon:

We have reviewed the Addendum to the Mining and Reclamation Plan (MRP) for Eureka Energy Company's Sagepoint-Dugout Canyon mining project. Many of our comments on the original MRP are noted and the response is satisfactory. Some comments are not noted in the Addendum but nearly all of these are of a minor nature or, hopefully, will be answered as the ongoing "Deer-Mining Study" progresses. This study is being conducted in conjunction with this mining project, and we are hopeful that changes will be accepted in the operation if warranted by study results.

The Addendum addresses the most significant concerns we had and so we have no further comments.

Sincerely,

Douglas F. Day
Director



GOVERNOR
Scott M. Matheson

DEPT. OF NATURAL RESOURCES
Gordon E. Harmston
Exec. Director

WILDLIFE BOARD
Roy L. Young — Chairman
Lewis C. Smith
L. S. Skaggs
Warren T. Harward
Chris P. Jouflas

STATE OF UTAH

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF WATER RIGHTS

DEE C. HANSEN
STATE ENGINEER

EARL M. STAKER
DEPUTY

200 EMPIRE BUILDING
231 EAST 400 SOUTH
SALT LAKE CITY, UTAH 84111
(801) 533-6071

DIRECTING ENGINEERS
HAROLD D. DONALDSON
DONALD C. NORSETH
STANLEY GREEN
ROBERT L. MORGAN

January 5, 1981

Mr. James W. Smith, Jr.
Coordinator of Mined Land and Development
Utah Division of Oil, Gas and Mining
1588 West North Temple
Salt Lake City, Utah 84116

Re: Eureka Energy Company, Sage Point-Dugout Canyon Project, Carbon County, Utah

Dear Mr. Smith:

This office has completed its review of the water impounding structures associated with the above mentioned project. This letter will serve as approval for the small sedimentation structures associated with the portal areas, the central facilities, and the disposal sites (Saddle Valley, Boot Valley, Fish Creek, and Dugout Canyon). These structures are small and do not threaten life or property. The sewage lagoons do not have any drainage areas plus they do not threaten life or property. No approval will be required from this office on the lagoons. Approval for Anderson Dam and Dugout Dam cannot be given at this time. These are larger structures and the following are required:

1. An approved water right for both structures.

2. Construction plans and specifications.

3. A design report which includes data on:

   a. Hydraulics
   b. Hydrology
   c. Foundation Conditions
   d. Embankment Materials
   e. Concrete Structures
   f. Foundation Treatment
   g. Drainage and Seepage Control

OIL, GAS & MINING

I would also request plans for the diversion structures. If you have any questions, please feel free to call me or Mr. Bob Morgan of my staff.

Sincerely,

Dee C. Hansen

Dee C. Hansen, P.E.
State Engineer

DCH:RLM:sn

cc: Price Office

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATER RIGHTS

DEE C. HANSEN
STATE ENGINEER

EARL M. STAKER
DEPUTY

1636 West North Temple
~~200 EMPIRE BUILDING~~
~~231 EAST 400 SOUTH~~
SALT LAKE CITY, UTAH ~~84111~~ 84116
(801) 533-6071

DIRECTING ENGINEERS
HAROLD D. DONALDSON
DONALD C. NORSETH
STANLEY GREEN
ROBERT L. MORGAN

DIVISION OF OIL, GAS & MINING

JIM

SEP 0 9 1981

September 4, 1981

Mr. James W. Smith, Jr.
Utah Division of Oil, Gas, and Mining
1588 West North Temple
Salt Lake City, Utah 84116

RE: Eureka Energy Corp. ACR
Sage Point-Dugout Canyon
ACT/007/009
Carbon County, Utah

Dear Mr. Smith:

This office has completed its review of the Mining and Reclamation Plan Addendum. We find no reasons to alter our previous approval of the sedimentation ponds. As soon as the construction drawings and specifications for the large dam are submitted, we will start our review and approval process.

If you have any questions, please feel free to contact Bob Morgan of my staff.

Sincerely,

Dee C. Hansen

Dee C. Hansen, P. E.
State Engineer

DCH/RLM/cpm

cc: Price Area Office
Eureka Energy Corp.

. M. Matheson
Governor

James O. Mason, M.D., Dr.P.H.
Executive Director
801-533-6111

DIVISIONS
Community Health Services
Environmental Health
Family Health Services
Health Care Financing and Standards

OFFICES
Administrative Services
Health Planning and Policy Development
Medical Examiner
State Health Laboratory

STATE OF UTAH
DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
150 West North Temple, P.O. Box 2500, Salt Lake City, Utah 84110

533-6146
February 5, 1981

Alvin E. Rickers, Director
Room 426 801-533-6121

MEMORANDUM

TO: Dennis R. Dalley, Associate Deputy Director DRD
Division of Environmental Health

THROUGH: Don A. Ostler, P.E., Chief DAO
Engineering & Construction Grants Section
Bureau of Water Pollution Control

FROM: Steven R. McNeal SRM
Public Health Engineer
Bureau of Water Pollution Control

SUBJECT: Eureka Energy Company, SMCRA Permit Application

I have reviewed the December 1980 Eureka Company Sage Point-Dugout Canyon Project Surface Mining Control and Reclamation Act Permit Application. This application discusses the conceptional location of a total containment lagoon for sanitary wastes and sediment ponds for each of the mine waste rock and central facility locations.

The locations of these wastewater facilities appear acceptable provided the soil conditions and groundwater conditions meet the requirements of the Utah Wastewater Disposal Regulations. Further information should be submitted so that a construction permit can be issued within a year of the commencement of continuous construction. For the sanitary system the information should include sewerline details, soil conditions to a depth of 4 feet below the lagoon bottom, maximum groundwater level, seepage rate, design parameters, plans, compaction specifications, etc.

Where possible, the sediment ponds should be designed to provide three feet of settling between the sediment level and a baffled outlet. Outlet baffles should not be perforated on the pond side. Soil conditions, seepage rate and compaction specifications will also need to be submitted for the sediment control ponds.

laf

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Scott M. Matheson
Governor

James O. Mason, M.D., Dr.P.H.
Executive Director
801-533-6111

DIVISIONS
Community Health Services
Environmental Health
Family Health Services
Health Care Financing and Standards

OFFICES
Administrative Services
Health Planning and Policy Development
Medical Examiner
State Health Laboratory

STATE OF UT.
DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
150 West North Temple, P.O. Box 2500, Salt Lake City, Utah 84110
533-6108

May 18, 1981

Alvin E. Rickers, Director
Room 426 801-533-6121

MAY 20

DIVISION OF
OIL, GAS & MINING

Nicolas K. Temnikov
Eureka Energy Company
77 Beale Street
San Francisco, CA 94106

Re: Air Quality Approval Order for Construction and Operation of Sage Point-Dugout Canyon Coal Mine Project

Dear Mr. Temnikov:

On April 13, 1981 the Executive Secretary published a notice of intent to approve your portal construction and surface operations for two coal mines in Fish Creek Canyon and two in Dugout Canyon in Carbon County. The 30-day public comment period expired May 12, 1981 and no comments were received.

This air quality approval order authorizes the surface operations as proposed in your notice of intent dated January 2, 1981 with the following conditions:

1. All emission control equipment shall be maintained in good operating condition and control procedures shall be performed as proposed.

2. Visible emissions from point sources shall not exceed 20% opacity as per Section 4.1.2, Utah Air Conservation Regulations (UACR). Emissions from diesel engines shall not exceed 20% opacity except for starting motion no farther than 100 yards or for stationary operation not exceeding 3 minutes in any hour as per Section 4.1.4, UACR.

3. Total annual production of coal from the four mines shall not exceed 5,200,000 tons without prior approval from the Executive Secretary per Section 3.1, UACR.

4. All conveyors shall be enclosed and water sprays shall be operated at all transfer points including transfers to other conveyors, storage piles and into a surge bin. The spray system shall utilize a wetting agent to the water for minimizing fugitive emissions as proposed.

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5. The unpaved sections of roadway shall be water sprayed to minimize fugitive dusts as dry conditions warrant or as determined necessary by the Executive Secretary. A record/log of treatments to include date, amount and treatment location shall be kept and made available to the Executive Secretary upon request.

6. The stack from each baghouse controlling emissions from the crusher, centrifuges and preparation plant conveyors shall be stack tested using EPA test methods 1-5 within 180 days after this approval date. The exhaust from each stack shall not exceed 0.02 gr/dscf. The Executive Secretary shall be contacted for technical input at least thirty days prior to the test(s) and State personnel shall be present for the test(s).

7. The rotary breaker in the preparation plant shall be controlled with water sprays with additives to minimize fugitive emissions.

8. The Executive Secretary shall be notified when start-up occurs as an initial compliance inspection is required.

As per Section 3.9, Utah Air Conservation Regulations, a fee for the cost associated with the processing of this approval order must be paid to the State of Utah upon receipt of this order. Enclosed is an itemized bill.

Sincerely,

Brent C. Bradford
Executive Secretary
Utah Air Conservation Committee

MRK:js

Enclosure

cc: Southeastern Dist. Health Dept.
EPA/Region VIII (N. Huey)
Div. of Oil, Gas & Mining (J. Smith)

Scott M. Matheson
Governor

James O. Mason, M.D., Dr.P.H.
Executive Director
801-533-6111

DIVISIONS
Community Health Services
Environmental Health
Family Health Services
Health Care Financing and Standards

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Medical Examiner
State Health Laboratory

STATE OF UTAH
DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
150 West North Temple, P.O. Box 2500, Salt Lake City, Utah 84110

Alvin E. Rickers, Director
Room 426 801-533-6121

533-6108

June 9, 1981

Nicolas Temnikov
Eureka Energy Company
77 Beale Street
San Francisco, CA 94106

Re: Air Quality Approval Order for Construction and Operation of Sage Point-Dugout Canyon Mine Dated May 18, 1981

Dear Mr. Temnikov:

Condition No. 6 of your air quality approval order is amended to read as follows:

> "The stack from each baghouse controlling emissions from the crusher, centrifuges and preparation plant conveyors shall be stack tested using EPA test methods 1-5 within 180 days after startup. The exhaust from each stack shall not exceed .02 grains/dscf. The Executive Secretary shall be contacted for technical input at least thirty days prior to the test(s) and State personnel shall be present for the test(s)".

Enclosed you will find a copy of the additional road emissions which you submitted on June 5, 1981. The additional 2.93 ton/yr will not affect your permit conditions. Please be reminded, however, that these additional roads must also be controlled with water spraying as per condition No. 5.

Sincerely,

for Burnell Cordner
Brent C. Bradford
Executive Secretary
Utah Air Conservation Committee

DR:il

cc: Southeastern District Health Dept.
EPA/Region VIII (N. Huey)
Div. of Oil, Gas & Mining (J. Smith)

Enclosure

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File ACT/007/0
Copy to Sally
See Mar 2.
JIM

Scott M. Matheson
Governor

James O. Mason, M.D., Dr.P.H.
Executive Director
801-533-6111

DIVISIONS
Community Health Services
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STATE OF UTAH
DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
150 West North Temple, P.O. Box 2500, Salt Lake City, Utah 84110

Alvin E. Rickers, Director
Room 474 801-533-6121

FEB 03 1982

January 26, 1982

RECEIVED
FEB 02 1982
DIVISION OF
OIL, GAS & MINING

James W. Smith, Jr.
Coordinator of Mined Land Development
Division of Oil, Gas & Mining
4241 State Office Building
Salt Lake City, Utah 84114

Re: Sage Point-Dugout Canyon Mine
Eureka Energy Company
Carbon County

Dear Mr. Smith:

In reviewing the information submitted in conjunction with the above referenced project, it appears that a public water supply system is being proposed to be developed to supply the mining facilities. Comments contained in this information indicates the company anticipates developing a surface water source to meet the culinary water demands for its employees. However, because the information submitted contained no plans or specifications, an engineering assessment is not possible.

Also, we still have not received detailed plans of the sanitary system and sediment ponds as indicated in our memo of February 5, 1981. This was attached to our letter to you of March 10, 1981.

Sincerely,

Dennis R. Dalley

Dennis R. Dalley
Assistant Director

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SCOTT M. MATHESON
GOVERNOR

STATE OF UTAH
DEPARTMENT OF COMMUNITY AND
ECONOMIC DEVELOPMENT

COMMUNITY DEVELOPMENT DIVISION

6233 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH 84114
(801) 533-4054

May 19, 1983

Ms. Shirley Lindsay, Project Leader
Sunedco-SP/DC Mine
U.S. Dept. of Interior
Office of Surface Mining
1020 - 15th Street
Denver, CO 80202

Dear Ms. Lindsay:

I would like to confirm our agreement with a draft stipulation to be included in the mine permit for the Sunedco Sage Point Mine. The stipulation, originally drafted by Sunedco and OSM, reads as follows:

> "The applicant shall comply with all applicable federal, state and local laws, rules and regulations which impose duties with regard to socioeconomic analyses and/or mitigation plans that are required to be submitted prior to project construction.
>
> Such analyses and plans shall be developed and implemented in consultation with affected local governments, the Utah State Department of Community and Economic Development, The Utah State Division of Oil, Gas and Mining, and OSM."

You will note that we have added the Utah Division of Oil, Gas and Mining as one of the consulting agencies with which socioeconomic analyses and mitigation plans shall be developed and implemented.

We suppport the stipulation, as modified above, and very much appreciate OSM's cooperation on this matter.

I would like to add that we have enjoyed an excellent working relationship with Sunedco in preparing for their proposed mine. We are following a mutually agreed upon process of analyzing impacts, reaching agreement on methods, assumptions, and analytical conclusions and negotiation of mitigation agreements. Although we are still working through this process, I believe Sunedco is proceding in good faith and anticipate a mutually agreeable and amicable conclusion to our efforts.

Once again, we very much appreciate your cooperation and assistance.

Sincerely,

Buzz Hunt

BH:aw

CARBON COUNTY
PRICE, UTAH 84501

June 20, 1983

JUN 1983
RECEIVED
USDI - OSM

Shirley Lindsay
Project Leader, Sunedco, Sage Point Mine
Office of Surface Mining
Brooks Towers
1020 15th St.
Denver, Colo. 80202

Dear Ms. Lindsay,

Carbon County wishes to express our approval of the Sunedco stipulation statement drafted by Sunedco and your staff. We feel that this particular project does not technically fit into the local planning process because of the way our ordinance is written. Therefore we are glad that your office has required that the Sunedco officials work closely with the local governments as far as socio-economic impacts are concerned. We would like to further stress that before construction is allowed to begin a Carbon County sign off letter be obtained stating that we feel comfortable with the mitigation plan which has developed and subsequent efforts to implement it.

The original socio-economic impact analysis which was done by Sunedco was a very good document, better than most which we have seen. However, it did have problems and we would like to see a mitigation plan based on some modified assumptions other than those presented in the original analysis. We have met with Sunedco in our planning and zoning commission and we agreed that the mitigation plan will really be the most important document because it will outline exactly what the company is willing to do to assist us in planning and providing for the Sunedco work force.

We hope we can continue the excellent dialogue we have had with your office into the future especially as it relates to impacts extremely important to our local governments.

Sincerely,

Richard E. Walker

Richard E. Walker
County Planner

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF SURFACE MINING

This permit, UT0041 which incorporates Utah Permit ACT/007/009, is issued for the United States of America by the Office of Surface Mining (OSM) to

Sunedco Coal Company
7401 W. Mansfield Avenue
P.O. Box 35
Lakewood, Colorado 80235

for the Sage Point - Dugout Canyon mine. Sunoco Energy Development Company is the lessee of Federal Coal Leases U-07746; U-092147; U-0144820; U-07064-027821. The permit is not valid until a performance bond is filed with the OSM in the amount of $611,875.00, payable to the United States of America and the State of Utah, and the OSM has received a copy of this permit signed and dated by the permittee.

Sec. 1 STATUTES AND REGULATIONS - This permit is issued pursuant to the Surface Mining Control and Reclamation Act of 1977, 30 U.S.C. 1201 et seq., hereafter referred to as SMCRA, and the Federal coal leases issued pursuant to the Mineral Leasing Act of February 15, 1920, as amended, 30 U.S.C. 181 et seq., the Federal Coal Leasing Amendments Act of 1976, as amended 30 U.S.C. 201 et seq. and in the case of acquired lands, the Mineral Leasing Act for Acquired Lands of September 7, 1947, as amended, 30 U.S.C. 351 et seq. This permit is also subject to all regulations of the Secretary of the Interior including, but not limited to, 30 CFR Chapter VII and 43 CFR 3400, and to all regulations of the Secretary of Energy promulgated pursuant to Section 302 of the Department of Energy Organization Act of 1977, 42 U.S.C. 7152, which are now in force or, except as expressly limited herein, hereafter in force, and all such regulations are made a part hereof.

Sec. 2 The permittee is authorized to conduct surface coal mining and reclamation operations on the following described Federal lands (as shown on ownership map) within the permit area at the Sage Point - Dugout Canyon situated in the State of Utah, Carbon County, and located:

T. 13. S., R. 12. E., Salt Lake Meridian; sec. 9, S1/2 SE1/4; sec. 10, S1/2; sec. 11, S1/2; sec. 14, All; sec. 15, All; sec. 16, E1/2; sec. 21, NE1/4; sec. 22, N1/2, SE1/4, N1/2 SW1/4, SE1/4 SE1/4 SW1/4, E1/2 NE1/4 SE1/4 SW1/4, E1/2 SW1/4 SE1/4 SW1/4; sec. 23, N1/2, SE1/4, N1/2 SW1/4; sec. 26, N1/2 NE1/4; sec. 27, NW1/4, NW1/4 NE1/4, N1/2 SW1/4, N1/2 S1/2 SW1/4; sec. 28, S1/2 N1/2 NE1/4, S1/2 NE1/4, S1/2 NE1/4 NW1/4, SE1/4 NW1/4 NW1/4, S1/2 NW1/4, NE1/4 NE1/4 SW1/4, N1/2 N1/2 SE1/4.

Road (County): T. 14. S., R. 11. E., Salt Lake Meridian; sec. 24, commence at Soldier Ck Rd SE1/4, SW1/4 NW1/4 thence thru sec. 3 and thru T. 14. S, R. 12. E., Salt Lake Meridian sections: 18, 17, 8, 5, 4, 3, and thence thru T. 13. S., R. 12. E., Salt Lake Meridian; sec. 34; and ending in sec. 27, SW1/4 SE1/4 SW1/4; for a distance of 7 miles with 100-foot width;

and to conduct surface and reclamation operations connected with mining on the foregoing described property subject to the conditions of the leases, the approved mining plan, and Utah State permit ACT/007/009, to be issued February 1984, including all conditions, and all other applicable conditions, laws and regulations.

Sec. 3 This permit is issued for a term of 5 years commencing on the date the permit is signed by the permittee, except that this permit will terminate if the permittee has not begun the surface coal mining and reclamation operations covered herein within 3 years of the date of issuance.

Sec. 4 The permit rights may not be transferred, assigned, or sold without the approval of the Director, OSM. Request for transfer, assignment, or sale of permit rights must be done in accordance with 30 CFR 740.13(e).

Sec. 5 The permittee shall allow the authorized representatives of the Secretary, including, but not limited to, inspectors, fee compliance officers, and the Utah Division of Oil, Gas and Mining without advance notice or a search warrant, upon presentation of appropriate credentials, and without delay to:

a. Have the rights of entry provided for in 30 CFR 840.12 and 842.13; and

b. Be accompanied by private persons for the purpose of conducting an inspection in accordance with 30 CFR 842, when the inspection is in response to an alleged violation reported by the private person.

Sec. 6 The permittee shall conduct surface coal mining and reclamation operations only on those lands specifically designated as within the permit area on the maps submitted in the mining plan and permit application and approved for the term of the permit and which are subject to the performance bond.

Sec. 7 The permittee shall minimize any adverse impact to the environment or public health and safety resulting from noncompliance with any term or condition of this permit, including, but not limited to:

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

b. Immediate implementation of measures necessary to comply; and

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

Sec. 8 The permittee shall dispose of solids, sludge, filter backwash, or pollutants removed in the course of treatment or control of waters or emissions to the air in the manner required by the approved Utah State Program and the Federal Lands Program which prevents violation of any applicable State or Federal law.

Sec. 9 The lessee shall conduct its operations:

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

b. Utilizing methods specified as conditions of the permit by Utah Division of Oil, Gas and Mining and OSM in approving alternative methods of compliance with the performance standards of the Act, the approved Utah State Program, and the Federal Lands Program.

Sec. 10 The permittee shall provide the names, addresses, and telephone numbers of persons responsible for operations under the permit to whom notices and orders are to be delivered.

Sec. 11 The permittee shall comply with the provisions of the Water Pollution Control Act (33 U.S.C. 1151 et seq.) and the Clean Air Act (42 U.S.C. 7401 et seq.). Such compliance includes, but is not limited to obtaining an NPDES permit prior to any point source discharge.

Sec. 12 Upon expiration, this permit may be renewed for areas within the boundaries of the existing permit in accordance with the Act, the approved Utah State Program and the Federal Lands Program.

Sec. 13 If during the course of mining operations previously unidentified cultural resources are discovered, the applicant shall ensure that the site(s) is not disturbed and shall notify OSM. The operator shall ensure that the resource(s) is properly evaluated in terms of National Register Eligibility Criteria (36 CFR 60.6). Should a resource be found eligible for listing in consultation with the OSM, the land managing agency (if the site is located on Federal lands), and the State Historic Preservation Officer (SHPO), the operator shall confer with and obtain the approval of these agencies concerning the development and implementation of mitigation measures.

Sec. 14 APPEALS - The lessee shall have the right to appeal: (a) under 30 CFR 775 from actions or decisions of any official of OSM; (b) under 43 CFR 3000.4 from an action or decision of any official of the Bureau of Land Management (BLM); (c) under 30 CFR 290 from an action, order, or decision of any official of the Minerals Management Service; or (d) under applicable regulations from any action or decision of any other official of the Department of the Interior arising in connection with this permit.

Sec. 15 SPECIAL CONDITIONS - In addition to the general obligations and of performance set out in the leases, Utah State permit ACT/007/009 and this permit, the permittee shall comply with the special conditions of Utah State permit ACT/007/009 and the conditions appended hereto.

These conditions are also imposed upon the permittee's agents and employees. The failure or refusal of any of these persons to comply with these conditions shall be deemed a failure of the permittee to comply with the terms of this permit and the lease. The permittee shall require his agents, contractors, and subcontractors involved in activities concerning this permit to include these conditions in the contracts between and among them. These conditions may be revised or amended, in writing, by the mutual consent of the grantor and the permittee at any time to adjust to changed conditions or to correct an oversight. The grantor may amend these conditions at any time without the consent of the permittee in order to make them consistent with any new Federal or State statutes and any new regulations.

THE UNITED STATES OF AMERICA

By: Allen D Klein

4/30/84
Date

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

President and Director

L. A. Cayler

Authorized Representative of
the Permittee

5-11-84
Date

Joann Brown

My Commission Expires Feb. 23, 1988

5-11-84

Conditions

Sunoco Energy Development Company
Sage Point-Dugout Canyon Mine
Carbon County, Utah

Condition No. 1 (817.42-(1)-DD/OSM1)

The applicant shall provide data showing anticipated sediment influent concentrations characteristic of the undisturbed drainages so as to determine the quality of effluents from both waste disposal sites and undisturbed drainages. Final designs for sedimentation ponds must show evidence of compliance with UMC 817.42 through design criteria that will meet State and Federal water quality and effluent limitations. The final pond designs shall be submitted to the regulatory authority at least 120 days prior to planned sedimentation pond construction. Construction shall not begin until the plans have been approved by the regulatory authority.

Condition No.2 (817.43-.45-(1-2)-DD)

1. The applicant must submit, at least 120 days prior to planned portal construction, longitudinal cross sections and design calculations for culverts emplaced under the portal areas used to divert undisturbed runoff. Construction shall not begin until this information has been found to be satisfactory by the regulatory authority.

2. All culverts and diversions shall discharge onto a protected surface (i.e., riprap, conveyor belting, flexible downspouts, etc.) to prevent scouring and erosion.

Condition No. 3 (817.45-.47-(1)-DD/DWH/OSM2)

At least 120 days prior to planned sedimentation pond construction, the applicant must demonstrate to the regulatory authority that the final designs for the sedimentation ponds at the portal areas will meet all applicable State and Federal water quality effluent limitations. Construction shall not begin until this demonstration has been found to be satisfactory by the regulatory authority.

Condition 817.49-(1)-DD/DWH is the same as 817.45-.47-(1)-DD/DWH above.

Condition No. 4 (817.49-(2)-DD/DWH/OSM3)

Within 120 days of permit issuance the applicant shall submit information, to supplement the conceptual plan presented in the application, which demonstrates compliance with UMC 817.49(Hydrologic Balance: Permanent and Temporary Impoundments) insofar as the requirements of this section relate to the Dugout Reservoir, a permanent impoundment. The required information shall be submitted to the regulatory authority for approval. The construction of Dugout Reservoir is not authorized until the applicant has complied with the requirements of this condition.

Condition No. 5 (817.50-(1)-DD/OSM4)

At least 120 days prior to construction of the portals, the applicant shall submit for regulatory authority approval, a plan for handling and treating all mine water discharges. This plan will be in accordance with UMC 817.50. Construction shall not begin until this plan has been approved by the regulatory authority.

Condition No. 6 (817.56-(1)-DD/OSM5)

Prior to cessation of operations the applicant shall submit specific details of transfer of title to the Dugout Reservoir. This transfer agreement must incorporate any responsibilities the new owner will need to assume as part of reservoir maintenance.

Condition No. 7 (817.57-(1)-DD)

Prior to any construction in the area the applicant shall establish markers establishing a 100-foot buffer zone along the perennial and intermittent streams adjacent to approved activities.

Condition No. 8 (817.61-.68/OSM7)

At least 120 days prior to the construction of any surface facilities, the applicant shall submit to the regulatory authority documentation of compliance with the (blasting) requirements of UMC 817.61-.68. Construction shall not begin until the documentation has been found to be satisfactory by the regulatory authority.

Condition No. 9 (817.95-(1)-PGL)

The applicant shall submit a letter at least 120 days prior to initial construction stating that the conditions outlined in the Bureau of Air Quality conditional approval will be met. (Conditional-approval letter from Brent C. Bradford to Nicholas K. Temnikov dated May 18, 1981, attached to TA.)

Condition No. 10 (817.97-(1)-SL/OSM9)

At least 120 days prior to any conveyor construction, final detailed designs showing exact location of the conveyor corridor, height of the belt from the ground along the entire length of the conveyor and the location and design of any proposed big game crossings must be submitted to the regulatory authority for approval. The design must be correlated with data collected during the UDWR study (Utah Division of Wildlife Resources, 1982) on big game movements through, and general use of the chosen conveyor corridors. In no case shall minimum height of the conveyor above-ground surface be less than that approved in the Bureau of Land Management's Special Use permit for this conveyor. The applicant has committed, as part of a wildlife mitigation plan, to carry out a big game movement monitoring program post-construction. Design of this monitoring program must be submitted to the regulatory authority for review and approval at least 120 days prior to conveyor construction. Based on the results of this study, the applicant may also be required to carry out certain big game mitigation practices, including but not limited to the construction of one or more big game crossings.

Condition No. 11 (UMC 817.97-(2)-SL)

A final wildlife mitigation plan must be submitted to the regulatory authority at least 120 days prior to any construction (other than initial road upgrading) detailing all measures Sunedco will take to lessen impacts of mining on wildlife in the permit area.

Condition No. 12 (UMC 817.97-(3)-OSM8)

The following are the conditions submitted by the Bureau of Land Management, incorporating certain U.S. Fish and Wildlife Service (USFWS) concerns. The BLM/USFWS conditions are as follows:

a. Widening of the existing roads along the riparian zone of Dugout Creek and Fish Creek shall be done oppposite the side adjacent to the riparian zones to the maximum extent practicable as determined by the operator in consultation with BLM's authorized officer.

b. Loss of riparian habitat on public lands through construction of facilities will be mitigated by upgrading adjacent riparian zones or establishing new riparian zones in conjunction with the Dugout Reservoir. Habitat upgrading will be accomplished by the operator prior to or during construction through coordination with BLM's authorized officer.

c. Loss of critical winter habitat for deer by destruction or disturbance will be mitigated by upgrading adjacent winter range. Habitat upgrading will be accomplished prior to initiation of surface construction by the operator through coordination with BLM's authorized officer.

d. Surface disturbances and facilities planned for the lease area shall be subject to Visual Resource Management considerations. Efforts shall be made to mitigate visual impacts by imitating the form, line, color and texture of the natural landscape to the greatest extent practical as determined by BLM's authorized officer. This will include painting of surface structures to blend with the surrounding terrain and minimal removal of vegetation in areas of proposed surface facilities.

e. Speed of vehicular traffic associated with the mine project should be reduced to no more than 40 miles per hour throughout the mine project area (critical deer winter range) during the period November 1 through May 15 to minimize deer fatalities. The use of the Swareflex Wildlife Reflector Warning System (Streiter Corp.) is recommended to further minimize deer fatalities.

f. Dugout Reservoir will be left intact at the end of mine life if such action is determined to be in public interest. The determination will be made by BLM's authorized officer at the end of mine life.

g. An inventory of areas of proposed surface disturbances shall be performed by the operator in consultation with the BLM's authorized officer to determine the presence of migratory birds. Mitigating measures will be prepared by the authorized officer to protect the habitat of migratory birds.

i. One active prairie falcon eyrie, one suspected prairie falcon eyrie and one golden eagle nest site (old) was documented by the USFWS and the UDWR. A buffer zone delineated on map 2 (attached) has been established for protection of these sites within which the following mitigating measures apply:

C. Prohibit all surface construction activities within the buffer zone (map 2) during the critical nesting period, March 15 to June 15. Surface construction may be initiated on June 1 if a nesting attempt has not been documented by the BLM's authorized officer in consultation with the USFWS. Surface construction may also be initiated on June 1 if a determination by the authorized officer, in consultation with the USFWS, shows the nesting attempt to be nonproductive. This determination may be ascertained by observed behaviors of the nesting pair or by presence or absence of eggs.

D. Coordinate all nest site visitations through the USFWS and/or the BLM's authorized officer to minimize disturbance to nesting activity.

j. Two Cooper's hawk nests have been documented as active by the BLM and the UDWR. A buffer zone shown on map 3 has been established for protection of these nest sites within which the following mitigating measures apply:

A. Coordinate all nest visitations with the USFWS and/or the BLM's authorized officer to minimize disturbance to nesting birds.

B. Prohibit all surface construction activities within the buffer zone during the critical nesting period, April 15 to July 15. Surface construction may be initiated on July 1 if a nesting attempt has not been documented by the BLM's authorized officer in consultation with the USFWS. Surface construction may also be initiated on July 1 if a determination by the BLM's authorized officer in consultation with the USFWS, shows the nesting attempt to be nonproductive. This determination may be ascertained by observed behaviors of the nesting pair or by presence or absence of eggs.

C. Protect all shrubs, trees, or other vegetation along the existing road shoulder (closest to the nest site) within the buffer zone.

Condition No. 13 (817.97-(4)-OSM10)

At least 120 days prior to construction of the portals, a final mitigation plan must be submitted to the regulatory authority which addresses items e, f, g and i listed on page 2 of the May 12, 1983 U.S. Fish and Wildlife Service memorandum, "Review of Concerns - MRP, Sunedco, Sage Point-Dugout Canyon". For reference, these items are listed below:

e) Stipulate that reference plots (or other suitable methods) be maintained in riparian habitats of Dugout Creek downstream from the planned diversion to monitor impacts from diversion of Dugout Creek flows. Require the Company to maintain flows adequate to maintain these riparian habitats.

f) Require the company to replace all lost sources of wildlife water, lost due to mining activity.

g) Require the company to mitigate by replacement and maintenance of lost cavity nest sites at a rate of two nest boxes/cavity lost or impacted (within 50 yards of roads or developments).

i) Identify areas that are vegetated by Hedysarum occidentale var. canone and minimize disturbances if possible.

Condition No. 14 (817.99-(1)-SL)

The applicant shall notify the regulatory authority of any slide or surface failures which may occur during operations.

Condition No. 15 (817.107-(1)-PGL)

A written commitment is needed from the operator that when rills or gullies deeper than nine inches form in areas that have been regraded or topsoiled, the rills and gullies shall be filled, graded or otherwise stabilized according to Section UMC 117.111-.117; or when rills and gullies form of a lesser size they will be stabilized and the area reseeded or replanted if the rills or gullies are disruptive to the approved postmining land-use or may result in additional erosion and sedimentation.

Condition No. 16 (817.121-(1)-TNT/OSM12)

Updated subsidence prevention plans must be provided to the regulatory authority for approval if deviation from forecasts in the MRP are developed. Should any surficial damage or fractures become apparent which may constitute a hazard, subsidence prevention plans must be updated immediately.

Condition No. 17 (817.122-.126-(1)-TNT)

Each owner of property or resident within the area above the underground workings and adjacent area that would be affected by subsidence if it occurred must be notified by mail at least six months prior to mining. The notification shall contain as a minimum:

a. Identification of specific areas in which mining will take place;

b. Dates of underground operations that could cause subsidence and affect specific structures; and

c. Measures to be taken to prevent or control adverse surface effects.

Condition No. 18 (817.150-(1)-SL)

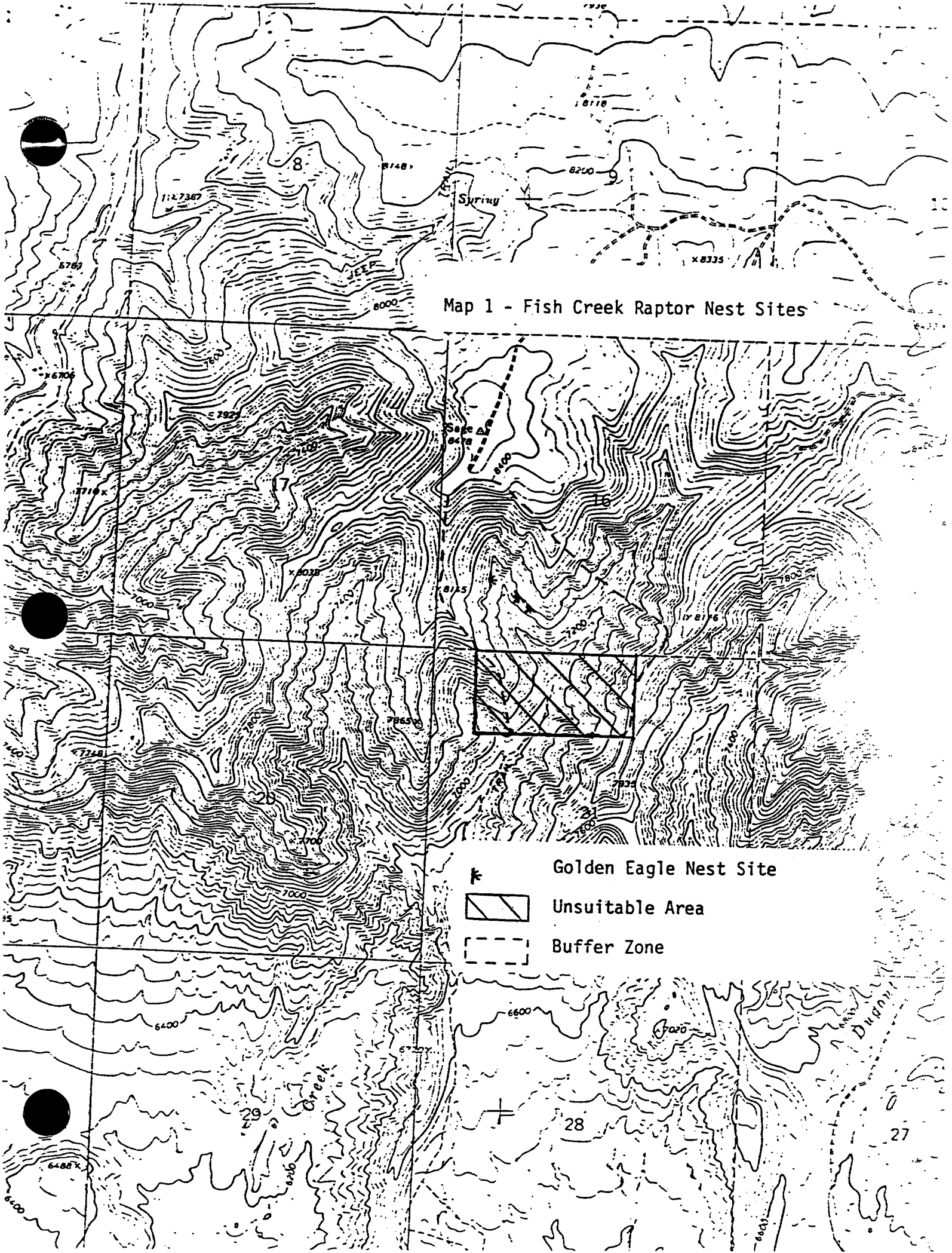
At least 120 days prior to initiation of construction, the applicant must submit to the regulatory authority for approval final detailed designs for all proposed class II roads. Designs must include detailed drawings of road alignment, grades and sizing and location of culverting. Construction shall not begin until final designs are found to be acceptable by the regulatory authority.

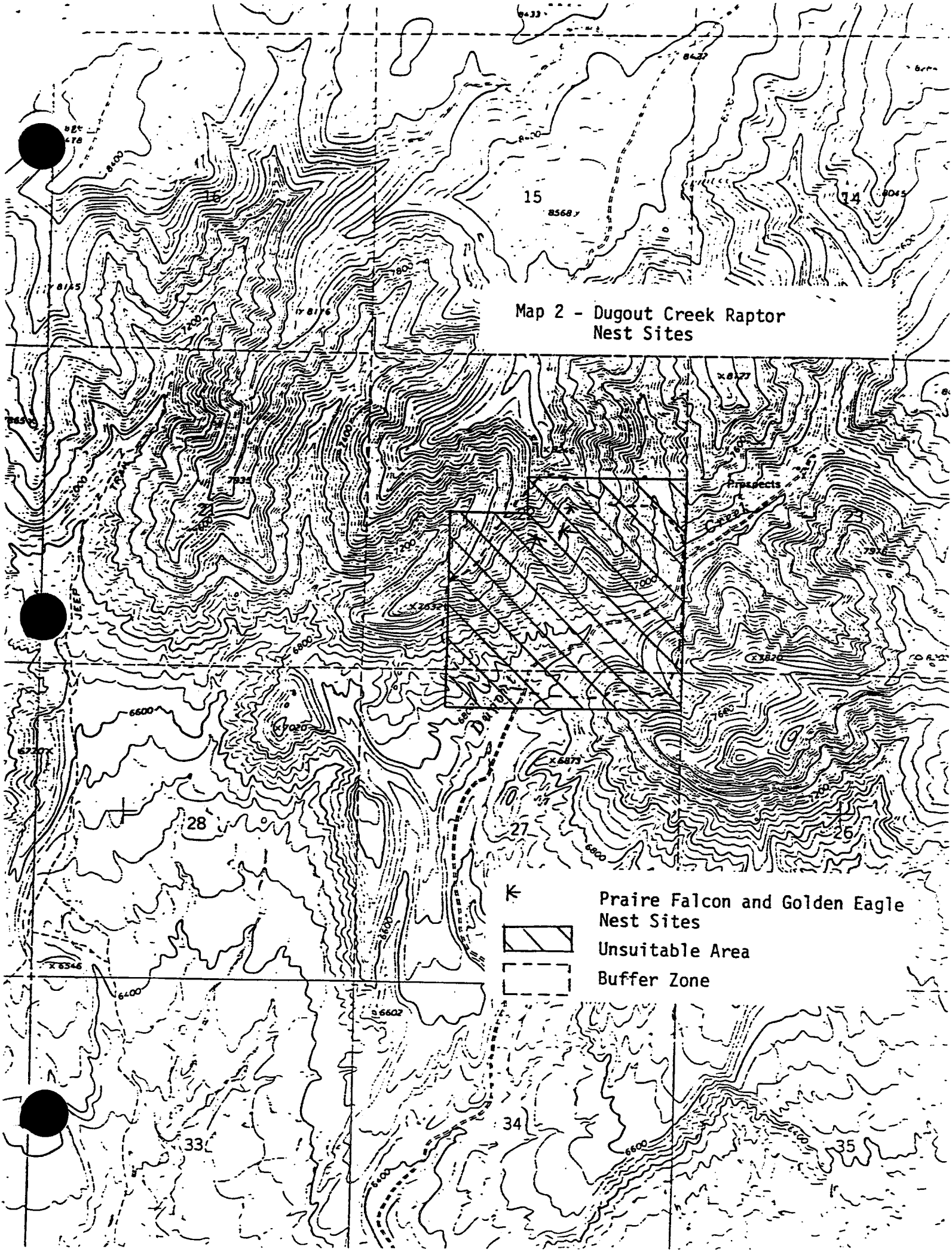
Condition No. 19 (OSM14)

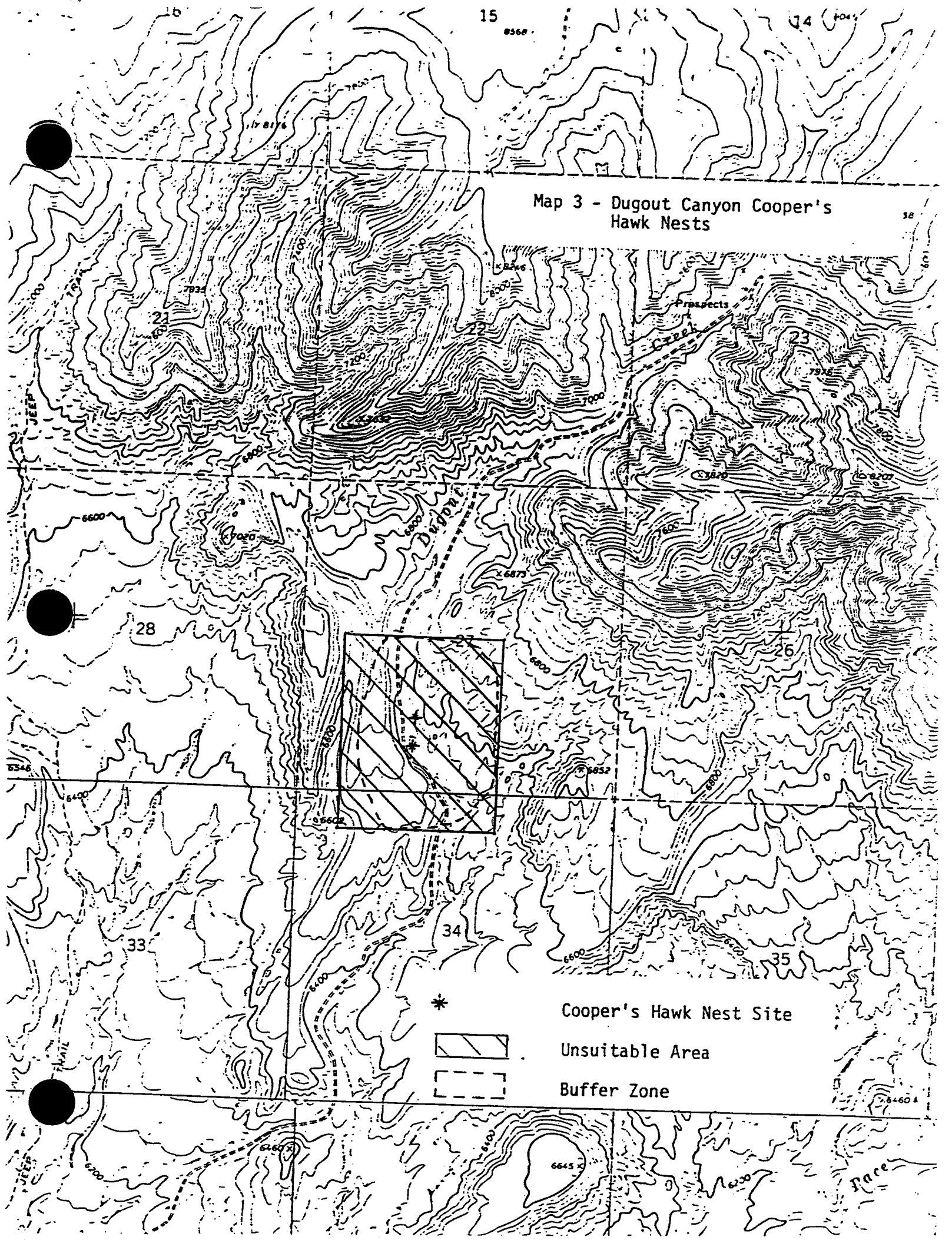
The applicant shall comply with all applicable Federal, State and local laws, rules and regulations which impose duties with regard to socioeconomic analyses and/or mitigation plans that are required to be submitted prior to project construction. Such analyses and plans shall be developed and implemented in consultation with affected local governments, the Utah State Department of Community and Economic Development, the Utah State Division of Oil, Gas and Mining, and OSM.

Condition No. 20 (OSM17)

The operator shall submit to the regulatory authority and the SHPO for review and approval, a site-specific mitigation plan for sites 42 Cb172, 173, 196, 135, 185, 188, 186 and 202. When approved, the operator shall implement the mitigation specified in the mitigation proposal. A draft report of the data recovery shall be submitted for review and approval to the regulatory authority and the SHPO no later than 4 months after completion of the data recovery. A final report shall be submitted within 4 months after receiving the comments and recommendations of the regulatory authority and the SHPO which incorporates these comments and recommendations. No surface disturbance activites related to mining will take place within 100 feet of these sites until mitigation and the resulting report has been approved.


Map 1 - Fish Creek Raptor Nest Sites
Golden Eagle Nest Site
Unsuitable Area
Buffer Zone
Spring
JEEP
Creek
8
9
17
16
20
21
29
28
27


Map 2 - Dugout Creek Raptor
Nest Sites
Praire Falcon and Golden Eagle
Nest Sites
Unsuitable Area
Buffer Zone
Prospects
JEEP
15
14
28
27
26
34
33
35


Map 3 - Dugout Canyon Cooper's Hawk Nests
Prospects
Dugout
Cooper's Hawk Nest Site
Unsuitable Area
Buffer Zone

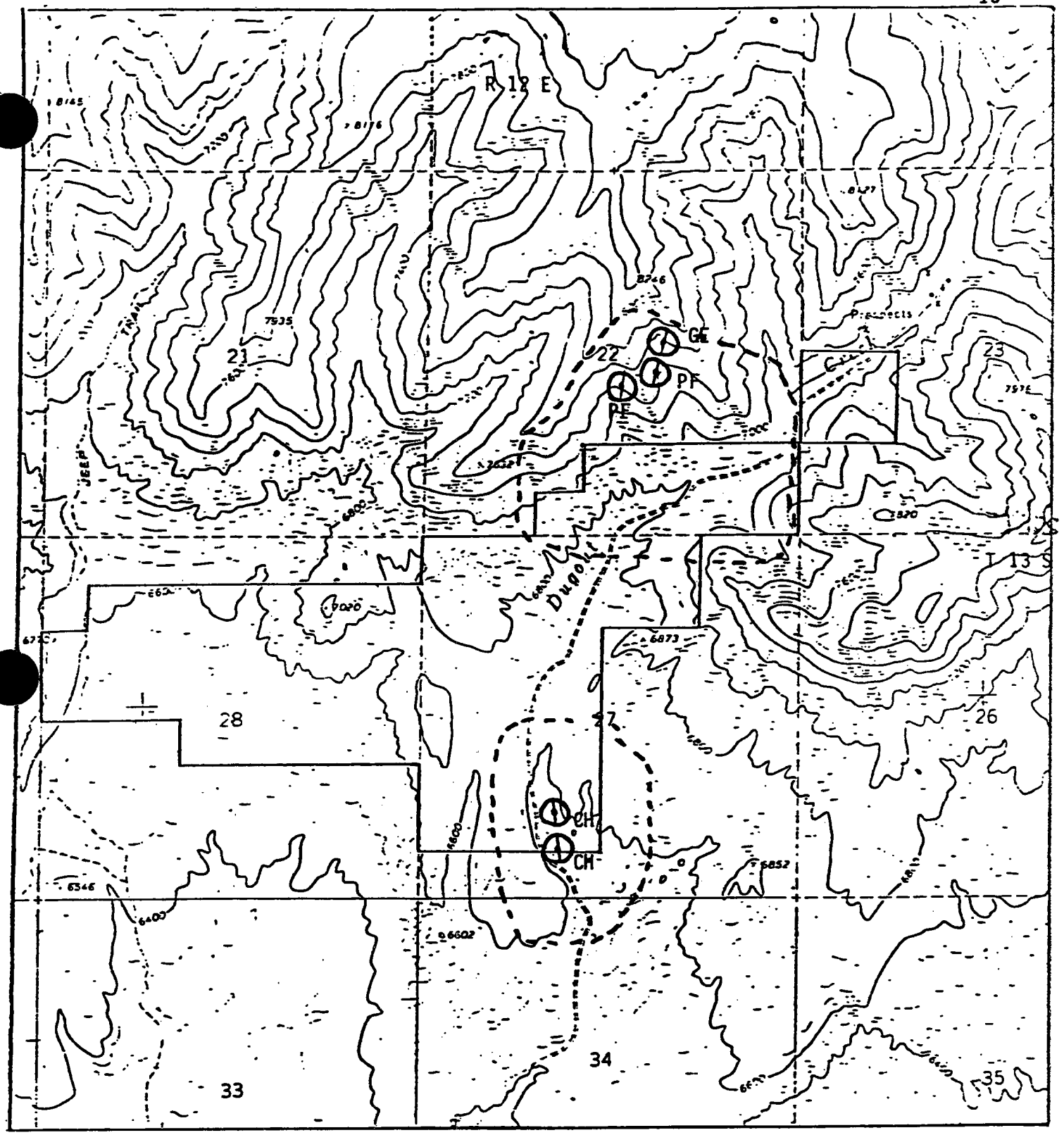


Figure 4. Raptor Nest Buffer Zones

CH Cooper's Hawk Nest
PF Prairie Falcon Seraps
GE Golden Eagle Nest
-- Buffer Zone

2920
U-52808
(U-066)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

INDUSTRIAL OCCUPANCY LEASE
Serial Number U-52808
Federal Land Policy and Management Act of 1976
(90 Stat. 2743, 2762; 43 U.S.C. 1732)

SECTION 1 - BASIC AGREEMENT

The United States of America acting through the Authorized Officer, Bureau of Land Management hereby leases to Sunoco Energy Development Company, a Delaware Corporation, called the lessee, the parcels of public land described below for a period of thirty (30) years commencing on the date of lease execution by the Authorized Officer. The leased lands are to be used by the lessee for the construction, operation, and maintenance of the following mine related facilities: 1) Reservoir, 2) roads, 3) water pipeline, 4) sewage pipelines, 5) water diversion ditches, 6) sewage lagoon, 7) telephone lines, 8) powerline, 9) conveyor, 10) topsoil stockpile areas, 11) sedimentation ponds, and 12) rock waste disposal site.

The lease may be renewed if the public lands are not needed for another use. Terms and conditions are subject to revision at the time of renewal.

Legal Description of Leased Area:

Salt Lake Base and Meridian, Utah,
Township 13 South, Range 12 East,
Section 22, E½NE¼SE¼SW¼, E½SW¼SE¼SW¼, SE¼SE¼SW¼, S½SE¼;
Section 23, NW¼SW¼;
Section 27, NW¼NE¼, NW¼, N½SW¼, N½S½SW¼;
Section 28, S½N½NE¼, S½NE¼, S½NE¼NW¼, SE¼NW¼NW¼, S½NW¼, NE¼NE¼SW¼, N½N½SE¼.

The area described aggregates 740 acres.

SECTION 2 - RENT

A. This lease is issued subject to a subsequent appraisal by an appraisor of the Bureau of Land Management. The lessee agrees to pay the Bureau of Land Management, upon demand, those fees determined in the appraisal to represent the

fair market rental for the use of the public lands involved in this land-use authorization.

Yearly adjustments of rent may be made to compensate for inflationary trends. Such rental shall be determined by dividing the consumer price index for the month preceding the commencement of each subsequent year of the lease by the consumer price index for the month of (preceding month), being the month on which the lease commenced and then multiplying that amount by the fair market value. The consumer price index referred to is published by the Bureau of Labor Statistics, U. S. Department of Labor.

B. The lessee shall pay the Bureau of Land Management, Moab District, P. O. Box 970, Moab, Utah 84532 the yearly rent within thirty (30) days of receipt of the statement. Late payments will be subject to a charge of 0.75 percent per month of the unpaid amount or $15 per month whichever is greater. Failure to pay the rental fee will be cause for cancellation of this lease.

C. The rental is subject to review and adjustment every five (5) years to reflect current fair market value as provided by 43 CFR 2920.8(a)(2).

SECTION 3 - CONDITIONS OF USE

The Lessee Agrees to:

A. Comply with all local, State, and Federal laws, regulations and ordinances pertaining to water quality, public health and safety and environmental protection. Compliance shall be made with State standards when those standards are more stringent than Federal standards.

B. Comply with local, State and Federal laws and regulations issued thereunder, existing or promulgated, affecting in any manner, construction, operation, or maintenance or termination of facilities located on the lease to include all applicable regulations in 30 CFR Chapter VII and regulations developed to implement the Coal Mining Reclamation Act of 1978 (U.C.A. 40-10-1 et. seq.) Chapter I Parts U.M.C. 700-845.

C. Construct and maintain lease facilities and structures in strict conformity with the descriptive and technical data which it has heretofore furnished the Bureau of Land Management in connection with its application. Activities which are not in accord with such data may not be initiated without the prior written approval of the lessor. Approval of variances will not be given unless the need therefore, is fully justified by the lessee.

D. Not utilize the lease for any purpose other than for what this lease is issued.

E. To take all reasonable precautions to prevent and suppress forest, brush, grass, and other fires that may result in damage and extinguish all fire before leaving the premises unattended.

F. Not to enclose or obstruct in any manner, or erect or maintain signs on any road or trail commonly used for public travel without the written approval of the lessor.

G. To remove and dispose of all waste material including trash, oil, grease, chemicals, and similar substances in accordance with local, State, and Federal laws and regulations. Under no circumstances shall waste material be disposed of on public lands without the written approval of the lessor.

H. The lessee shall provide a qualified cultural resource specialist (approved by the BLM) to intensively survey surface disturbed areas for the presence of cultural resources. All known cultural sites and those located during inventory that are of significant value shall be avoided where feasible as provided for in 36 CFR, part 800, "Protection of Historical and Cultural Properties" and the Coal Programmatic Memorandum of Agreement between the President's Advisory Council on Historic Preservation, OSM, BLM, and SHPO. Impacts to all unavoidable sites shall be mitigated using data recovery techniques, such as collection and/or excavation. The lessee shall be responsible for mitigation. The cultural resource specialist and salvage techniques used shall be subject to approval by the Bureau of Land Management.

I. Surface disturbances and facilities planned for the lease area shall be subject to Visual Resource Management considerations. Efforts shall be made to mitigate visual impacts by imitating the form, line, color and texture of the natural landscape to the greatest extent practical as determined by the Authorized Officer. This will include painting of surface structures to blend with the surrounding terrain and minimal removal of vegetation in areas of proposed surface facilities.

J. After coal mining activities have concluded, rehabilitation shall be accomplished to restore the landscape to its former character to the greatest extent possible. Rehabilitation requirements may include terrain alterations to blend better with natural slopes; alteration, concealment, revegetation of cut-and-fill slopes; and removal of construction debris.

K. Widening of the existing roads along the riparian zone of Dugout Creek shall be done opposite the side adjacent to the riparian zones to the maximum extent practicable as determined by the operator in consultation with the lessor.

L. Loss of riparian habitat on public lands through construction of facilities shall be mitigated by upgrading adjacent riparian zones or establishing new riparian zones in conjunction with the Dugout Reservoir. Habitat upgrading shall be accomplished by the operator prior to or during construction through coordination with the lessor.

M. Loss of critical winter habitat for deer by destruction or disturbance shall be mitigated by upgrading adjacent winter range. Habitat upgrading will be accomplished prior to initiation of surface construction by the operator through coordination with the Authorized Officer.

N. Speed of vehicular traffic associated with the mine project shall be reduced to no more than 40 miles per hour throughout the lease area (critical deer winter range) during the period November 1 through May 15 to minimize deer fatalitites. The use of the Swareflex Wildlife Reflector Warning System (Streiter Corp.) is recommended to further minimize deer fatalities.

O. An inventory of areas of proposed surface disturbances shall be performed by the lessee in consultation with the lessor to determine the presence of migratory birds. Mitigating measures may be prepared by the lessor to protect the habitat of migratory birds as required by 43 CFR 3461.1(n)(1).

P. At least 120 days prior to any conveyor construction, final detailed designs showing exact loca tion of the conveyor corridor, heights of the belt from the ground along the entire length of the conveyor and the location and design of any proposed big game crossings shall be submitted to the Authorized Officer for approval. The design shall be consistent with data collected during the UDWR study (Utah Division of Wildlife Resources, 1982) on big game movements through, and general use of the chosen conveyor corridors. The lessee has committed, as a part of a wildlife mitigation plan, to carry out a big game movement monitoring program post-construction. Design of this monitoring program shall be submitted to the regulatory authority for review and approval at least 120 days prior to conveyor construction. Based on the results of this study the applicant may also be required to carry out certain big game mitigation practices, including but not limited to the construction of one or more big game crossings.

Q. Two Cooper's hawk nests have been documented as active by the BLM and the UDWR. A buffer zone established for the protection of these nest sites is outlined on Figure 4 (attached) and is unsuitable under Criterion 13. An exception can be applied with the following stipulations:

1. Coordinate all nest visitations with the FWS and/or the Authorized Officer to minimize disturbance to nesting birds.

2. Surface construction activities may be prohibited within the buffer zone during the critical nesting period, April 15 to July 15. Surface construction may be initiated on July 1 if a nesting attempt has not been documented by the lessor in consultation with the FWS. Surface construction may also be initiated on July 1 if a determination by the lessor in consultation with the FWS, shows the nesting attempt to be nonproductive. This determination may be ascertained by observed behaviors of the nesting pair or by presence or absence of eggs.

3. Protect all shrubs, trees or other vegetation along the existing road shoulder (closest to the nest site) within the buffer zone.

R. One active prairie falcon eyrie, one suspected prairie falcon eyrie and one golden eagle nest site (old) were documented by the FWS and the UDWR. A buffer zone delineated on Figure 4 identifies the area considered unsuitable according to Criteria 11 and 13 of the Unsuitability Criteria. An exception can be applied to allow limited surface disturbance based on the following stipulations:

1. Surface construction activities may be prohibited within the buffer zone (Figure 4) during the critical nesting period, March 15 to June 15. Surface construction may be initiated on June 1 if a nesting attempt has not been documented by the lessor in consultation with the FWS. Surface construction may also be initiated on June 1 if a determination by the lessor, in consultation with the FWS, shows the nesting attempt to be nonproductive. This determination

may be ascertained by observed behaviors of the nesting pair or by presence or absence of eggs.

2. Coordinate all nest site visitations through the FWS and/or the lessor to minimize disturbance to nesting activity.

S. A final mitigation plan shall be submitted and approved by the lessor at least 120 days prior to any construction, detailing all measures the lessee will take to lessen impacts of mining on wildlife within the lease area.

SECTION 4 - RESERVATIONS BY THE UNITED STATES

The United States reserves:

A. All the coal, oil, gas, geothermal, and other mineral deposits in the leased land together with the right to enter upon the land and prospect for mine and remove the same.

B. The right to issue rights-of-way, permits, and grazing licenses over the lease area. Such uses, however, shall not impair the use of said lands for authorized purposes nor damage authorized improvements therein.

C. The right to inspect the leased land at any time to ensure compliance with the terms and conditions of the lease.

SECTION 5 - LEGAL RESPONSIBILITY OF THE TENANT

The Lessee agrees:

A. To save the United States harmless from and indemnified against any liability for damages to life, person, or property arising from the operations under this lease.

B. To have in force public liability insurance covering property damage in the minimum amout of $500,000 and damage to persons in the minimum amount of $1,000,000 in the event of death or injury to one individual and the minimum amount of $1,000,000 in the event of death or injury to more than one individual for which the lessee may be liable because of the occupancy or use of the structures, facilities, or equipment authorized by this lease. The liability policy will name the United States as an insured or include a rider which affords the United States the same protection. The lessee shall require the insurance company to send an authenticated copy of this insurance policy to the Bureau of Land Management immediately upon its issuance. This policy shall contain a specific provision or rider to the effect that the policy will not be canceled or its provisions changed or deleted before thirty (30) days written notice to the District Manager, Moab District, P. O. Box 970, Moab, Utah 84532.

C. To file a performance bond with the lessor in the form of corporate surety, cash, or negotiable securities of the United States in the amount of $225,000. The bond shall be in affect prior to construction of authorized facilities on the lease.

SECTION 6 - CANCELLATION BY THE UNITED STATES

A. This lease may be terminated under the following circumstances:

1) Failure of the lessee to construct authorized facilities within five (5) years from the date of lease execution.

2) Noncompliance with applicable law, regulations or terms and conditions of the lease where default continues for thirty (30) days after written notice by the lessor.

3) Failure of the lessee to use the lease for the purpose for which it was authorized.

4) Mutual agreement that the lease should be terminated.

5) Nonpayment of rent for two (2) consecutive months following notice of payment due.

6) Failure to use the lease area for any continuous 2-year period shall constitute a presumption of abandonment and termination.

B. Upon the termination, cancellation, or expiration of this lease, the lessee will be allowed sixty (60) days to remove improvements from the land, or to make other disposition thereof. Upon his failure to do so, the improvements will become the property of the United States.

SECTION 7 - GENERAL PROVISIONS

A. This lease is issued subject to any existing valid right, including valid mining claims.

B. No member of, or delegate to, the Congress, or Resident Commissioner, after his election or appointment, and either before or after he has qualified, and during his continuance in office, and no officer, agent, or employee of the Department of the Interior, except as othewise provided in 43 CFR Part 7, shall be admitted to any share or part of this lease, or derive any benefit that may arise therefrom, and the provisions of Title 18, U.S.C., Sections 431-433, relating to contracts, enter into and form a part of this lease, so far as they may be applicable.

C. The lease shall be binding upon and in ure to the benefit of the heirs, executors, administrators, successors, and assigns of the parties hereto.

D. This lease shall not be transferred without the written approval of the lessor.

E. This lease shall not be subleased without the written approval of the lessor.

F. This lease shall take full force and effect upon signing by both the lessee and the Authorized Officer and shall remain in effect until expiration or it is otherwise cancelled as provided for in the above stipulations.

G. This lease is subject to the provision of Executive Order No. 11246 of September 24, 1965, as amended, which sets forth the non-discrimination clauses. A copy of this order may be obtained from the signing officer.

SUNOCO ENERGY DEVELOPMENT COMPANY

BY S. O. Ogden

TITLE Vice President

DATE December 27, 1983

THE UNITED STATES OF AMERICA

BY Kenneth V Rhea

TITLE Associate District Manager

DATE Jan 4, 1984

PREFACE TO THE TECHNICAL ANALYSIS
for
SUNOCO ENERGY DEVELOPMENT CO. (SUNEDCO)

SMCRA PERMIT APPLICATION

March, 1984

In December 1982, Sunedco resubmitted a permit application package (PAP) for approximately 40 years of underground coal mining near Wellington, Utah. 1/ Several letters were sent to the applicant by the regulatory authorities in 1983 which resulted in Sunedco submitting PAP revisions in June and December 1983 and January 1984. On November 2, 1983, after considerable discussion with Sunedco and UDOGM, OSM indicated that four outstanding problems remained with Sunedco's PAP. These deficiencies were as follows:

> The application must show that Sunedco has obtained a right-of-way lease from the BLM granting surface access for that portion of their proposed mining plan and permit area that includes the Dugout Canyon Reservoir, the Dugout Canyon waste disposal site, the sewage lagoon, and all associated pipelines. (Note: As of 9/27/83, Sunedco had not received 8 special-use permits from the BLM that would be required before operations could begin in their life-of-mine area.)
>
> The application must state that Sunedco will not use water from Soldier Creek sufficient to irrigate 60 acres of alluvial valley floor, and it must state that Sunedco will replace water utilized by offsite water users whose supply may be adversely affected by mining or mining-related activities.
>
> The application must include a plan, satisfactory to the regulatory authority, to revegetate the Dugout Canyon waste rock disposal area as required under UMC 817.111.
>
> The application must include additional design information satisfactory to the regulatory authority for the Dugout Canyon "portal" highwalls.

On December 21, 1983, and on January 4, 1984, Sunedco responded to OSM's November letter by substantially revising their SMCRA permit application. This revision provided for a greatly reduced scale of operations. The area of initial SMCRA permit approval being sought was reduced from 18,242 acres (476.5 acres of surface disturbance) to 4,475 acres (70 acres of surface disturbance). Sunedco removed the proposed central facilities area and proposed Fish Creek mine portals area and accompanying facilities from their proposed initial permit area and considerably lessened the area from which they initially planned to remove coal. (See Location Map section.)

1/Sunedco was resubmitting an application originally submitted in December 1980 by Eureka Energy Co. (See TA which follows for a more complete explanation.)

By excluding the central facilities area from their initial SMCRA permit area, Sunedco removed the need (at least temporarily) to satisfy the alluvial valley floor concerns raised in OSM's November 2, 1983 letter. Sunedco's December 21, 1983 and January 4, 1984 submittal specifically included:

Updated right-of-way information for the initial (4,475 acre) SMCRA permit area, including documentation that the company had been issued industrial occupancy lease #U-52808 by the BLM. This 740-acre right-of-way lease allows Sunedco to disturb the surface in portions of Township 13 S, Range 12 E, Sections 22, 23, 27, and 28 for the construction of the facilities needed to initially commence mining activity in the Dugout Canyon area (See copy of lease placed behind permit in chapter 8 of this decision document and pp I-34 ff, vol. I of the PAP.)

Revised permit term information indicating that while the applicant eventually proposed to operate the Sage Point-Dugout Canyon project for 40 years (18,242 acres), the subject PAP is only for 5 years (4,475 acres). The December 21, 1983 submittal states that within the initial SMCRA permit area, no mine-related activity will occur on the Soldier Creek alluvial valley floor and sufficient water will continue to be available to irrigate this area. Revised permit maps were also submitted. (See pp I-41 ff, vol. I and maps D03-0002 A and B of the PAP).

An exact legal description of the Dugout Canyon County road that will be permitted for mine access in this permit term (see pp I-39a, vol. I of PAP.)

Revised alternative water supply information justifying that coal mining and related activities would have no adverse effects on the quality of the water supply in the project area (see p II-17, vol. II, of PAP.)

Revised reclamation procedures and related information for the Dugout Canyon waste rock disposal site. This information included: final slope configurations for the durable rock fill, soil descriptions, soil salvage depths and procedures 2/, soil replacement procedures, revegetation methods, the methods by which the fill would be constructed, revised drawings of the fill, and the revised cost estimates for reclamation of the fill area. (See pp. I-314, I-330, I-349, I-404, II-207 ff, II-217 ff, II-221 ff, II-227, II-302, II-308, II-338 ff,and II-345 of the PAP.)

A geotechnical analysis of the highwall stability of the Dugout Canyon portal (see p. I-72 through I-75 of the PAP).

The BLM industrial occupancy lease (#U-52808) cleared up the only remaining right-of-entry problems within Sunedco's initial SMCRA permit area. (See Permit Boundaries Map.) Sunedco still, however, has not obtained all the Federal surface leases that would be necessary for the construction of the central facilities area originally proposed for their life-of-mine operations.

2/Note: The proposed Dugout Canyon waste-rock site will be reclaimed with excess soils salvaged from the proposed Dugout Canyon Reservoir site.

Major areas of disturbance within the initial SMCRA permit area all occur within Township 13 South, Range 12 East, Salt Lake Meridian and Baseline as indicated on the accompanying permit boundaries map. These disturbances include the 2 Dugout Canyon portals and portal pad (section 23), the Dugout Road, the Dugout Reservoir (Section 27), the Dugout sewage lagoon (section 28), the Dugout Canyon rock disposal (sections 22 and 27), and the associated powerlines, waterlines and sewage line.

An overland conveyor will eventually be built from the Dugout Canyon portals; however, this is not a part of Sunedco's initial SMCRA permit. The Dugout Canyon conveyor was, however, authorized subject to final design and location approval by the BLM in the recent Industrial Occupancy lease issued to Sunedco on January 4, 1984. When built, this conveyor will link the Dugout Canyon portal area with the central facilties area proposed for the life of the mine (see Life-of-Mine Map).

Portions of 4 Federal coal leases are included within the initial SMCRA permit area. These include U-7746; U-092147; U-0144820; U-07064-027821. In addition, there are 2 areas of fee (private) coal within the initial SMCRA permit area (See Permit Boundaries Map). Federal coal constitutes 86.5 percent of the coal that is proposed for mining in the initial SMCRA permit area and fee coal constitutes 13.5 percent. The surface ownership of the initial SMCRA permit area is 42.7 percent Federally-owned (1910 acres), 55.4 percent privately-owned (2480 acres) and 1.9 percent (85 acres) is owned by Carbon County (the Dugout Canyon Road). For a more complete description of these acreages, see the mine plan information form placed behind Location Maps in this decision document.

Sunedco's proposed area of mining plan approval (re: Mineral Leasing Act), is 3,080 acres and constitutes those portions of the 4 Federal coal leases included within the initial SMCRA permit area. A portion of a 5th Federal lease (#U-089096) is included within the life-of-mine area but not within the initial SMCRA permit area.

The Solid Minerals Division of the BLM found Sunedco's original life-of-mine permit application to be in compliance with 30 CFR 211.10(b) on April 22, 1983. The Resource Recovery and Protection Plan approval involved Federal coal lease numbers U-07746, U-089096, U-092147, U-0144820 and U-07064-027821. The BLM found Sunedco's revised PAP for this initial permit area to be in compliance with 30 CFR 211 on March 15, 1984. Sunedco's revised PAP does not alter the sequence of coal removal in time or location for the first 5 years of mining from that approved by the BLM in April 1983. (See maps D03-006, D03-007 and D03-008, vol. 11 of the PAP.)

On March 19, 1983, UDOGM submitted a TA to OSM on Sunedco's PAP. This initial TA was prepared for Sunedco's proposed life-of-mine plan for this Sage Point-Dugout Canyon operation and it has subsequently been revised three times at the request of OSM and as a result of PAP revisions submitted by Sunedco. The Index on the next page summarizes the contents of the original TA and its three addendums and supplements.

The most recent TA supplement was prepared by UDOGM on January 17, 1984, and was in response to the PAP revisions submitted on December 21, 1983 and January 4, 1984. This supplement demonstrates that Sunedco will be fully in compliance with the Utah State Program now that the company has satisfactorily made the changes suggested in OSM's November 2, 1983 letter.

Some portions of the March TA, the July TA addendum, and the September supplement address regulatory compliance for areas that are no longer a part of Sunedco's 5-year SMCRA permit application. Also, some of the proposed permit conditions proposed in the March TA for a life-of-mine permit are not included in the initial SMCRA permit. This is because they are conditions only applicable to areas that have been withdrawn from the initial permit area or because they were made unnecessary by Sunedco's December 1983 and January 1984 PAP revisions. OSM decided to leave these proposed life-of-mine conditions in the TA because Sunedco has indicated that it intends to submit a revised PAP for the life-of- mine area within 2-3 years after receiving initial SMCRA permit approval. OSM and UDOGM would, therefore, have a substantial headstart in preparing the TA, EA and other aspects of the decision document for this new life-of-mine PAP. Sunedco has also indicated that before they reapply they will attempt to resolve all of the proposed conditions included in the March 1983 TA that are still applicable to their revised life-of-mine PAP.

Index to the Technical Analysis
Sunedco's
Sage Point-Dugout Canyon Mine

Date	Title	Purpose
March 16, 1983	Technical Analysis	Evaluation of Sunedco's life-of-mine (40 yrs) PAP, as submitted in December 1982, with the Utah State Coal Program permitting requirements. This original TA analyzed some disturbances that were eventually excluded in Sunedco's December 1983 revised PAP such as the proposed central facilities area, the Fish Creek portals, and the Fish Creek and Dugout Canyon conveyors.
July 14, 1983	Technical Analysis Addendum	Reevaluation of Sunedco's life-of-mine PAP, as revised through June 13, 1983, with the Utah permitting requirements. Sunedco's revisions were made in response to OSM and UDOGM's concerns regarding the extremely long list of stipulations proposed in the March TA.
September 15, 1983	Supplement No. 1 Technical Adequacy Determination	Prepared as a result of OSM's determination that several UDOGM regulations had been illegally suspended or remanded by the State of Utah because the rule changes did not receive Secretarial approval. UDOGM reevaluated Sunedco's life-of-mine PAP as revised through July 1983 to determine if those regulations found to be still in effect were adequately addressed.
February 17, 1984	Supplement No. 2 Technical Adequacy Determination	Reevaluation of Sunedco's PAP as revised through January 4, 1984. Supplement No. 2 consists of an evaluation of the 4 areas of Sunedco's PAP that changed as a result of Sunedco's desire to greatly reduce their initial scale of operations. These 4 areas included alternative water supply and water rights replacement, revegetation of the Dugout Canyon waste rock disposal area, stability of the Dugout Canyon portal faces, and the applicability of the Soldier Creek alluvial valley floor to the initial SMCRA permit area.

TECHNICAL ANALYSIS[1/]

Sunoco Energy Development Company
Sage Point-Dugout Canyon Mine
ACT/007/009, Carbon County, Utah
March 1983

INTRODUCTION

The Sage Point-Dugout Canyon Underground Mine Project is proposed by the Sunoco Energy Development Company (Sunedco), a subsidiary of Sun Company, Inc., of Radnor, Pennsylvania. The project will be located just south of Wellington, Utah, in two box canyons, Dugout and Fish Creek, which intersect the Book Cliffs. The project will include four independant underground mines. Two of the mines will be located in Fish Creek Canyon and two in Dugout Canyon. There will be a mine portal on each side of the two canyons. The Fish Creek Canyon Mines will operate in the Sunnyside, Rock Canyon and Gilson Seams, while the Dugout Creek Mines will operate only in the Rock Canyon and Gilson Seams.

The original applicant was Eureka Energy Company, a subsidiary of Pacific Gas & Electric of San Francisco, California. An application for a mining permit was received by the Division of Oil, Gas and Mining (DOGM) on December 12, 1980. An Apparent Completeness Review (ACR) was prepared jointly by DOGM and the Office of Surface Mining (OSM) and sent to the applicant on June 1, 1981. Eureka Energy Corporation responded to the review with an Addendum to the Mining and Reclamation Plan, submitted on August 7, 1981. The application was declared complete on December 31, 1981 and newspaper advertisement of the application was published on December 30, 1981 and January 13, 20 and 27, 1982 in the Price, Utah, Sun Advocate newspaper.

On February 10, 1982, Eureka Energy Corporation executed a definitive coal property sale and purchase agreement to sell the Sage Point-Dugout Canyon coal properties to Sunedco. A draft Technical Analysis was prepared by DOGM and sent to OSM on April 28, 1982. The purchase of the property by Sunedco was completed on May 13, 1982 with the completed reassignment of all Federal leases. Sunedco republished the application June 9-30, 1982 (see publication notice attached to the TA). Since the regulatory authority was not certain that Sunedco would adopt the entire application as it stood at the time of purchase, the permitting process was put on hold until the Sunedco staff had time to completely review the application. On December 20, 1982, Charles Durrett, Environmental Coordinator of Sunedco Coal Company (a subsidiary of Sun Energy Development Company) indicated in a letter to DOGM that no major modifications to the application had been identified and requested that the permitting process proceed. DOGM and OSM concurred on January 7, 1983 and January 19, 1983, respectively. The applicant has committed to submit final details on any proposed changes at least 120 days prior to construction. It is anticipated that construction will begin in March of 1984.

[1/] This technical analysis was prepared by the Utah Division of Oil, Gas, and Mining in March 1983 on Sunedco's proposed life-of-mine permit application (40 yrs - 18,242 acres). All references herein to the permit area or mine plan area refer to the life-of-mine. In December 1983, Sunedco revised this PAP to include only 4,475 acres in the initial permit area. Accordingly, portions of this March 1983 TA have been changed to reflect Sunedco's revised PAP (see following addendums and revisions).

The major potential disturbances of the proposed coal mines will occur discontinuously on four sections. They are located in Township 13 South, Range 12 East, Section 29, 30, 31 and 32, Salt Lake Meridian and Baseline (See central facilities aerial photo and Map D03-0002 in Location Maps section). They include corridors 100 feet wide for utility lines and for conveyor belts leading from the proposed central facilities to the planned mine portals. The total surface disturbance over the life of the mine will be 476.5 acres. The portal pads will provide level areas for the parking, storage facilities, maintenance building and changehouses necessary to support the two mines in each canyon.

The mineral leases are 83 percent Federal and 17 percent State and fee. Surface ownership is 38.4 percent Federal. Total acreage of the permit area is 18,241.62 acres. At the point of full operations, Sunedco will employ 775. The maximum annual production for the complex of mines, nearly five million tons, will not be reached until the 14th year of mine operations. The anticipated life of the mine complex is 40 years. Both room and pillar and long wall mining methods will be utilized. A preparation plant and loadout facility will be constructed to further enhance the goal of maximum coal recovery. An overland conveyor system extending from each portal area will carry the coal to the preparation facility. A railroad spur and loop will be constructed from a future Denver and Rio Grande Western Railroad line originating southeast of Wellington. This will provide access for unit trains to be used for transporting coal out of the permit area.

Existing Environment

The striking features of the landscape of the project area are the pediment (bench) surface capped by sandstone sediments two or more meters thick over Mancos Shale. These surfaces support mature stands of juniper and pinyon with little understory.

Other community types on the permit area include Douglas fir, mixed conifer-mountain brush, shrub-grass-juniper, greasewood-sagebrush, mixed conifer and deciduous streambank (riparian). Four parcels of cultivated lands lie in the permit area. The primary crop raised is alfalfa. No threatened or endangered species have been found in the permit area.

Structurally, the permit and adjacent areas lie along the northern extent of the San Rafael Swell and the southern flank of the Uintah Basin. Faulting in the permit area is minor. Some subsidence is expected to occur, which should affect land used for grazing and recreation. A natural gas pipeline and dirt road pass through the subsidence area, but are not expected to be impacted. Streams or springs should not be affected. Six small drainage basins are contained within the permit area. Soldier, Pine and Dugout creeks flow year-round except during periods of unusually low precipitation. The upper reaches of Pace, Fish and Corbula creeks are maintained by springs that flow in direct response to precipitation.

The current land use for the project area is open range for cattle and wildlife with limited agricultural activity occurring in the vicinity of the proposed central administration facilities. Previous coal mining has occurred on the permit area. In the Dugout Canyon area, the Knight Ideal Coal Company mined the Rock Canyon and Gilson coal seams located in both sides of the canyon. The mine opened in 1940 and closed in November 1965. Total coal extracted from the two seams was approximately 1,320,000 tons by conventional room and pillar methods.

UMC 817.13-.15 Casing and Sealing of Exposed Underground Openings

Applicant's Proposal

There are no oil or gas wells within the mine plan area or within 1,000 feet of the mine plan area.

Temporarily inactive mine entries will be protected by barricades or other covering devices, fenced and posted with signs to prevent access into the entry and to identify the hazardous nature of the opening.

Final reclamation of all entry ways and other openings including portals will be constructed to prevent access to the mine workings by people, livestock, and wildlife. The permanently sealed entries will also keep any potential drainage from entering surface waters. A seal of at least 12 inches of reinforced concrete keyed 12 inches into the coal or rock contact will be applied. Earth fill will extend into each portal opening a distance of at least 12 feet. Exposed coal outcrops will be covered with a minimum of four feet of noncombustible earth material to protect against spontaneous combustion. Figure III-D.1 on page I-283 illustrates this description. Gravity discharges of water will not be permitted.

Shafts will be sealed, capped or filled in accordance with 30 CFR 75.1711-1. Filling will consist of noncombustible material for the first 50 feet from the bottom of the coal seam and complete filling of the entire depth above will occur. Caps will consist of six inch thick slabs of concrete and other types as needed.

Each exploration hole, or other bore hole, well or exposed underground opening (excluding blasting holes) will be cased and sealed. Holes within the permit area will be filled with cuttings or inert material until level with the surface. Flowing holes or possible flowing holes will be cemented or cased. Water monitoring wells and water supply wells will be sealed as described above when they are no longer needed.

Compliance

The applicant has complied with these sections based upon the resubmittal of information January 18, 1983.

Stipulations

None.

UMC 817.21-.25 Topsoil

Applicant's Proposal

The soils in the permit area range in elevation from approximately 5,000 feet to 8,000 feet. The soil orders encountered in the permit area include mollisols, entisols and aridisols.

Field investigations were conducted on these study areas during September and October 1979. The soil survey was designed to meet the requirements of an Order II (detailed) Survey.

The striking features of the landscape of the project area are the pediment (bench) surface capped by sandstone sediments two or more meters thick over Mancos Shale. These surfaces support mature stands of juniper and pinyon with little understory. The Ildefonso soils on the pediment surfaces are calcareous, moderately alkaline and sand; they contain numerous boulders and stones. Fluves (drainage ways) are entrenched into the shale and support stands of grasses and shrubs. Some areas are saline and sodic; these areas support greasewood and shadscale. The soils on these sites are represented by the Haverson, Lockerby, Cragola and Harvey series. Some phases of Haverson soils are used for alfalfa cropland. The bench edges have shallow, stony soils; little vegetation occurs where the shale is exposed. Shingle soils and Badlands are common on these sites.

Prior to any disturbance, topsoil will be removed from areas other than the Fish Creek durable rock fill Badlands (BY) soils, Dugout Creek durable rock fill (BY) soil and the preparation plant Shingle (NFD2) and Haverson alkali (OAC_2) soils. The BY soils are weathered Mancos Shale and are void of topsoil. The NFD2 and OAC_2 soils have shallow A horizons that contain high amounts of salts, electrical conductivity (EC) 6 to 28 mmohs/cm and a high sodium adsorbtion ratio of 36 to 47. Approximately 17 acres of BY soils and 114 acres of OAC_2 and NFD2 soils will be disturbed without topsoil removal.

Soil material that is to be salvaged will be removed in two lifts. The first will include the topsoil layer when it is at least six inches thick or the topsoil layer and subsurface layer up to a depth of six inches if the topsoil layer is less than six inches thick. The second lift will include soil that is not suitable for a seed bed material but will be useful as a spoil cover material and increase the water holding capacity of the reclaimed area.

Topsoil and subsoil will be removed from each phase of operation prior to construction. If possible, the topsoil and subsoil will be immediately redistributed on areas to be reclaimed that have been prepared for topsoil application. If stockpiling is necessary, the topsoil and subsoil will be stockpiled separately, protected from erosion by wind and water, compaction or contamination. Stockpiles will not be disturbed or rehandled until the soil material is to be redistributed on regraded areas.

At the time of final reclamation, surface facilities will be removed and the disturbed areas graded to blend with the natural contours. The areas will be ripped to a depth of approximately 24 inches before soil redistribution.

The soil materials will be applied in two lifts, subsoil application followed by topsoil. Following soil application, fertilizer elements will be broadcast and disked in to aid in the preparation of a proper seedbed.

If circumstances arise that necessitate the use of soil material other than topsoil which is available on-site, for a plant growth medium, the application will comply with the provisions of UMC 817.22(e), Topsoil Substitute.

Compliance

The applicant has requested a variance under UMC 817.22(e), Topsoil Substitute and Supplements, for nonremoval of topsoil from the Badland (BY), Shingle (NFD2) and the Haverson alkali (OAC_2) soils. Based on laboratory data submitted as part of the mine plan and an on-site inspection by the Division staff, a variance for removal of topsoil from the (BY) soils at the Fish Creek durable rock fill and the Dugout Canyon durable rock fill along with the Shingle (NFD2) and Haverson alkali (OAC_2) at the preparation plant site is granted.

The applicant is in compliance with this section.

Stipulation

None.

HYDROLOGY/GEOLOGY

Description of the Existing Environment

Geology Information

The permit and adjacent areas of the Sage Point-Dugout Canyon Project lie in the northern Colorado Plateau. The project area traverses the boundary between the Book Cliffs-Roan Plateau and the Mancos Shale Lowland physiographic provinces (Stokes 1977). Elevations in the Book Cliffs-Roan Plateau range from 6,700 feet to 10,185. The Mancos Shale Lowland is a long

strip of gently sloping terrain eroded in the Mancos Shale Formation. It extends from central Utah into western Colorado. Clark Valley, a broad open area in the Mancos Shale Lowland, borders the adjacent area to the south and separates the Book Cliffs from the large domal feature of the San Rafael Swell to the south. Pediments with gravel veneers are especially well developed in the Mancos Shale Lowlands, below the Book Cliffs. They range from west to east across the general area, varying in elevation and age. Elevations range from 4,200 feet to 6,700 feet.

Structurally, the permit and adjacent areas lie along the northern extent of the San Rafael Swell and the southern flank of the Uinta Basin. South of the permit and adjacent areas is the Farnham anticlinal structure with several associated faults.

Coal is the chief economic commodity in the region, followed by uranium. Coal deposits lie in the Book Cliffs; uranium is found south of the permit and adjacent areas in the San Rafael Swell. There has been exploration for oil and gas in the northern extension of the Farnham anticline, but no significant finds have been recorded.

The outcropping rocks of the permit and adjacent area include, from oldest to youngest, the Mancos Shale, Star Point Sandstone, Blackhawk Formation and Price River Formation. All are included in the Mesaverde Group except for the Mancos Shale. Overlying the Mesaverde Group is the North Horn Formation. Above the North Horn Formation, in sequence, are the Flagstaff Formation, Colton Formation and the Green River Formation. There are no major disconformities in the area.

The Blackhawk Formation is the major coal-bearing unit of the Book Cliffs escarpment. The San Rafael Swell and the Farnham anticline locally influence the structure of the area. Both features are south of the permit area.

The dip is north or northeast averaging about eight degrees across the permit area, but has a range of 6.2 to 11.5 degrees.

Faulting

Faulting in the permit and adjacent area is minor. There are numerous very small faults along the coal outcrop section. These faults appear to be related to the burning and subsequent slumping of the outcrop near the burned area. Geotechnical studies and field investigations have indicated that this faulting is strictly surficial and does not extend past the burned coal at depth.

The mine plan area contains no known faults in areas planned for coal recovery. All faulting appears to be confined to the burned outcrop and to areas in the Roan Cliffs. Neither of these areas will be mined.

Fractures

Fracturing parallels the structure and is the result of upwarping of the San Rafael Swell and isostatic adjustments. Pine Canyon and lineations in and behind the Roan Cliffs are the most prominent topographic expression of the fracture pattern. Rose diagrams were used to designate the fracture pattern found in the permit area. Fractures shown on diagrams all have a dip within five degrees of vertical. Most fracturing tends to exhibit a northwest to west northwest pattern.

Pyrite, Clay and Alkalinity

Three coal zones of five will be mined in the project area: Gilson; Rock Canyon; and, Sunnyside. The strata immediately (within 10 feet) above and below the coal seams show extreme lithologic variability. The variability is an inherent part of the geology of the coal seams in the Blackhawk Formation.

The roof and floor rock of all three seams, located in the middle of the Blackhawk Formation, contain small amounts of disseminated pyrite. Detailed logging seems to indicate a direct correlation between the amount of carbonaceous material and the pyritic content. Consequently, coal has the greatest pyritic content, followed by bone coal and carbonaceous mudstone. Average sulfur content in the mineable coal seams in the permit area is 0.65 percent, 0.10 percent is pyrite. The roof and floor contain considerably less pyrite.

The roof and floor rocks may produce a moderately alkaline leachate. The geologic section chiefly responsible for strong alkalinity is the Mancos Shale and its associated high content of gypsum. Most of the natural surface and ground waters in the permit area found stratigraphically above the Mancos Shale have a pH near or slightly above 8. Water moving through the roof and floor rocks in the permit area have similar alkalinities (@ pH 8.0).

Ground Water Information

Existing Resources

Ground water in the Sage Point-Dugout Canyon Project area, like ground water in other parts of the Price River drainage basin, occurs under both confined and unconfined conditions. Unconfined water exists primarily in shallow alluvial or colluvial deposits along the largest perennial and intermittent streams. It also exists in the soil mantle and the upper few tens of feet of the underlying consolidated rocks where the rocks have been extensively weathered and fractured. Confined water exists at greater depths where a relatively impermeable bed overlies a more permeable water-bearing bed. These confined aquifers generally have their source of recharge in an outcrop area some distance up-gradient. Perched aquifers exist where a relatively impermeable bed lies beneath a water-bearing bed. There may be some leakage through either or both overlying and underlying confining beds. Where such leakage occurs, the aquifer may be a source of recharge to other overlying and underlying aquifers lying below the potentiometric surface.

Regional Ground Water Hydrology

The occurrence and availability of ground water in the general mine area is controlled principally by its geology. Unconsolidated deposits of Quaternary age are the most permeable formations; but consolidated sediments of Cretaceous and Tertiary age contain the most extensive water-bearing beds. Sandstones serve as the principal water-bearing strata in consolidated rocks. Their ability to yield water is controlled not only by the size of the sand grains, the amount of cementation and the degree of fracturing, but more importantly by the existence of numerous relatively impermeable interbedded shale and mudstone stringers. These stringers inhibit significant recharge from much of the overlying lands and from vertical movement of the water in the water-bearing beds.

The available regional ground water data suggest that most of the recharge is from direct infiltration in the upland areas and that the recharge rate is probably less than five percent of the annual precipitation (USGS 1979). Unconfined or water-table conditions may occur in alluvium and in the upper few feet of weathered bedrock. Where these materials are underlain by relatively impermeable beds, the water may be perched.

Water flows from the recharge areas at the higher elevations to discharge areas at the lower elevations. The types of geologic formations through which the water in the regional system is moving suggests that the maximum rate of movement is only a few feet per year.

Ground Water Use

In the affected area, there has been no development of ground water in either the perched aquifers or the regional (areal) aquifer. Three wells were drilled in the north adjacent area, but these wells were for monitoring purposes only. Discharge occurs from natural sources such as widely scattered springs, seepage into streams and evapotranspiration by native vegetation. If the water supply of any owner of vested water right is injured as a result of the mining activities, the applicant will replace that water supply in a manner consistent with applicable State law.

Ground Water Quality

The quality of ground water in the Price River drainage is not well established. The quality varies greatly, depending on geology, physiography and elevation. The best quality occurs in or near mountain recharge areas and the poorest quality in lowland areas. Along the fringes of the plateau and in the Book Cliffs, dissolved solid concentrations are generally 500 to 1,000 milligrams/liter. In the bedrock of the rest of the area, concentrations are generally 500 to 1,000 milligrams/liter, except in the Mancos Shale and soils derived from it, where concentrations usually exceed 1,000 milligrams/liter.

As indicated by the long period of time required for ground water levels to stabilize following well perforation (see Table IV-B.7), the permeability of the aquifers is low. This low permeability makes well sampling difficult and precludes the collection of good ground water quality data from wells in the permit area. Consequently, the applicant has assessed the quality of ground water in the permit area by collecting and analyzing water samples from a wide variety of springs. Because the samples were taken immediately after the water emerged from the aquifer, the data provide a good indication of the quality of water within the aquifer.

Also, three samples were taken from abandoned mines in Dugout Canyon, when the mines were opened up for an inspection of the old workings.

Ground Water Hydrology

Ground water parameters studied in the permit area include recharge, movement, storage, water level fluctuations and discharge. Data were collected from five monitoring wells.

Recharge

The exposed sandstones in the Book Cliffs provide recharge areas for the regional (areal) ground water system through direct infiltration of precipitation and streams. The alluvium and soil mantle provide recharge areas for local perched ground-water systems. Water enters the sandstone from direct precipitation on the outcrops and as seepage from streams that flow across them. Precipitation that enters the soil mantle and alluvial deposits recharge small local basins. This water moves a few thousand feet, at most, before it infiltrates the underlying bedrock. Some of the water in the sandstone moves into the regional ground water system. The remainder is discharged at springs where the sandstone aquifers have been deeply incised by canyons.

The annual recharge from precipitation (the only source of recharge in the mine area) in the six small drainge basins that compose the project area was computed using a five percent recharge rate (USGS 1979). The estimated rate is probably greater than the true rate, because it is a probable maximum. Moreover, impermeable outcrops of shales and mudstones cover large tracts in the study area, thus preventing or greatly limiting recharge. The computed average annual recharge is about 2,200 acre-feet in the hydrologic area monitored by the applicant, which approximates the permit area.

Movement

Ground water moves from the recharge areas down-gradient in the direction of the slope of the water table or potentiometric surface and approximately at a right angle to the water-level contours. The general direction of ground water movement in the regional aquifer is northward, but the direction may differ locally because of changes in rate of discharge or geology. Local

fractures, faults or other geologic phenomena may cause a change of permeability which, in turn, may cause a local deviation in the direction of ground water flow. A contour map of the potentiometric surface was prepared from ground water levels measured in the general area (refer to page III-118a, Wahler Associates Report). An interpretation of the available data in conjunction with the geology of the general area suggests that the water in the consolidated rocks move northward in the direction of, but not nesessarily at the same gradient, as the dip of the beds.

Ground water is not present everywhere in the soil mantle and alluvium. There are no wells in the alluvial aquifers. The alluvial deposits in the bottom of canyons, are long and narrow and of limited extent. The body of water in a deposit of alluvium may extend beyond the limits of the alluvium into the weathered upper part of the consolidated rocks. Where unconfined ground water is present in the alluvium and weathered bedrock, it generally moves in the direction of the slope of the overlying land surface. The direction of movement of the unconfined water is toward the bottom of the canyons and then down the axis of the canyons.

The average permeability and porosity values of the well core samples were used to estimate the velocity of ground water in the regional aquifer to be 0.8 feet/year (see revised Wahler Report submitted February 4, 1983).

While this velocity is a rough estimate, it suggests that the average velocity of water in the regional (areal) aquifer (the consolidated rocks) is very slow. The velocity of ground water may differ locally in fractures and along bedding planes.

In order to obtain more accurate permeability data, slug injection aquifer tests were done on three wells in the mine area. The results of these aquifer tests are presented in the report prepared by Wahler Associates (refer to page II-118a of the MRP).

Water Level Fluctuations

Measurements of ground water levels in the permit area began in November 1979. Water levels in five exploration holes and in two idle mines in Dugout Canyon are measured at monthly intervals.

Water levels in the observation wells are still recovering from the initial perforation, but some seem to be approaching the true static level (Table IV-B.7, page II-83).

Water levels in the unconfined alluvial aquifers, including the upper few feet of saturated weathered bedrock, closely follow the fluctuation in the rate of spring discharge. The high and low ground water levels precede and lag behind, resepctively, the peak and low flow rates of spring discharge. The time period between a peak water level and a maximum rate of spring discharge depends on the distance between a given point in the aquifer and a spring which drains the aquifer.

The fluctuations in water levels and discharge may vary somewhat from one year to another. The variations result in response to the amount of winter precipitation and to the variability, in both time and length, of the snowmelt period. In the Sage Point-Dugout Canyon project area, the peak water levels in the unconfined aquifer should occur between late April and early June, approximately coinciding with or shortly following the peak snowmelt and runoff period.

Conversely, water-level fluctuations in the areal aquifer respond principally to long-term precipitation patterns. Recharge to this aquifer probably occurs at a much more constant rate than to the alluvial aquifers, because the very low permeability of the rocks restricts and evens out the rate of movement of the infiltrating water. Better data regarding the water level fluctuations of the areal aquifer will be acquired as the water levels in the observation wells are measured over the next several years.

Discharge

Nearly all the water discharged from the areal aquifer in the project area is subsurface flow that moves beyond the boundaries of the project area.

The quantity of underflow is estimated at 90 acre-feet/year. The actual quantity is probably less than this because the average permeability (K) of the saturated materials is smaller than that used in the computations. The K that was used is from laboratory measurements of a three-foot section of sandstone, whereas much of the aquifer is composed of shales and siltstones which have lower permeabilities. A reasonable estimate of underflow moving out of the project area in the areal aquifer seems to be in the range of 10 to 90 acre-feet/year.

Surface Water Information

Existing Resources

The Sage Point-Dugout Canyon Project is located in the Price River drainage basin of the high plateaus of the Utah section of the Colorado Plateaus Province. The Price River basin is hydrologic unit 14060007 in the national drainage basin cataloging program of the Office of Water Data Coordination within the United States Geological Survey (USGS).

The headwaters of the basin are about 40 miles west of the proposed coal mines. The Price River meets the Green River about 40 miles southeast of the proposed project. The Green River flows southward from its confluence with Price River approximately 75 miles, until it discharges into the Colorado River. The Price River drainage basin contains some 1,900 square miles, including 61.54 square miles in the smaller basins which drain the project area.

The project area is located on the north central flank of the Price River drainage basin. The Soldier Creek drainage, including Fish and Pine creeks (two principal tributaries), contains the western half of the project area. The confluence of Soldier Creek and the Price River is about six miles downstream from the southern edge of the project area and about two miles east of the town of Wellington. Dugout, Pace and Corbula creeks are the principal streams that drain the eastern half of the project area. These three streams merge near the south edge of the area and continue on until they discharge into Grassy Trail Creek, seven miles southeast of the project area. The confluence of Grassy Trail Creek and Price River is downstream another 15 miles, about 10 miles upstream from Woodside.

The streams which drain the project area discharge into the Price River only during spring-snowmelt runoff periods and when occasional floods result from summer rainstorms. For most of the year, water in these streams is dissipated below the foot of the Book Cliffs, well above the confluence with the Price River. The water is consumed by evaporation from the streams and by transpiration from streambank vegetation. The only exception is a diversion from Soldier Creek in SW1/4, Section 19, Township 13 South, Range 12 East. This water is diverted into Anderson Reservoir for irrigation of lands near the south side of the project area. In addition, some water has been diverted in past years from other streams into small, less than 10 acre-feet capacity, stock and irrigation ponds.

The average altitude of the drainage basins is moderately high, ranging from 6,779 feet in the Corbula Creek drainage to 7,943 feet in the Pine Creek drainage. The topography above the foot of the Book Cliffs is rugged, with as much as a 3,280 foot difference between the minimum and maximum altitudes. There are many steep slopes in streams and on hillsides.

Watershed Characteristics

The aggregate drainage area of the six small basins that may be affected by the construction and operation of the Sage Point-Dugout Canyon Project is 61.54 square miles. The basins range in size from 3.53 square miles for Pine Creek (a tributary of Soldier Creek) to 29.91 square miles for Soldier Creek and its tributaries (physical conditions of drainge basins, Table IV-B.9).

Corbula Creek

The Corbula Creek headwaters are located in the Book Cliffs in the south-central part of the project area. The stream flows generally southward and eventually discharges into Dugout Creek.

Corbula Creek has a short perennial reach near springs at hydrologic data sites 61 and 62 (see Hydrology Map, G03-0148).

Dugout Creek

Dugout Creek has its headwaters in the Roan Cliffs near the northeastern side of the project area. It flows southwestward to the lower edge of the Book Cliffs and then generally southward to hydrologic data site 69, near where it joins Pace Creek. The combined stream continues southward another five miles, where it is joined by Corbula Creek. After flowing southward another two miles, it discharges into Grassy Trail Creek, which flows southeastward until it discharges into Price River.

Dugout Creek is usually perennial above site 69. However, flow may cease in the fall and winter when late summer and fall precipitation has been light and when cold weather freezes the stream.

Fish Creek

Fish Creek has its headwaters in the Book Cliffs near the central part of the project area. It flows generally south-westward then joins Soldier Creek.

The creek is intermittent, having several alternate flowing and nonflowing reaches. Water flows in this upper reach where the cross-sectional area of underlying alluvium is small or missing, and the stream disappears into the alluvium where the cross-sectional area is larger. The lengths of the reaches having flowing water increase and decrease depending upon antecedent weather conditions. The lower reach is usually dry most of the year.

Pace Creek

Pace Creek has its headwaters in the Roan Cliffs located northeast of the project area. It flows southwestward across the east end of the project area to hydrologic data site 70, near the confluence of the two streams which are at the lower end of the monitored part of the drainage basin. The combined streams continue on toward Price River.

Pace Creek is a perennial stream above the Book Cliffs escarpment and intermittent below the cliffs. Flow may cease in the fall and winter when late summer and fall precipitation has been light and when cold weather freezes the stream.

Pine Creek

The headwaters of Pine Creek are located in the area between the Book Cliffs and the Roan Cliffs near the north-central part of the project area. It flows in a generally westward direction and eventually discharges into Soldier Creek 35 meters (120 feet) below hydrologic data site 23. The combined streams continue to the Price River as described for Soldier Creek.

Pine Creek usually contains water throughout its entire length. However, during periods of unusually low precipitation there are dry reaches between springs that feed the stream.

Soldier Creek

The headwaters of Soldier Creek are located in the Roan Cliffs and in Whitmore Park, which is between the Book Cliffs and the Roan Cliffs in the northwest part of the project area. It flows southward to hydrologic data site 68. Soldier Creek discharges into the Price River about six miles south of hydrologic data site 68 (see Map G03-0148).

Anderson Reservoir, which is on a small tributary of Soldier Creek, is used to store water that is diverted from Soldier Creek. Most of the stored water is runoff from snowmelt, but some water is diverted to the reservoir throughout much of the year.

Solider Creek is a perennial stream in certain sections and intermittent in others. The reach between the diversion and site 68 would be perennial during most years if the water were not diverted for irrigation during the low-flow period.

Springs

An inventory of springs located in the project area was made between 1976 and 1981.

All of the larger springs and a majority of the smaller springs were sampled; springs representing all geologic conditions were sampled (for locations see Map G03-0148).

Most of the springs issue at or near the bottom of stream channels. Some springs issue from fractures and bedding planes in consolidated formations. A few small springs with flows of less than one gallon/minute issue at seepage areas along some canyon walls.

The wide variability of discharge rate, temperature, and specific conductance of most springs suggest a local body of ground water near the surface. The magnitude and duration of large discharges from springs occurs in early spring only after appreciable winter precipitation. Recharge derived from snowmelt is rapid, suggesting both high permeability and shallow depths to the water table. In addition, the large range in discharge rate over a short period of time, with a very low minimum in the summer, suggests that the body of ground water supplying the spring is small.

The seasonal fluctuation in temperature also suggests that the body of ground water supplying the spring is small. The water temperature changes parallel the seasonal air temperature. This relationship indicates that the water table is near the land surface and that the body of ground water is relatively thin (Table IV-B.11 and 11a).

The quality of the spring water, as measured by specific conductance, fluctuates seasonally and approximately in synchronization with the fluctuations in discharge. The water quality is best when the discharge rate is largest and poorest when the discharge rate is smallest. The quality-discharge relationship also indicates that the aquifers supporting the springs are small. Some springs appear to discharge totally or in part from consolidated rocks rather than from alluvium. In some areas, the upper few feet of the consolidated rocks underlying the soil and alluvium is highly weathered and fractured. Water in the weathered and highly fractured parts of the unconsolidated rocks may move as freely as it does in the alluvium. Most of the recharge does not infiltrate the consolidated rocks beyond a few feet, because the rocks are only slightly permeable below the weathered zone. This is not inconsistent with the conclusion that most of the spring discharge in the project area is from several small, local unrelated near-surface aquifers.

Some or all of these aquifers are perched, and thus they have limited or no direct hydraulic connection with the underlying areal aquifer. The water table in a perched aquifer near well 5-1 is at approximately the same level as the bottom of the stream channel.

In the project area, the only spring improvements are a few small earthen ponds and two short pipelines to stock watering-troughs, all in various stages of disrepair.

Water Quantity

The data from periodic measurements at 12 surface water monitoring sites in the project area are presented in the MRP. The data from recorder measurements taken on Soldier Creek and Dugout Creek suggest a mean annual flow estimated at 1,000 acre-feet per year and 558 acre-feet per year, respectively.

The minimum uncontrolled flow in all reaches of all streams in the project area is less than one cubic foot per second for several months of the year. Maximum flows occur during spring snowmelt and summer torrential rainstorm periods.

Water Quality

Water sampling in the project area was initiated in July 1976, to determine baseline chemical constituents and suspended sediment in streams. Chemical and suspended sediment analyses for samples collected at 13 stream sites during 1976-81 are reported in the MRP.

The quality of the surface water in the project area is better than that of the Price River. The observed range of dissolved-solids concentration in streams in the project area was 215 to 3,375 milligrams/liter, whereas in the Price River at Woodside during water years 1976-78, the observed range was 1,150 to 6,990 milligrams/liter. The difference is primarily a result of the

concentration of sulfate which was 25 to 980 milligrams/liter in the project area streams and 640 to 4,300 milligrams/liter in the Price River. These higher concentrations of dissolved-solids and sulfates in the Price River are caused by the tributary streams dissolving sulfate (and to a lesser extent other constituents) as they flow across Mancos Shale or soils which are largely derived from that shale.

The suspended sediment concentrations in streams in the project area during water years 1976-78 ranged from 0.2 to 8,353 milligrams/liter. By way of comparison, for the same period of time the concentration range in the Price River at Woodside was 19 to 69,600 milligrams/liter.

The observed range of pH in project area streams is 7.9 to 8.9. The bicarbonate range is 271 to 514 milligrams/liter. Both measurements indicate alkaline water.

Total iron concentrations ranged from 8 to 39,500 micrograms/liter, in contrast to dissolved iron, which was 10 to 4,430 micrograms/liter. The observed range of total manganese was 6 to 2,500 micrograms/liter, in contrast to dissolved manganese, which was 4 to 1,930 micrograms/liter. The change in concentration of both iron and manganese varies together. The high total concentrations of both is probably associated with sediment in the water samples.

Water quality data for 1980 include four seasonal measurements for Dugout Creek, Pine Creek, Pace Creek and Soldier Creek, the four streams having the largest discharge in the project area.

For the parameter total dissolved solids, each stream has the lowest value in spring and highest in winter, which correspond to the times of high and low discharge, respectively.

For the parameter pH, no regular pattern of seasonal variation is apparent. However, pH generally fluctuates within a narrow range of alkalinity. For almost every stream, the difference between the highest and lowest measurements over a period of four years was only 0.5 pH units.

Total iron has a peak value during the spring runoff, with lower values throughout the rest of the year. No regular pattern of variation is apparent for the rest of the year, but the values do not fluctuate greatly in comparison to the spring peak value. Dissolved iron has low values throughout the year, almost always less than 100 micrograms/liter, with no regular pattern of variation.

Total manganese, like iron, has a peak value during spring runoff. Again, values for the remainder of the year are low, with the minimum value occurring sometime in summer or early fall.

UMC 817.41 Hydrologic Balance: General Requirements

Applicant's Proposal

The applicant proposes to control surface runoff from the disturbed and undisturbed areas by utilizing a combination of structures; i.e., diversion channels, culverts and sedimentation ponds. Runoff from disturbed areas will be routed through the sedimentation ponds. Undisturbed drainage will bypass the operation via temporary diversions. Processing and associated operational waste will also be controlled through use of evaporative/sewage treatment lagoons.

Impacts to the ground water system will be minimal and will be monitored via a series of observation wells, in-mine sampling and spring sampling which is part of the ground water monitoring program.

Any impacts of the mining operation on the surface water system will be determined through implementation of the surface water monitoring plan and analysis of the data collected. All discharges to receiving waters must be in compliance with applicable State and Federal water quality regulations and effluent limitations.

Sunedco will minimize changes or impacts to the hydrologic balance by controlling channel velocities, riprapping appropriate channel sections, providing contemporaneous revegetation and by preventing acid- or toxic-forming materials from entering and contaminating the hydrologic system.

Compliance

The operator has proposed designs utilizing best technology control practices to minimize changes to the prevailing hydrologic balance in both the mine plan and adjacent areas. The following sections (UMC 817.42-.57) describe specific design details for the hydrologic facilities proposed.

Reclamation practices will also be instituted to minimize changes to the hydrologic regime.

The applicant's proposal will meet the general requirements for this section when the stipulations in the following sections are met.

UMC 817.42 Water Quality Standards and Effluent Limitations

Applicant's Proposal

The applicant proposes to mitigate impacts to receiving streams below disturbed areas by employing sedimentation ponds, diversions, grading slopes and seeding and planting disturbed areas. Structures controlling water quality will be installed prior to construction and maintained until the

disturbed area has been restored and revegetation requirements of UMC 817.111-817.117 are met and quality of the untreated discharge from the disturbed areas meet the State and Federal water quality standards and effluent limitations of receiving streams for all sedimentation ponds.

It is not anticipated that there will be any discharge from underground workings. All water encountered will be used within the mines.

Compliance

The information presented in the mine plan does not indicate that effluent limitations established by UMC. 817.42 will be met. It does show the degree of entrapment that will take place within sedimentation ponds at the coal and rock waste disposal sites during a 10-year, 24 hour precipitation event. Although the sizing of the ponds at the coal and rock waste disposal sites meet the volume capacity of a 10-year, 24-hour event in accordance with the remanded version of UMC 817.46, it appears that discharge will take place during that event which will exceed State and Federal effluent limitations.

Remedial measures will have to be instituted to meet water quality standards. In the event that unpredictable quantities of water are encountered underground which cannot be contained in the mine, such measures may involve enlarging sedimentation ponds to contain mine discharge, using flocculents or other treatment methods to settle suspended and dissolved solids as necessary.

Stipulation 817.42-(1)-DD

1. The applicant has established the degree of sediment entrapment that will take place at the coal and rock waste disposal sites during a 10-year, 24-hour precipitation event. The applicant shall also provide an estimate of anticipated sediment influent concentrations characteristic of the undisturbed drainages so as to determine the quality of effluents from both waste disposal sites and undisturbed drainages. Final designs for sedimentation ponds must show evidence of compliance with UMC 817.42 through design criteria that will meet State and Federal water quality and effluent limitations. The final pond designs shall be submitted to the regulatory authority at least 120 days prior to planned sedimentation pond construction.

UMC 817.43-.45 Diversion and Conveyance of Overland Flow, Stream Channel Diversions and Sediment Control Measures

Applicant's Proposal

Several diversions will be employed within the permit area to divert perennial sections of streams, to protect fills and property and to avoid danger to public health and safety. Appropriate sediment control measures will be instituted to prevent additional contributions of suspended solids to

streamflow and runoff outside the permit area. These measures will consist of, but not be limited to; maintenance of appropriate gradients, lining channels and revegetating. The use of energy dissipators will be employed as necessary to reduce velocities and prevent erosion at discharge points.

The mine plan calls for two permanent diversions, one on Soldier Creek and one on Dugout Creek. The Soldier Creek diversion will divert flow from Soldier Creek to the proposed Anderson Reservoir at a maximum rate of 20 cfs. The Dugout Creek diversion will divert flow from Dugout Creek to the proposed Dugout Reservoir at a maximum flow rate of 10 cfs. The two diversions will be designed to pass a 100-year, 24-hour flood.

Temporary diversions will be installed to divert flow away from disturbed areas. These diversions will be removed upon final reclamation. Two diversions will be constructed above the central facilities which will empty into natural drainage ways. Flow from these diversions will eventually enter Soldier Creek.

Three diversions will be constructed to divert runoff away from the preparation plant. The system employs the use of check dams placed in natural drainage ways to restrict and direct the flow from the undisturbed areas into diversions. The flow will eventually enter Soldier Creek. Diversions will be placed on the uphill slopes of both Fish Creek Canyon and Dugout Canyon portal areas to divert runoff away from the portal facilities. They will be located at the bottom of the first cut or on cuts constructed during exploration to minimize additional disturbance. The diversions will direct the runoff into existing natural drainages and into culverts underlying the portal areas. The flow from the undisturbed areas will eventually discharge into the main channels of Fish and Dugout creeks. These designs will be temporary structures, to be reclaimed after mining ceases. They will be designed to transmit flows generated by a 10-year, 24-hour precipitation event.

Surface runoff from areas above the rock waste disposal sites will be directed away from the fill and sedimentation ponds by diversions (Dugout diversions #1 and #2) designed to pass a 100-year, 24-hour flood with a maximum allowable velocity of five feet per second (fps). One diversion will be constructed above the Fish Creek disposal site and two diversions constructed above the Dugout Creek waste disposal site. A third diversion (Dugout Canyon diversion #3) will be designed to convey the 25-year, 24-hour runoff from within the disturbed area to a sedimentation pond.

Six diversion structures will be constructed to control surface runoff near the preparation plant waste disposal areas (D03-0165). Saddle Valley diversions #1 and #2 and Boot Valley diversion #1 are intended to divert runoff away from the preparation plant waste. The diversions will be designed to convey a 100-year, 24-hour flood with a maximum velocity of 5 fps. Saddle Valley diversion #3 and Boot Valley diversion #2 and #3 will be constructed to direct surface runoff from the fill area into sedimentation ponds. These diversions will be designed to pass a 25-year, 24-hour flood.

The undisturbed drainage above the Fish Creek portal area will be routed under the portal sites through large culverts. The culvert diversion is designed to carry the runoff from a 100-year, 24-hour precipitation event.

Compliance

The applicant has supplied conceptual designs for all culverts and diversions. Final designs will be submitted by the applicant 120 days prior to construction.

Stipulations 817.43-.45-(1, 2)-DD

1. The applicant must submit, at least 120 days prior to construction, longitudinal cross sections and design calculations for culverts emplaced under the portal areas used to divert undisturbed runoff. (The Division suggests that the Dugout Creek culverts be sized to transmit at least a 50-year, 24-year event.) Culverts shall be fitted with trash racks at the inlet to help prevent plugging.

2. All culverts and diversions shall discharge onto a protected surface (i.e., riprap, conveyor belting, flexible downspouts, etc.) to prevent scouring and erosion.

UMC 817.45-.47 Sediment Control Measures, Sedimentation Ponds and Discharge Structures

Applicant's Proposal

Sedimentation ponds will be used to minimize and control the sediment associated with runoff from disturbed areas. The proposed sedimentation ponds will be constructed to contain the expected runoff and sediment load from a 10-year, 24-hour precipitation event in the area. Each pond will be designed and constructed under the supervision of a qualified, registered professional engineer. The sedimentation ponds will be constructed before any disturbance of the undisturbed area to be drained into the pond. The top width of the embankments shall not be less than (H + 35)/5, where H is the height of the embankment. The embankment upstream and downstream side slopes will not be steeper than 1v:2h. All pond structures will be regularly inspected by a licensed individual as required by regulation. Measuring devices will be installed to determine when the ponds have filled with sediment to their clean out level. Water monitoring stations will be established at the outlets of the ponds.

The applicant plans to construct a total of sixteen sedimentation ponds to contain and settle sediments associated with runoff from disturbed areas. A dual-celled sedimentation pond will be constructed at Fish Creek and Dugout Creek portals. A single cell sedimentation pond will be incorporated at the central facilities and coal preparation plant. The rock waste disposal site

at Fish Creek will utilize two sedimentation ponds and the rock waste disposal site at Dugout Creek will utilize three sedimentation ponds. There will be seven sedimentation ponds employed at the two coal waste disposal sites, four sedimentation ponds at the Saddle Valley site and three at the Boot Valley site.

The applicant plans to install an emergency surge pond to contain slurry waste discharged from the coal preparation plant if an emergency situation occurs.

A three-celled total containment sewage pond (sewage lagoon) will be constructed to process waste water produced at the portal sites, central facilities and coal preparation plant.

The applicant proposes to construct settling ponds to contain coal fines that are washed from the drive and transfer stations on the conveyor system. The ponds will be cleaned periodically by a front-end loader.

The applicant plans to reclaim all areas. Upon completion of mining operations the settling ponds, emergency pond and sewage ponds will be cleaned, leveled, covered with top soil and revegetated. The sedimentation ponds will remain until the quality of the untreated discharge from disturbed areas meets the State and federal water quality standards and effluent limitations of receiving streams.

Compliance

Preliminary conceptual designs and calculations have been included for the majority of the hydrologic structures to be implemented on the project area. However, the actual final designs were not included in the plan.

The Division received a statement from the applicant in April of 1982, setting forth the date November 30, 1982 when final designs would be submitted for runoff control structures. These final designs have not been received to date. It is the Division's understanding that some minor revisions may be proposed by Sunedco which could change the final designs somewhat. Consequently, the Division will require submission of the final designs a minimum of 120 days prior to the onset of planned construction. This should allow ample time for regulatory review and revision if necessary.

Stipulations 817.45-.47-(1-6)-DD/DWH

1. At least 120 days prior to planned sedimentation pond construction, the applicant must demonstrate to the regulatory authority that the final designs for the sedimentation ponds at the central facilities, coal preparation plant and portal areas will meet all applicable State and Federal water quality effluent limitations. There shall be no outflow through the emergency spillway during the passage of runoff resulting from a 10-year, 24-hour or lesser precipitation event.

2. At least 120 days prior to surge pond construction, the applicant must submit for regulatory authority approval, final designs demonstrating that the emergency surge pond for the preparation plant is sized to contain the working volume of treatment fluids, with the appropriate freeboard, and constructed to meet design criteria for embankments and sediment removal designated in UMC 817.46.

3. Design of the sewage lagoon must be approved by the Division of Environmental Health. Prior to start of construction, the DEH letter must be forwarded to the regulatory authority.

4. At least 120 days prior to any pond construction, the applicant shall design and submit for regulatory authority approval, a plan for the disposal of dregs and waste from the sedimentation ponds, emergency surge ponds and sewage ponds. (The Division recommends disposal of this material at the coal or rock waste disposal sites, however, alternative methods may be suggested.)

5. The applicant shall construct diversion ditches to direct runoff away from settling ponds at drive and transfer stations pursuant to design standards of UMC 817.43. These diversion ditches must be constructed at the same time as the settling ponds.

6. The applicant shall obtain approvals from both the State Division of Water Rights, the Division of Environmental Health (Bureau of Water Pollution Control) and the Federal MSHA (30 CFR 77.216 regulations) as required for the construction of those ponds, dams and reservoirs (i.e., Anderson & Dugout reservoirs) which meet or exceed the appropriate regulation requirements. The applicant shall provide the regulatory authority with copies of the approvals prior to the construction of the same.

UMC 817.48 Acid-forming and Toxic-forming Materials

Applicant's Proposal

Mining practices will be carried out in such a manner as to avoid pollution of ground waters and surface waters from acid and toxic-forming materials. All foreseen instances will be abated by implementing diversions, slope shaping and impoundments. Samples will be taken in accordance with an approved monitoring program at all point source discharge outlets to insure effluent limitations are met. The results of chemical analyses for overburden and coal samples are presented on pages II-39, 40, Section 4.2, Volume II of the MRP.

Compliance

The applicant has had roof, floor and coal samples chemically analyzed which would indicate a low potential for contamination problems due to acid- or toxic-forming materials. Other coal mining operations in the region have

not identified significant problems with any acid- or toxic-forming materials to date. The applicant has committed to demonstrate the nontoxicity and suitability of the sludge which will be contained in the containment lagoons before any is used for reclamation purposes.

Stipulations

None.

UMC 817.49 Permanent and Temporary Impoundments

Applicant's Proposal

The mine plan calls for the construction of two permanent reservoirs and several temporary sedimentation ponds. The two permanent dam structures will be designed by a registered professional engineer. A new dam structure will replace the existing dam at Anderson Reservoir. The new Anderson Reservoir will have an active storage capacity of 1,675 acre-feet with a sediment storage of 135 acre-feet and a flood stage of 120 acre-feet. The new Dugout Reservoir dam will be constructed west of Dugout Road. It will have an active storage of 525 acre-feet, a sedimentation storage of 20 acre-feet and a flood stage of 80 acre-feet.

UMC 817.49(a)(1)

Water from reservoir storage will be suitable for its intended use within the mines and at the central facilities areas for coal processing. A portion of the raw water will be diverted to treatment plants for potable use. It is anticipated that diminution of the stream will not occur below the stream diversions or reservoirs as a result of their implacement. The maximum amount of water diverted to the reservoirs will be limited to the applicant's water rights, which are 20 cubic feet per second (cfs) for Soldier Creek and 10 cfs for Dugout Creek. Runoff in excess of these amounts will continue to flow down the existing stream channel.

All dams, embankments and other impoundments, with the exception of the Anderson Dam, the Dugout Canyon Dam, and their associated diversion structures, will be completely removed and reclaimed upon cessation of mining activities. Sedimentation ponds will be removed last.

The reservoirs, along with the water rights, will be sold upon completion of mining and reclamation activities.

Compliance

The applicant has submitted preliminary conceptual designs for the proposed reservoirs and sedimentation ponds. These designs have been determined to be acceptable as conceptual plans. However, the final designs must be reviewed and approved by this Division, the State Engineer's Office and the State Division of Environmental Health. All sedimentation ponds or impoundments meeting the size requirements of 30 CFR 77.216 must comply with the requirements of that section.

MSHA

Stipulations 817.49-(1, 2)-DD/DWH

Same as Stipulations 817.45-.47-(1, 2)-DD/DWH.

UMC 817.50 Underground Mine Entry and Access Discharges

Applicant's Proposal

The applicant has stated that limited amounts of ground water are expected to be contacted underground during mining operations and that no mine discharge should occur.

Compliance

After researching the possible ground water quantities that could be produced in the mine, the Division concludes that ground water will be contacted during mining operations. Although low quantities are expected to be intercepted, actual quantities cannot be predicted at this time by either the Division or Sunedco. Therefore, Sunedco's inference that no ground water will be discharged should be modified to provide information on how underground mine effluent will be treated in accordance with UMC 817.50 in the event that larger quantities of ground water are contacted than can be utilized underground.

Stipulation 817.50-(1)-DD

1. At least 120 days prior to construction of the portals the applicant shall submit for regulatory authority approval, a plan for handling and treating all mine water discharges. This informtion is needed because actual quantitites of ground water intercepted cannot be predicted at this time. This plan will be in accordance with UMC 817.50.

UMC 817.52 Surface and Ground Water Monitoring

Applicant's Proposal

Sunoco Energy Development Company has used the DOGM's guidelines as a basis for establishing a surface and ground water monitoring plan for the proposed mine operation.

Baseline monitoring for most springs and streams was initiated in June of 1976. Five ground water observation wells were established in 1979. Sufficient baseline information has been collected to establish general baseline trends for the mine plan area. Operational monitoring data will be forwarded to the Division in January (includes an annual summary), April, July and October. Postmining monitoring results will be continued and results submitted to the Division until release of bond.

The applicant has surface water monitoring stations above and below the surface facilities on Dugout Creek, Fish Creek, Soldier Creek and Pace Creek. Additional surface monitoring sites are located on Pine Creek and Little Pine Creek for a total of 13 sites. Discharge and field data (pH, dissolved

oxygen, specific conductance, air temperature and water temperature) will be collected monthly from April through November. Flow measurements may not be made from December to March due to ice and snow problems (difficult access and interpretation of data complications). This plan will adequately address impacts to surface waters due to surface facilities in the permit area.

Ground water monitoring stations include five wells and 10 springs. The water levels in the five wells will be checked monthly from April through November and once in winter in early February. Discharge and field data will be collected from the spring sites quarterly (February, May, August and November). Chemical water quality parameters will also be checked for two of the springs during high and low flows. One spring site represents the perched aquifer and the other represents the areal aquifer. It is expected that this plan will adequately reflect impacts to the ground water resources due to underground mining.

The water monitoring program and boundaries of the study area were established to include the proposed permit area, mine plan area and enough adjacent territory to include any areas that may be indirectly impacted by the mines.

A NPDES permit has been applied for and issued to Sunoco Energy Development Company (Sunedco), #UT-0024031, as of June 1982 for any potential discharges from the sedimentation ponds and mines (see attached approval letter).

Compliance

The applicant's plan for the monitoring of surface and ground water resources will be adequate to identify significant changes or impacts to the prevailing hydrologic balance should any occur during or after mining and reclamation activities. The applicant's proposal will comply with this section.

Sunedco has presented sufficient data in their mine plan to define the seasonal variation in quantity and quality of springs and streams within and adjacent to the proposed mine plan area.

Stipulations

None.

UMC 817.53 Transfer of wells

Applicant's Proposal

The applicant plans to use the observation wells on the mine plan property as monitoring sites during mining. It is not anticipated that the applicant will transfer these wells in the near future. Upon cessation of operation and monitoring requirements, the wells will be plugged or transferred according to the applicable State and Federal regulations.

Compliance

The applicant's proposal will comply with the general requirements of this section.

Stipulations

None.

UMC 817.54 Water Rights and Replacement

Applicant's Proposal

The applicant owns or will own all the water rights on the proposed mine plan property. It is anticipated that mining will not diminish or interfere with the hydrologic regime. If a water supply of any owner of vested water right is damaged as a result of the mining activities, the applicant will replace that water supply in a manner consistent with applicable State law.

Compliance

The applicant's plan will comply with the general requirements of this section when the following stipulation is met.

Stipulation 817.54-(1)-DD

1. The applicant must submit to the regulatory authority copies of all appropriate water rights prior to development of such water rights.

UMC 817.55 Discharge of Water into an Underground Mine

Applicant's Proposal

The applicant states that surface water will be introduced into underground workings from water distribution systems at the portal areas. Surface water will be released from Anderson and Dugout reservoirs to pump houses where it will be pumped to the distribution systems at the portal

areas. The distribution systems will consist of handling and storage systems and afford water for fire protection, industrial use and potable water to the mines. During the first 10-12 years, potable water used for Dugout Canyon portal will be obtained from the abandoned Gilson Mine workings.

Compliance

Surface water utilized in the proposed mines will be apportioned from the water rights permits issued to the applicant for diversion of surface water from Soldier and Dugout creeks. Water discharged into the mine will be of proper quality for its intended use as a result of settling or, as in the case of potable water, by treatment. Other information will be required as mentioned in the stipulation.

Stipulations 817.55-(1-3)-DD

1. The applicant shall maintain and monitor a controlled flow rate into the mines and report flow rates (quantity) and quality of water discharged into the mine on a quarterly basis.

2. At least 120 days prior to initial construction (any construction within the permit area) , the applicant shall provide to the regulatory authority the proper approval from MSHA.

3. At least 120 days prior to portal construction, the applicant shall submit an underground map of the old Gilson workings depicting the location of water in the mine.

UMC 817.56 Postmining Rehabilitation of Sedimentation Ponds, Diversions, Impoundments and Treatment Facilities

Applicant's Proposal

The only permanent hydrologic structures remaining on the abandoned permit area will be Anderson and Dugout reservoirs and their respective diversions. The operator plans to sell these structures at the cessation of mining and reclamation operations with contigencies which hold the buyer liable for renovation of the structures. In the event these properties cannot be sold, the operator will be responsible for the renovation or reclamation of these properties.

Compliance

The applicant's plan will comply with the regulations set forth in UMC 817.56. However, the specifics of the future state approved transfer of water rights and owner liabilities must be provided to the Division upon cessation of operations.

Stipulation 817.56-(1)-DD

1. Prior to cessation of operations the applicant shall submit specific details of transfer of title to the Anderson and Dugout Reservoirs. This transfer agreement must incorporte any responsibilities the new owner will need to assume as part of reservoir maintenance.

UMC 817.57 Stream Buffer Zones

Applicant's Proposal

The applicant plans to disturb areas along Fish and Dugout creeks for the purpose of constructing mine portal pad areas. During operation, overland flow from undisturbed runoff will be directed underneath the portal pads via culverts. The applicant has submitted maps and cross-sections which detail pre- and postmining contours of the stream channels. The applicant plans to reclaim both of these areas. Plans call for the removal of the culvert from Dugout Creek, however, the applicant proposes backfilling the culvert in Fish Creek with concrete, gravel, earth or other suitable material to prevent collapse resulting from decay or other causes. Drainage will be allowed to cascade over the outslope of the portal pad (page I-296). This was proposed because the applicant concludes that removal of the culvert and recontouring would result in far greater disruption than would result from leaving the culvert in.

Compliance

The applicant does not plan to disturb any areas within 100 feet of stream channels except as described above.

Wildlife studies show that there are no fisheries in either stream.

More details are need on the reclamation of Fish Creek portal area to determine its feasibility. Diminution of water quality or quantity should not occur since the undisturbed runoff will not come in contact with the disturbed runoff or area.

Stipulations 817.57-(1, 2)-DD

1. Prior to any construction in the area the applicant shall establish markers establishing a 100 foot buffer zone along the perennial and intermittent streams adjacent to approved activities.

2. The applicant shall submit plans and calculations on long-term postmining reclamation stability and erosion control for the drainage channel of Fish Creek Canyon across and over the outslope of the portal pad to the point where it enters the natural drainage again. The plan will be submitted at least 120 days prior to construction of any discharge structures and/or erosion control measures.

UMC 817.59 Coal Recovery

Applicant's Proposal

Applicant will utilize both the longwall and room and pillar methods for mining coal. Equipment used in both methods will be equipped with the most modern, technically advanced supports and machinery available. The preparation plant will assure maximum recovery of coal and distribution over a wider market.

Compliance

Applicant is in compliance with this section.

Stipulations

None.

UMC 817.61-.68 Explosives

Applicant's Proposal

Minimal use of explosives is anticipated due to the mining methods proposed. Where use of explosives in underground construction activities is mandatory, Sunedco proposes to comply with state and federal laws concerning storage, transportation and handling.

The applicant does intend to utilize explosives for shaft development and overcasts which are subject to the requirements of UMC 817.61-.68.

Compliance

The applicant will be in compliance when a plan for storing, transporting and handling explosives is provided to the Division.

Stipulation 817.61-.68-(1)-SL

1. At least 120 days prior to construction of any surface facilities, the applicant shall submit a plan for approval by the regulatory authority for storage, transportation and handling of explosives addressing the requirements of 817.61-.68.

UMC 817.71-.74 Disposal of Underground Development Waste and Excess Spoil and Nonacid and Nontoxic-forming Coal Processing: General Requirements

Applicant's Proposal

Total coal waste from the preparation plant facility is estimated to be 807,000 TPY (tons per year). See Section UMC 817.81-.85.

Underground development waste from the Fish Creek and Dugout Canyon mines was determined to meet the definitive requirements of durable rock and will be disposed of in two durable rock fill sites located in Fish Creek and Dugout canyons, respectively.

Waste rock will be hauled by end-dump trucks to the disposal sites. Rock waste, at a maximum eight inch diameter, will be spread in two-four foot lifts followed by compaction. As the thickness of the fill increases, the fill will be benched into slightly weathered silt stone.

The maximum grade on the outslope of the fill will be 2h:1v. Twenty inch wide drainage terraces will be created on the fill at 40 feet vertical intervals. The terraces will be graded to a slope of 20h:1v toward the embankment. Any runoff collected on the benches will be routed downslope toward perimeter diversion ditches.

Underdrains consisting of colluvial sandstone material will be installed below both rock fill sites to allow free-flow movement of subsurface drainage.

The minimum static factor of safety for both rock disposal areas was determined to exceed that required in UMC 817.74. A qualified inspector will examine the rock fills throughout the construction, operation and reclamation phases. Periodic reports on the rock fill construction status will be submitted to DOGM.

A continuous drainage terrace at each fill site will be used as access for vehicles maintaining the equipment working on the fill surface. These drainage terraces will be used and maintained as Class III roads.

Compliance

Applicant had adequately addressed the requirements of 817.71-.74.

Stipulations

None

UMC 817.81-.85 Coal Processing Waste Banks

Applicant's Proposal

The applicant has selected two sites for coal prepartion plant waste disposal. These areas are the Saddle Valley and Boot Valley waste dumps. Four sediment ponds are proposed for containing the runoff from the Saddle Valley area and three ponds for Boot Valley. Surface runoff diversions have been designed to divert upslope surface runoff away from the preparation plant waste. Other diversions within the waste areas will route disturbed runoff to the sedimentation ponds. The coal preparation waste will be transported by conveyor belt to the northern end of the Boot Valley coal waste disposal site and be trucked to the Saddle Valley site or placed into the Boot Valley fill. The coal waste will be spread in lifts of less than 24 inches and compacted. Inspections by qualified personnel are planned at least quarterly throughout the construction phase. Copies of inspection reports will be retained at the minesite.

The waste material will be terraced, with the terraces sloped toward the embankment and graded to route drainage to sedimentation ponds. The average gradient of the fill slopes including the terraces is 3h:1v.

An underdrain consisting of durable sandstone will be constructed to conduct infiltrated water to the sedimentation ponds. No springs or seeps are present in the area.

Compliance

The applicant complies with Sections 817.81-.85.

Stipulations

None.

UMC 817.86-.87 Burning and Burned Waste Utilization

Applicant's Proposal

The operator has stated that a minimization for potential of spontaneous combustion of the processing waste material will be achieved if placement and compaction of the waste is carried out as specified under 817.85.

Compliance

Compliance will be achieved when a plan for extinguishing coal waste fires is submitted.

Stipulation 817.86-.87-(1)-SL

1. The applicant shall provide, for approval by the regulatory authority, an operational plan for extinguishing potential waste fires in accordance with UMC 817.87 and MSHA regulations. This must be submitted 120 days prior to initial construction.

UMC 817.88 Return to Underground Workings

Not applicable.

UMC 817.89 Disposal of Noncoal Wastes

Applicant's Proposal

Noncoal solid wastes generated from mining activitiy will be disposed of in large trash dumpsters located at the portal pads and central facilities. A garbage hauling service will be contracted to pick up and haul the garbage to a nearby dump or landfill.

All salvageable metal materials will be stored in a semi-trailer and periodically delivered to a scrap dealer.

There will be no abandonment of equipment.

Compliance

Applicant is in compliance with this section.

Stipulations

None.

UMC 817.91-.93 Coal Processing Waste: Dams and Embankments

Applicant's Proposal

The applicant has not proposed using coal processing waste in either dams or embankments.

Compliance

Any planned use of coal processing waste in dams or embankments will need to be submitted in final designs and in accordance with Stipulation 817.45-.47(6).

Stipulations

None.

UMC 784.26 and 817.95 Air Resources Protection

Applicant's Proposal

The applicant has proposed a plan to control fugitive dust at the Sage Point-Dugout Canyon Mine. The plan consists of: covered conveyors, paved roads, water spray with wetting agent at conveyor transfer points, and water and bag house at coal preapration facilities.

The applicant received a PSD permit from EPA in December, 1979 and a conditional permit from the Utah Bureau of Air Quality in May, 1981.

Compliance

The fugitive dust control plan has been evaluated and found to be in compliance. The applicant must comply with the conditions of the Bureau of Air Quality approval.

Stipulation

The applicant shall submit a letter at least 120 days prior to initial construction stating that the conditions outlined in the Bureau of Air Quality conditional approval will be met. (Conditional approval letter from Brent C. Bradford to Nicolas K. Temnikov dated May 18, 1981, attached to TA.)

UMC 817.97 Protection of Fish, Wildlife and Related Environmental Values

Applicant's Proposal

A wide variety of wildlife species utilize habitats within and adjacent to the permit area. Economically important and high interest species include mule deer, elk, pronghorn, mountain lion, bobcat, black bear, coyote, blue grouse, ruffed grouse, sage grouse, snowshoe hare, mountain cottontail and desert cottontail. Twenty-four species of raptorial birds have potential to inhabit the area at some time. Ten species have been observed on the permit area, and golden eagle, prairie falcon and Cooper's hawk nests have been found on-site.

Aquatic habitat is limited in the project area. None of the streams on the project area are considered to be of value as a sport fishery, but nongame species do inhabit them. It was jointly determined by DOGM and OSM, with imput from the U. S. Fish & Wildlife Service (USFWS) and the Utah Division of Wildlife Resources (DWR), that further aquatic macroinvertebrate study was not needed due to results obtained during a DOGM field investigation (see documentation in Permit Application Addendum, pages I-414A[3]-[6]). Physical and chemical characteristics of the streams that will be disturbed by mining activities were measured for the purpose of developing stream reclamation plans.

Construction of surface facilities will disturb approximately 335 acres of critical mule deer winter range. This is roughly three percent of the designated critical winter range in deer herd unit 27b, which encompasses the permit area. During a winter deer study on the permit area, heavy use was found in pinyon-juniper habitat and in areas adjacent to agricultural fields near proposed surface facilities. However, heavy snowfall forced the animals to move south of the proposed central facilities area into lower elevations.

Special habitats such as riparian areas, pinyon-juniper and alfalfa fields will be disturbed during construction or operation of surface facilities. The Book Cliffs provide nesting areas for several species of raptors, including golden eagles. Three raptor nesting areas, including an "active" (USFWS definition) golden eagle nest, have been found to be in areas that will be impacted by mining and associated activities. The Bureau of Land Management (BLM) and the USFWS have made recommendations to mitigate potential conflicts (see attachments to TA).

Conveyors will be constructed to carry coal from the mine portals to the preparation plant. These conveyors, if not constructed properly, could impede passage of large mammals, particularly in areas of critical winter range. Eureka Enery Corporation participated in funding a study undertaken by DWR to determine the Effects of Coal Development on Wildlife in Southeastern Utah. One portion of this study was the documentation of premining use of conveyor corridors by big game animals. Preliminary data do not indicate a definitive

migrating movement, but rather daily feeding movements, around the conveyor. The conveyor system as proposed has been designed so that there will be 12 feet or more of clearance between the conveyor belt and the ground through the majority of its route.

Other impacts to wildlife may occur due to road kills, particularly where main roads intersect big game winter range and human impacts such as harrassment and poaching.

The applicant has submitted a preliminary plan to mitigate adverse effects of the proposed project on wildlife (Permit Application Vol. II-407 to II-419 and Addendum). The applicant has committed to promptly reporting any sightings of threatened or endangered wildlife on the permit area, to constructing power lines to be raptor-proof, to prohibit firearms within mine boundaries and to try to avoid blasting and major earthwork during the critical wildlife breeding season of May and June. The conveyor system will be constructed so as not to create barriers to wildlife migration. The applicant has committed to carefully regulate the use of pesticides and to prevent fires.

Other potential mitigation measures include enhancing wildlife habitat adjacent to disturbed areas, carrying out an education program for mine personnel, carrying out measures to minimize wildlife-vehicular accidents and fencing areas potentially injurious to wildlife.

The applicant has stated that following mining, high value habitats will be restored, or even enhanced beyond their premining condition. Revegetation species selection, planting patterns and other specifications were designed to restore wildlife habitat as the principal postmining land-use. A variety of native species will be seeded or transplanted on the different disturbed areas, depending on premining habitat type, and a variety of cultural treatments will be used to enhance reclamation success. A complete revegetation plan including species lists for each vegetation type and site-specific revegetation procedure is given in Volume II, Section III-F.5 of the permit application.

The only threatened or endangered species which the applicant identified as having potential to appear on site is the black-footed ferret. The Utah Division of Wildlife Resources carried out a ground search for prairie dog colonies (ferret habitat) during late April and mid-May.

Compliance

The applicant has complied with Section UMC 817.97 for the most part. However, in some areas information is still lacking or specific commitments have not yet been made by the applicant. The applicant has not responded to recommendations made by the USFWS and the BLM to mitigate disturbance of nesting raptors. The appliant has not submitted final designs for the conveyor belts. The applicant has informed DOGM (pers. com., Charles Durrett, May, 1982) that post-construction studies of deer movements in relation to the conveyors would be undertaken.

At this time, the applicant does not have a finalized plan to mitigate disturbances of general mine-related activities to wildlife. When the following stipulations have been satisfactorially addressed, the applicant will be in compliance with this section.

On December 23, 1982 the Endangered Species Office of the U. S. Fish and Wildlife Service provided a memorandum stating that no species currently listed by the FWS as threatened or endangered will be affected by the Sage Point/Dugout Canyon Mine. The Endangered Species Office did point out that the rare plant species Hedysarum occidentale var. canon may be affected by the proposed action. This species is currently under review for possible listing as an endangered species.

Stipulations UMC 817.97-(1-3)-SL

1. WAITING FOR USFWS & BLM STIP ON RAPTOR PROTECTION

2. At least 120 days prior to any conveyor construction, final detailed designs showing exact location of the conveyor corridor, height of the belt from the ground along the entire length of the conveyor and the location and design of any proposed big game crossings must be submitted to the regulatory authority for approval. The design must be correlated with data collected during the DWR study (Utah Division of Wildlife Resources, 1982) on big game movements through, and general use of the chosen conveyor corridors. The applicant has committed as a part of a wildlife mitigation plan to carry out a big game movement monitoring program post-construction. Design of this monitoring program must be submitted to the regulatory authority for review and approval at least 120 days prior to conveyor construction. Based on the results of this study the applicant may also be required to carry out certain big game mitigation practices, including but not limited to the construction of one or more big game crossings.

3. A final mitigation plan must be submitted to the regulatory authority at least 120 days prior to conveyor construction detailing all measures Sunedco will take to lessen impacts of mining on wildlife in the permit area. All sections of the proposed mitigation plan which were indefinite in the permit application must be committed to, or taken out of the plan.

UMC 817.99 Slides and Other Damage

Applicant's Proposal

Applicant does not anticipate the occurrence of slides in the mine area. The assumption is based on geotechnical studies of foundation materials for roads and waste storage areas.

Compliance

The applicant has not stated that the requirements of 817.99 will be met.

Stipulation

1. The applicant shall notify the regulatory authority of any slide or surface failures which may occur during operations.

UMC 817.101 Backfilling and Grading Plan

Applicant's Proposal

The applicant states that some of the portal face cuts should remain as part of the post-mining topography because there could be excessive erosion, a static factor of safety at 1.3 would be difficult to meet, backfilling to a lesser angle would be impractical because there would not be sufficient material from the original cut to achieve the desired slope, and that handling the needed backfill material in from other sites would only create additional disturbance.

Compliance

817.101(1) (Remanded)
817.101(8) (Refers to 817.101(1))
Requires that "all spoils shall be ... graded to eliminate highwalls ... except ... where the underground mining activity is in steep slope terrain, reduce highwalls to achieve the requirements of this Paragraph. All applicable requirements for insuring a static sarfely factor of 1.5 ... shall be met.

The applicant is not in compliance with the requirements of this section.

Stipulation 817.101-(1)-PGL

1. The applicant stated that some of the portal face cuts ("highwalls") would remain, but not all. A clear description (maps and cross sections with text) of which "highwalls" will be left and which will be graded and reclaimed must be sumitted to the regulatory authority for approval at least 120 days prior to any portal construction. The description will include stability analyses of representative slopes for each of the highwall areas. Further, the applicant shall evaluate in these analyses the potential for use of material from other areas (mine development waste rock areas) to achieve lesser slope angles and acceptable slopes with a minimum static safety factor of 1.5. Since the portal areas to be reclaimed will be "graded before topsoil placement along the contour unless site-specific slope conditions would cause a safety hazard to the operator," a contingency plan for these described conditions must be submitted. Exactly how will a portal face be reclaimed where slope conditions are hazardous?

UMC 817.107 Regrading or Stabilizing Rills and Gullies

Applicant's Proposal

Not addressed.

Compliance

Although 817.107 is not addressed in the MRP, the applicant will be required to regrade and topsoil rills and gullies deeper than nine inches, as required by 817.107.

Stipulation

1. A written commitment is needed from the operator that when rills or gullies deeper than nine inches form in areas that have been regraded or topsoiled, the rills and gullies shall be filled, graded or otherwise stabilized according to Section UMC 817.111-.117; or when rills and gullies form of a lesser size they will be stabilized and the area reseeded or replanted if the rills or gullies are disruptive to the approved postmining land-use or may result in additional erosion and sedimentation.

UMC 817.111-.117 Revegetation

Applicant's Proposal

Nine vegetation community types have been identified as existing in areas of proposed disturbance. Communities present are Douglas fir, mixed conifer-mountain brush, pinyon-juniper, shrub-grass-juniper, greasewood-sagebrush, mixed conifer, deciduous streambank, Rush-grass and salt cedar-willow (described on pages II-285 through II-289). In addition to these, a farmland-weed community exists in an area of previous disturbance. This community was not sampled since data thus acquired would not be useful for revegetation.

Each of the first seven communities listed above were sampled for total vegetative cover, total ground cover, cover by species, productivity by life form and by species, tree density and species composition, size classes and tree stand maturity, shrub height and shrub density (pages II-290 through II-295). Statistical adequacy was achieved for all sampling data.

Reference areas were chosen to correspond with all disturbed community types, except for the Rush-grass and salt cedar-willow types. Both of these types are small in extent, and non-natural in occurrence, owing their existence to proximity to a reservoir. The farmland-weed community will be revegetated as the shrub-grass-juniper type, the original vegetation in the area. Reference areas were shown to be statistically similar to the corresponding affected communities, with the exception of the producitivity parameter in the deciduous streambank community. This is due to a difference in grazing pressure, with the reference area having been heavily grazed in the past. No other area within several miles of the mine is large enough or similar enough to the potentially disturbed community to serve as a reference area. The applicant has proposed to use the canopy cover of the deciduous streambank community reference area as the revegetation success standard for the affected area. Since the canopy cover is primarily composed of mature trees, this will be difficult to achieve during the responsibility period of reclamation. A recommended alternative is to use the tree density and herbaceous cover data collected for the affected area as the revegetation success standard. This approach is similar to the "baseline data" method as outlined in DOGM vegetation information guidelines.

No species currently listed as threatened or endangered has been found to occur on the project area. However, the Endangered Species Office of the USFWS has pointed out that the rare plant species Hedysarum occidentale var. canon may be affected by the proposed action.

The applicant has submitted a complete revegetation plan (pages II-303 through II-346). This plan adequately addresses timing of revegetation, species and seeding rates, planting methods and mulching techniques for both permanent and contemporaneous reclamation. Introduced species are only used to add stabilization and species diversity to the species mix, or substituted for another speices of the same growth form for which seed is not commercially available. Irrigation will be used only on steep slopes and preparation plant waste disposal sites (pages II-339 through II-340). Anderson and Dugout reservoirs will be left as permanent features.

Feasibility of Reclamation

The Sage Point-Dugout minesite receives 12-16 inches of precipitation annually. This amount is sufficient for the establishment of many of the native species of the area. Soldier Creek Coal Company has had good success with contemporaneous reclamation at their Soldier Canyon Mine, which is adjacent to the Sage Point-Dugout property.

Compliance

The applicant has complied with these sections, with the following exception. The revegetation plan as described in the permit application applies to areas which will be topsoiled. The applicant has been released from retopsoiling the Dugout and Fish Creek Canyon waste rock disposal sites because the soils on these sites are not salvageable (see UMC 817.21-.25). The applicant must still submit complete reclamation plans for these two waste rock disposal areas. The permit application will comply with these sections when the following stipulations are met.

Stipulations 817.111-.117-(1, 2)-SL

1. At least 120 days prior to initial construction, the applicant must submit to the regulatory authority for approval a detailed plan for seed bed preparation and seeding for the waste rock disposal areas.

2. At least 120 days prior to initial construction, the applicant shall convey in writing to the regulatory authority its decision to utilize either the revegetation success standard proposed in Section 817.117 of the TA for the affected deciduous streambank community, or any alternative standard which can be demonstrated to be a practical way to measure success on this vegetation type. If the applicant elects to propose an alternate success standard, such proposal shall be submitted at least 120 days prior to initial construction.

UMC 817.121 Subsidence Control: General Requirements

Applicant's Proposal

Grazing lands used for cattle should not be affected by subsidence. Potential subsidence effects will not impede the recreational use of the land which is mainly for deer hunting. Selective mining will be employed providing for 50 percent or less extraction within a 25° angle of draw beneath a Mountain Fuel Supply Company pipeline and no subsidence effects are anticipated (refer to I-250A, I-261A[1] and [2], drawings A03-0186, -0187, -0188, figure IIIC.36A). This mining is projected to occur between years 6 and 25 of the life of mine (see D03-0006, 7, 8). Monitoring stations will be established to monitor the possible subsidence in the vicinity of the pipeline as well as near Soldier and Pine creeks, the only streams which may potentially experience any measureable subsidence. Uniform lowering of the surface area (less than three feet of total elevation decrease) may occur due to longwall mining, but no fracturing should occur. Possible subsidence effects which may occur to a single dirt road passing through the subsidence area will be slight and easily repaired.

Along with partial extraction methods being employed, barrier pillar columnization and harmonic extraction will be utilized to avoid surface subsidence effects while multiple seam mining practices are used.

The operator has prepared a subsidence control plan (page I-243) pursuant to UMC 784.20.

In addition, natural features such as the 200 + foot thickness of the massive Castlegate sandstone and the extensive (generally 1,000'-2,500') depth of overburden should preclude the transference of subsidence effects to the surface.

The operator has proposed four alternatives to mitigate any potential subsidence damage to surface structures such as the pipeline (see Addendum page I-261A[1] and [2]).

Compliance

The operator has satisfactorily supplied information covering this section, however, due to the nature of possible ramifications caused by potential subsidence damage to the Mountain Fuel Supply pipeline compliance with this section will not be complete until the following stipulation has been met.

Stipulations 817.121-(1, 2)-TNT

1. At least 120 days prior to initial construction, the applicant must provide to the regulatory authority a letter stating that the Mountain Fuel Supply Company has been made aware of potential subsidence under their pipeline.

2. Updated subsidence prevention plans must be provided to the regulatory authority for approval if deviations from forecasts in the MRP are developed. Should any surficial damage or fractures become apparent which may constitute a hazard, subsidence prevention plans must be updated immediately.

UMC 817.122-.126 Subsidence Control: Public Notice

Applicant's Proposal

The operator has not provided evidence that all owners of property or residents in the areas adjacent to the land which may be affected by subsidence have been notified by mail of the proposed mining schedule.

Compliance

When the following stipulation has been met, the operator will have achieved compliance with these sections.

Stipulation 817.122-.126-(1)-TNT

1. Each owner of property or resident within the area above the underground workings and adjacent area that would be affected by subsidence if it occurred must be notified by mail at least six months prior to mining. The notification shall contain as a minimum:

   A. Identification of specific areas in which mining will take place;

   B. Dates of underground operations that could cause subsidence and affect specific structures; and

   C. Measures to be taken to prevent or control adverse surface effects.

UMC 817.131-.132 Cessation of Operations

Not applicable at this time.

UMC 817.133 Postmining Land-Use

Applicant's Proposal

In the area of the proposed mine, cattle grazing is the primary land use. Alfalfa cultivation, recreation and hunting and coal mining also occur in the immediate vicinity. A map (603-0147) showing premining land-use is included as part of the mine plan.

Previous coal mining has occurred on the permit area. In the Dugout Canyon area, the Knight Ideal Coal Company mined the Rock Canyon and Gilson coal seams located in both sides of the canyon. The mine opened in 1940 and closed in November 1965. Total coal extracted from the two seams was approximately 1,320,000 tons by conventional room and pillar methods.

Anderson Reservoir, Dugout Canyon Reservoir and their associated diversion structures will remain on the permit area as permanent features after the completion of underground mining activities. The county roads which were in existence prior to the development of the underground mine (Soldier Creek and Dugout Canyon roads) will also remain at the conclusion of the underground mining activities. Fish Creek Road, a new county road, Dugout Canyon Road and Soldier Creek Road will remain as paved roads.

The waste rock fills in Fish Creek and Dugout canyons as well as the preparation plant processing waste sites in Saddle and Boot valleys will be constructed as permanent features to blend into the existing topography. These areas will be contoured and revegetated upon completion of operations.

The applicant proposes to return the areas designated for reclamation to the premining land-uses. In areas of surface disturbance, soil reclamation and revegetation will restore the areas to usefulness as rangeland and wildlife habitat. The value of present cropland will be restored or enhanced following mining, since Anderson Reservoir will be enlarged and water availability may increase.

Compliance

Applicant complies with this section.

Stipulations

None.

UMC 817.150-.76 Roads

Applicant's Proposal

Three county roads will be used in connection with the applicant's mine facilities: Soldier Creek Road; Dugout Canyon Road; and, Fish Creek Road. All roads are shown on Map D03-0002 in the permit application. The Soldier Creek Road will be used by miners and trucks hauling supplies to the central facilities and the Soldier Creek Mine area. The road is 30 feet wide and paved. The Dugout Canyon Road is an existing gravel road and will be upgraded and paved as shown on plans submitted December 1981. Road improvement will be performed under the auspices of Carbon County through the Utah Department of Transportation with funds provided by the applicant. The road will be used by miners, supply trucks and coal haulage (prior to conveyor construction) to and from the Dugout Canyon Mine portals. The Fish Creek Road is a new road which will be constructed under the auspices of Carbon County through the Utah Department of Transportation as an addition to the State County Collector Road System. The applicant will finance construction through the prepayment of sales and use taxes. Plans for the road were submitted in December 1981. This road will provide access from the Dugout Canyon Road to the Fish Creek portal area and will be used by mine employees and maintenance vehicles.

Public notice of the use of the mine haul roads was given in the Salt Lake Tribune and the Price City Sun Advocate on October 21, 1981.

In addition to the three county roads, the applicant is proposing the construction of 11 (eleven) Class II access roads. Road uses are described in detail on pages 109-111, Volume I, MRP. Roads include access to the Fish Creek fan portal, sewage lagoon, Fish Creek rockfill, Fish Creek Ridge Road, Big Hole Road, Dugout Reservoir, Dugout Canyon rockfill, Anderson Reservoir, Anderson Dam, prep plant waste area and the central facilites.

Applicant has stated that all roads will be designed according to the criteria as shown on pages 21-22, August 1981, ACR Response. The proposed locations of all access roads are shown on Maps D03-0020, -0021, -0022, -0024, -0025, -0026, -0035 and -0036. Drawings A03-0176 through A03-0185 show typical examples of contour ditching and temporary berms, temporary slope drains, sediment structures, check dams, drainage diversions, road sections and pipe outlets that will be utilized in road construction.

All roads in the permit area used for access or the transportation of coal will be removed at the conclusion of mining operations with the exception of the county roads. The county roads which will be left at the conclusion of mining are shown on Map D03-0002 (includes Dugout Canyon, Fish Creek and Soldier Creek roads). Immediately following the use of access or haul roads which are no longer needed for operations, reclamation or environmental monitoring, restoration will be implementated. All surfacing materials, bridges and culverts will be removed and disposed of in a dump or landfill. Slopes will be rounded and shaped to conform to adjacent terrain and to meet natural drainage patterns. Roadbeds will be scarified with cross drains, dikes or water bars as necessary to minimize erosion. Topsoil, subsoil or other plant growth medium will be redistributed on the regraded roadbed and revegetated. Typical surface configuration for the roads that will be removed and reclaimed is shown on Figure III-D.3. (MRP, pages 280, 287 and 304).

Compliance

Applicant will comply when detailed designs for Class II roads are submitted and approved.

Stipulation 817.150-(1)-SL

1. At least 150 days prior to initiation of construction, the applicant must submit to the regulatory authority for approval detailed designs for all proposed Class II roads. Designs must include detailed drawings of road alignment, grades and sizing and location of culverting. The designs must comply with the criteria the applicant submitted on pages 21-22, August 1981 MRP Addendum.

UMC 817.180 Other Transportation Facilities

Applicant's Proposal

A railroad loop and train loadout facility will be constructed as part of the central facilities area. The loop will be the termination of the railroad spur line to be constructed and operated by D&RGWRR (see Map D03-0002, Volume I and Map D03-0170, Addendum). The portion of the railroad spur to be

permitted includes the loadout area, the rail loop and the portion of the railroad spur in the immediate area of the minesite (Volume I, page 114). The railroad corridor will be reclaimed after cessation of all operations. All track, tie and associated materials, including gravel fill, will be removed (Volume I, page 311).

Conveyors will be constructed to transport coal underground from the working face to the portals and from the portals to the central facilities. During initial mine development and early mining, trucks will be used to transport coal until construction of conveyors has been completed. Location of conveyors is shown on Maps D03-0002 and D03-0020 through -0023. The conveyor system is discussed in Volume I, pages 82-87. All conveyor systems will be removed after cessation of all operations.

Compliance

Applicant will comply with 817.180.

Stipulations

None.

UMC 817.181 Support Facilities and Utility Installations

Applicant's Proposal

Structures that will be constructed at each of the portal areas are listed in Volume I, page 81 and shown on Maps D03-0026 and D03-0027. The central facilities will include offices, a coal preparation plant and a train loadout. All facilities and their uses are discussed in Volume I, pages 52-56.

The proposed project will receive its electrical power from Utah Power & Light and a telephone system will be installed by Mountain Bell (Volume I, pages 155-156).

Compliance

Applicant will comply with 817.181.

Stipulations

None.

UMC 822.1-.14 Alluvial Valley Floors

Applicant's Proposal

The applicant has mapped all active flood plains within the permit area. Also areas underlain by unconsolidated materials were mapped where identifiable stream channels were present. The total areal extent of stream-laid deposits was mapped, with the upslope contact drawn where the flat-lying deposits encounter sloping deposits of surrounding hillsides.

All areas which are presently or were historically flood irrigated were mapped for those areas identified on the above maps. In addition, areas were mapped where agricultural activities involve special management of the valley floor, such as cropped or harvested lands.

A determination of irrigable land was made, which also included those areas that are capable of being flood irrigated. Vegetation characteristics were examined to determine possible subirrigation. The assessment included a survey of vegetation and use of aerial photography. Possible subirrigation was also assessed on the basis of seepage and stream flow. Water rights were examined to determine whether the potential AVF could presently be flood irrigated.

Four major drainages are located in the permit area: Soldier Creek, Fish Creek, Dugout Creek, and Pace Creek. Fish Creek is an intermittent stream with no available water rights. The small area of alluvium in its downstream reach contains neither irrigated nor subirrigated croplands. Dugout Creek flows through alluvium only after it has exited the canyon. This alluvium contains neither subirrigated nor irrigated cropland. All planned surface disturbances in the Dugout Creek drainage are upland of any alluvium. Pace Creek flows through the northeast portions of the property. It is perennial above the Book Cliffs escarpment where the stream channel is rocky alluvium and short reaches of bedrock; it is intermittent below the cliffs where the creek botton is Mancos shale or alluvium which is derived in part from Mancos shale. The small areas of alluvium along Pace Creek are not irrigable. Soldier Creek is the only drainage with alluvium deposits which may be affected by surface facilities. Consequently, the study focused on the central facilities area near Soldier Creek and the corresponding alluvial deposits. No other areas approximate the conditions required for an AVF.

Currently, the only cultivated lands in the permit area are planted in alfalfa and are flood irrigated. These lands provide supplementary feed for a local rancher's cattle herd during winter months. Most land adjacent to the currently flood-irrigated acreage is used as winter and spring rangeland.

The area of investigation is generally arid and sparsely vegetated. It is dominated by a greasewood-sagebrush plant community (see Section IV-F, Vegetation). This community is found throughout the region in valley bottoms where fill overlies Mancos Shale. Greasewood (Sarobatus vermiculatus) is dominant where the soils and available water are alkaline. Alkalinity results when surface or ground water comes in contact with the Mancos Shale after leaving the overlying Mesa Verde formations. Subirrigation of this plant community is not significant. The stream is incised into the alluvium several

tens of feet in most places. During late summer in 1978, the entire Soldier Creek drainage was walked by a trained geologist to note flow conditions and seepage zones. The creek was dry below its diversion point to Anderson Reservoir until the lower (southern) end of the flood irrigated land was reached. Here return flow from irrigation seeped into the stream in quantities sufficient to cause a small surface flow. Had there been a significant subirrigation flow, bank seepage and a small flow in the creek bed should have been present in the dry reach of the creek.

Soldier Creek is an intermittent stream where it traverses the proposed central facilities area (southwestern portion of the permit area); it is generally dry except in spring and early summer, depending on the amount of precipitation. Small-scale agricultural activities in the area of investigation have taken place periodically since the turn of the century.

Limited water availability, in both the physical and legal senses, and poor productivity appear to explain the limited acreage in cultivation today. The uppermost and eastern (across Soldier Creek) fields were irrigated without proper water rights; subsequently, they had to be abandoned because sufficient water was lacking to keep all of the irrigated lands in the area in cultivation.

Although accurate data of historical flow in Soldier Creek are not available for more than four years, the amount of potentially irrigable acreage adjoining the stream is far in excess of the total amount of water that is available for irrigation. Accordingly, the lands which have been irrigated over the past five years are the best indicator of the maximum amount of land that can be irrigated along Soldier Creek and the general areas that are best suited for such irrigation. These lands should be considered to approximate the area of alluvium along the Soldier Creek drainage within the permit area which is capable of being flood irrigated.

Impacts to the potential AVF described above will be limited to surface effects. Of the areas designated as alluvium in the permit area, the only area which would be directly affected lies just inside the south boundary of the permit area along the Soldier Creek drainage. A service road will cross this area, disturbing approximately nine acres. This superficial impact would have no effect on the physical integrity of an AVF. In addition, any such impacts would be greatly limited in areal extent.

Compliance

On March 17, 1981, the Region V, OSM requested an opinion from the Solicitor's Office in Washington, D. C., concerning this alluvial valley floor (AVF) issue. On May 14, 1981, a memorandum was provided to Mr. Donald Crane, Region V Director, from Suellen F. Keiner, Assistant Solicitor of the Washington office. This memo referenced another (March 3, 1981) memorandum to John Hardaway concerning an oral request from Mike Bishop for an informal opinion on the same AVF question.

The March 3 memorandum indicates that the proposed operation could obtain a permit in compliance with the Surface Mining Act if the following conditions are satisfied:

1. The operator demonstrates that the hydrologic balance of the downstream AVF will be preserved (Section 510[b][5][B] of the Act).

2. The proposed operations would not materially damage the quantity and quality of water in surface and underground water systems that supply those AVF's (30 CFR 785.19[e][1][ii]).

*This regulation was remanded for revision to exempt from its requirements undeveloped range lands and small farm acreage.

"Therefore, if the operator demonstrates that the diversion will not affect ongoing or prospective agricultural activities which are significant to farming on AVF lands (except undeveloped rangelands and small farm acreage), then the operator may obtain a permit."

3. "Although a priority right was created, this does not grant the operation unlimited use of the water. Limitations to that use will depend on the individual State's water law. Irrespective of the protection provided in the performance standards of the Act and the Department's regulations, actual diminution of water supply becomes a matter to be decided between users under State laws, as provided in Section 717(a) of the Act."

On May 7, 1981, the Division received a letter from Donald Crane to James Smith which presented a preliminary determination based upon a draft technical analysis of an AVF determination prepared by the OSM (see letter and draft TA attached).

The preliminary OSM determination suggested that the AVF to be affected by mining operations is significant to farming.

The significance determination was based upon a formula developed in Wyoming by the Department of Environmental Quality to determine at what point production loss is considered to be a negligible impact to a Wyoming farm. Application of this formula to the Utah farm yields a 27.5 percent loss of productivity from the entire ranching operation if the total section of irrigated land (38.1 acres) is removed from production. This is based on a comparison of productivity from the AVF versus the entire grazed parcel (@ 18,407 acres rangeland). A production loss of 10 percent or greater is assumed to be significant to the farm production.

It is the Division's opinion that the basic farming practices and conditions upon which the Wyoming forumla is based are not necessarily representative of the conditions in Utah and consequently the use of this formula may not be directly applicable.

Perhaps the significance formula should take into account a factor for weighing or measuring how directly or indirectly the farmer's livelihood is dependant upon the farming operation?

It is the Division's opinion that the operator has satisfied the basic requirements pursuant to the conditions as outlined in the OSM solitor's memorandum and the regulations.

There apparently are a few other legal questions which may still require resolution. Among them one might consider the status of current land and water right ownership versus the temporary permit or agreement between the operator and the farmer which apparently allows continued use of the irrigable acreage to the extent possible for the interim period.

The DOGM has taken the position that the Act was not intended to adjudicate state water rights, which is a function performed by the State Engineer's Office, Division of Water Rights, and that the final decision and ultimate resolution to the issue at hand will most likely require a ruling by that office.

* * *

OSM has designated Soldier Creek as an alluvial valley floor. The designated area includes all areas mapped as alluvium (Qal) and colluvium (Qco) in the Soldier Creek drainage as shown on Figure #2, titled "Alluvial Valley Floor Determination: Alluvial Deposits" submitted to OSM on June 21, 1982 by Sunedco (file number UT0041-31). Areas of colluvium were included because the applicant did not provide sufficient data to prove that the colluvial areas were not underlain by, or mixed with, alluvial material.

The Soldier Creek AVF contains 158 acres of historically irrigated land, of which 58.1 acres have been irrigated within the past five years. Sunedco has proposed to surficially disturb 8.6 acres of previously irrigated land for a service road and central mine facilities. This level of disturbance will result in a 5.4% decrease in the farm's productivity, calculated as follows:

Significance Test

Soldier Canyon Grazing Allotment consists of 835 animal unit months (AUMs)
Productivity of the farmland is 8.33 AUM/acre (SCS, 4/21/81)

Production = 835 + (58.1)(8.33 AUM/acre)
= 835 + 484
= 1319 AUM

Lost acreage = 8.6 acres
Lost production = (8.6 acres)(8.33 AUM/acre)
= 71.6 AUM
% of production loss:
1 - (1319-71.6)/1319 = 5.4%

OSM considers this decrease in production insignificant for this site because the area of historically irrigable land (158 acres) is much larger than the amount of water available for irrigation at present (i.e., sufficient water to irrigate approximately 58 acres). It is concluded that the farmer could utilize management practices to compensate for the loss of production on the 8.6 acres to be affected.

OSM has concluded that the operator has demonstrated in the MRP application that there should not be any significant adverse impact to the hydrologic balance or the hydrologic function of the AVF during or after mining. The impact will be confined to the surface disturbance of 8.6 acres for a portion of the central facilities and a service road on the permit area. The central facilities will not impact the hydrologic function of the AVF and after mining the site will be reclaimed to the prior land use. There are no developed downstream agricultural practices which depend on the water which will be used by the operator, and the mining operations will not preclude farming off the permit area.

The operator will only divert that amount of water to which he has a water right. Since Sunedco has purchased rights to the water that had been used to irrigate this land, this would mean that approximately 58 acres of land previously irrigated in the past five years will not be utilized for agricultural purposes. This will not affect the capacity of this land to be used for agriculture in the future, by whomever holds the water rights in question. The use of this water by Sunedco will not affect the hydrologic function of the valley, and since there are no subirrigated lands in the valley, the potential agricultural value of the AVF remains intact.

Best available control technology will be implemented to protect and prevent the occurrence of adverse impact(s) to the hydrologic regime during operations and appropriate reclamation practices are proposed after cessation of operations to provide continued long-term protection.

Stipulation

None.

UMC 823.2-.15 Prime Farmland

Applicant's Proposal

A soil survey for the proposed permit area has been completed. It was carried out according to the standards of the National Cooperative Soil Survey.

Soil and land use investigations indicated that two mapping units within the proposed mine area could be prime farmlands. Both these units, HAC and HBC, have been historically used as cropland and have a dependable irrigation water supply. Both units are slope phases of the Haverson soil series. The Soil Conservation Service was contacted to determine whether any of these areas met the minimum requirements for prime farmlands. The Service found that "Field 2 - E1/2 of Sec. 1, T. 14 S., R. 11 E. (has) soil characteristics and qualities suitable for prime land."

This half-section is located along Soldier Creek Road at the southern boundary of the permit area (see Figure IV-C.1). The only planned surface disturbance in conjunction with the proposed mine plan and permit will be an access road (Fish Creek Ridge Road). This road will originate at Soldier Creek Road, proceeding to the east across the remainder of Section 1. The area of disturbance caused by the road within Section 1 will be less than two acres. The operations and reclamation plan for this area were designed to comply with the requirements of 30 CFR and UMC 785.17. The operation and reclamation plan for prime farmland has been approved by the Soil Conservation Service (see letter attached to TA).

Construction of Fish Creek Ridge Road (50 foot total disturbance width) will cross 1,500' of prime farmlands and disturb 1.72 acres (see Figure IV-C.1). Prime farmlands soil will be stockpiled separately as described below.

Immediately prior to road construction, soil materials will be salvaged from the road crown, shoulder, and borrow pits. Stripping will be accomplished with the use of motorized scrapers.

Soil will be salvaged by soil series according to the depths indicated in the following table. To facilitate salvage, the soil series boundaries will be staked prior to removal. Salvage depth stakes will also be placed on the area to assure soil salvage to the identified depth (Robbins, 1980).

Salvaged soil will be taken immediately to designated (prime farmland soils only) stockpile areas (see Map D03-0134) and protected from wind and water erosion by methods specified in Section IV-C.4.1.4, Topsoil Stockpile Protection and Stabilization. First and second lift soil materials will be segregated and stockpiled separately; different soil series may be mixed within a lift, but not mixed between lifts. All unnecessary compaction and contamination of stockpiles will be eliminated through limited soil handling and stockpile segregation. Once stockpiled, these soil materials will not be rehandled until reapplied prior to revegetation. The soils will be used only for reapplication to areas designated for prime farmland revegetation.

Following abandonment of the road, all cut and fill materials down to the level of the original soil will be hauled from the site. The soil surface will then be ripped to 24 inches by a dozer equipped with a ripper or a tractor and spike-tooth harrow (depending on site conditions) to eliminate compaction. The ripped soil surface will be graded level for application of soil materials.

Soils will then be reapplied in two lifts. Soil materials will be replaced in as thick lifts as possible to decrease compaction (Robbins, 1980). During resoiling operations, soil materials will be spread and graded in a manner which: achieves uniform thickness; minimizes compaction, erosion, and contamination of soil materials; and, minimizes deterioration of the biological, chemical, and physical properties of the topsoil.

During resoiling, each lift replaced (and the endemic subsoil) will be tested for excessive compaction (pending Federal regulation changes) by determining the field moist bulk density using the water balloon method. Compaction will be considered excessive if, on more than 10 percent of the area, any layer of reconstructed soil has a moist bulk density of 0.1 gram per cubic centimeter more than values on adjacent undisturbed prime farmland of the same soil type. Two moist bulk density samples shall be taken per acre for each soil layer. Soil lifts shall be ripped, disced, or harrowed to alleviate compaction where it is detected.

Following grading, compaction tests, and any required compaction alleviation measures, revegetation will begin. Phosphorus fertilizer will be broadcast on the soil surface, (and nitrogen fertilizer if crop planting will occur immediately after seedbed preparation) in amounts based on the soil tests conducted on these soils following soil application. The soil surface will be disced and harrowed to prepare a proper seedbed and incorporate fertilizer into the soil (USDA-FS, 1979). The soil will then be cultipacked. Drill seeding of the vegetation crop, using conventional drilling methods, will follow seedbed preparation. The area will then be straw mulched; the mulch will be anchored between the rows of the seeded crop.

Planting specifications for prime farmlands in the project area vary with the season of the year, seed availability, and postmining land use objectives at the time of revegetation. Prior to road abandonment, the Applicant will determine planting specifications. These specifications will include species mixture and planting rate, seeding depth, drill row spacing, fertilization method, and season of planting. The applicant will adopt these specifications as determinants for seeding the perennial mixture on affected prime farmlands. The target production rate to be attained on these lands is two tons of hay per acre based on production of adjacent undisturbed prime farmland.

To determine revegetation success, test plots will be established on the revegetated area. Production within these plots will be compared with production on established "comparison areas." Comparison areas will be sited on an adjacent undisturbed prime farmland such that comparison between the test plots and the comparison area will be representative of the same soils, and other pertinent characteristics in the immediate vicinity of the disturbance. Standard sampling and statistical methods for determining productivity on reclaimed prime farmlands will be used.

Compliance

Applicant has shown compliance with this section.

Stipulations

None.

LITERATURE CITED

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USDA-FS. 1979. User guide to soils - mining and reclamation in the west. Intermountain Forest and Range Experiment Station. Ogden, Utah. 85 pp.

U. S. Geological Survey. 1979. Development of coal resources in central Utah, Final Environmental Statement.

Utah Division of Wildlife Resources. January, 1982. Study to determine the effects of coal development on wildlife in southeastern Utah. 2nd annual report. 141 pp.

BOND ESTIMATE
SUNEDCO
Sage Point-Dugout Canyon Mine
ACT/007/009, Carbon County, Utah

	No. of Disturbed Acres	Backfilling and Grading	Ripping	Subsoil	Topsoil	Seal Shaft	Backfill & Seal Entries	Remove Footings & Foundations	Remove Asphalt & Base	Fertilizer
Dugout Canyon Portal Area	17	$118,584.00	$1,534.00	$15,413.00	$23,192.00		$17,319.00	$1,948.00	$1,389.00	$1,624.00
Conveyor-Dugout Canyon Portal Area to Central Preparation Plant Waste Conveyor	9.1									
Water and Sewer Lines	7.9				754.00					754.00
Big Hole Road	11.4	14,850.00	1,433.00		9,120.00				6,578.00	1,089.00
Fish Creek Ridge Road	11.3	13,500.00	1,295.00		8,240.00				6,878.00	984.00
Sewage Lagoons	15	19,710.00	1,885.00		13,605.00					1,433.00
Preparation Plant	22	35,775.00	2,862.00	26,262.00	13,135.00			2,413.00	1,515.00	2,101.00
Administrative Offices	9	14,850.00		4,901.00	2,450.00			2,091.00	1,515.00	860.00
Railroad Corridor	1.7	2,400.00	158.00	567.00	648.00		(Ballast & Ties)	8,929.00		162.00
Waste Disposal Areas Dugout Canyon Durable Rock Fill	6.6	21,600.00								512.00
Anderson Reservoir	2.8				8,632.00					217.00
Monitoring (Vegetation & Water)										
TOTAL	113.8									

	Prepare Seed Bed	Seed & Plant	Mulch	Irrigation	Gabion Riprap	Remove CMP	Prime Farm Land Addition	Total Cost	Cost Per Acre
Dugout Canyon Portal Area (17 ac)	$1,199.00	$24,847.00	$6,442.00	$8,480.00	$4,166.00	$1,808.00		$227,946.00	$13,408.00
Conveyor-Dugout Canyon Portal Area to Central Preparation Plant Waste Conveyor (9.1 ac)	819.00	13,040.00						16,335.00	1,795.00
Water and Sewer Lines (7.9 ac)	344.00	11,261.00	1,126.00					14,239.00	1,802.00
Big Hole Road (11.4 ac)	496.00	7,450.00	1,625.00					42,641.00	3,740.00
Fish Creek Ridge Road (11.3 ac)	448.00	13,282.00	1,468.00				$64.00	46,159.00	4,085.00
Sewage Lagoons (15 ac)	653.00	9,803.00	2,138.00					49,227.00	3,282.00
Preparation Plant (22 ac)	957.00	39,875.00	3,135.00					128,030.00	5,820.00
Administrative Office (9 ac)	392.00	16,313.00	1,283.00					44,655.00	4,962.00
Railroad Corridor (1.7 ac)	74.00	275.00	242.00					13,799.00	8,117.00
Waste Disposal Areas Dugout Canyon Durable Rock Fill (6.6 ac)		1,234.00						23,346.00	3,537.00
Anderson Reservoir (2.8 ac)	252.00	437.00	399.00					9,973.00	3,562.00
Monitoring (Vegetation & Water)								127,000.00	
							SUBTOTAL	$743,350.00	
							10% Contingency	74,335.00	
							TOTAL	$817,685.00	(1983)

1984 - $899,452; 1985 - $989,398; 1986 - $1,088,337; 1987 - $1,197,171; 1988 - $1,316,888.

9.2.2 UNIT COSTS

Equipment*

Caterpillar D8K Crawler Tractor

$93/hr rental

$15/hr operator

$108/hr

Caterpillar 966C Loader

$55/hr rental

$15/hr operator

$70/hr

Caterpillar 627-B Scraper

$133/hr rental

$15/hr operator

$148/hr

Caterpillar 14-G Motor Grader

$67/hr rental

$15/hr operator

$82/hr

Caterpillar 980-B Loader

$60/hr rental

$15/hr operator

$75/hr

Labor

Equipment Operator - $15.00/hour

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*Rental includes operating cost of equipment per hour.

SUNEDCO TECHNICAL ANALYSIS ADDENDUM [1/]

Sunedco Coal Company
Sage Point-Dugout Canyon
PRO/007/009, Carbon County, Utah

July 14, 1983

On June 13, 1983, Sunedco Coal Company submitted a number of revised pages to be inserted into the Mining and Reclamation Plan (MRP) for the Sage Point-Dugout Canyon Project. These revisions were made in response to issues discussed in a joint meeting between OSM, DOGM and Sunedco Coal Company on June 1, 1983. The issues raised at this meeting related to the stipulation list for the Sage Point-Dugout Canyon mining and reclamation plan approval. The applicant was asked to provide additional information in the MRP so that both the number and scope of stipulations could be reduced. This Addendum to the Technical Analysis evaluates Sunedco's June 13, 1983 MRP changes and documents the rationale for the resulting changes to the stipulation list originally generated by DOGM's Technical Analysis.

Section UMC 817.21-.25 Addendum

OSM found that the applicant had not addressed the requirements of UMC 817.22(b), (e), and (g). In particular, while OSM agrees that the Badlands, Shingle, and Haverson alkali soils are not adequate for salvage (TA. pg. 4), the applicant did not discuss use of topsoil substitutes required by UMC 817.22(e). This section must be addressed in order for the applicant to demonstrate that it will be possible to reclaim the Dugout Creek and Fish Creek rock waste disposal sites.

Final Stipulation 817.21-.25/OSM18

> 120 days prior to any surface disturbance the applicant shall provide a plan for regulatory authority approval which identifies the best available topsoil substitute material to utilize for final reclamation of the Fish Creek and Dugout Creek waste rock disposal sites, as required under UMC 817.22(e). In addition, and at the same time, the applicant shall provide a plan for seed bed preparation and planting materials to be used for revegetating the two waste rock disposal sites.

[1/] This technical analysis addendum was prepared by the Utah Division of Oil, Gas, and Mining in July 1983 on Sunedco's proposed life-of-mine permit application (40 yrs. - 18,242 acres). All references herein to the permit area or mine plan area refer to the life-of-mine. In December 1983, Sunedco revised this PAP to include only 4,475 acres in the initial permit area. Accordingly, portions of the March 1983 TA and this Addendum have been changed to reflect Sunedco's revised PAP (see following addendums and revisions).

Section UMC 817.42 Addendum

Original Stipulation 817.42-(1)-DD

1. The applicant has established the degree of sediment entrapment that will take place at the coal and rock waste disposal sites during a 10-year, 24-hour precipitation event. The applicant shall also provide an estimate of anticipated sediment influent concentrations characteristic of the undisturbed drainage so as to determine the quality of effluents from both waste disposal sites and undisturbed drainages. Final designs for sedimentation ponds must show evidence of compliance with UMC 817.42 through design criteria that will meet State and Federal water quality and effluent limitations. The final pond designs shall be submitted to the regulatory authority at least 120 days prior to planned sedimentation pond construction.

The first sentence of Stipulation 817.42-(1)-DD was deleted from the Final Stipulation, since it merely restated an already established fact and was not necessary for the understanding of the rest of the stipulation's text. The clarified stipulation reads:

Final Stipulation 817.42-(1)-DD/OSM1

1. The applicant shall provide anticipated sediment influent concentrations characteristic of the undisturbed drainages so as to determine the quality of effluents from both waste disposal sites and undisturbed drainages. Final designs for sedimentation ponds must show evidence of compliance with UMC 817.42 through design criteria that will meet State and Federal water quality and effluent limitations. The final pond designs shall be submitted to the regulatory authority at least 120 days prior to planned sedimentation pond construction.

Section UMC 817.43-.45 Addendum

Original Stipulations 817.43-.45-(1, 2)-DD

1. The applicant must submit, at least 120 days prior to planned portal construction, longitudinal cross-sections and design calculations for culverts emplaced under the portal areas used to divert undisturbed runoff. (The Division suggests that the Dugout Creek culverts be sized to transmit at least a 50-year, 24-hour event). Culverts shall be fitted with trash racks at the inlet to help prevent plugging.

2. All culverts and diversions shall discharge onto a protected surface (i.e., riprap, conveyor belting, flexible downspouts, etc.) to prevent scouring and erosion.

On revised pages I-295 and I-296 of the MRP, the applicant committed to fit culverts emplaced under the portal areas with trash racks at the inlet and to install culverts sized to transmit runoff from a 100-year, 24-hour precipitation event. Therefore, the last two sentences of the original Stipulation 817.43-.45-(1)-DD were removed from the Final Stipulation. OSM found that the additions to the MRP satisfactorily addressed the requirements of 817.43-.45-(1)-DD, therefore this stipulation was dropped from the OSM stipulation list.

Final Stipulation 817.43-.45-(1)-DD

1. The applicant must submit, at least 120 days prior to planned portal constuction, longitudinal cross-sections and design calculations for culverts emplaced under the portal areas used to divert undisturbed runoff.

Stipulation 817.43-.45-(2)-DD was not changed. OSM found that the requirements of 817.43-.45-(2)-DD are covered by regulation, therefore this stipulation was dropped from the OSM stipulation list.

Section UMC 817.45-.47 Addendum

Original Stipulations 817.45-.47-(1-6)-DD/DWH

1. At least 120 days prior to planned sedimentation pond construction, the applicant must demonstrate to the regulatory authority that the final designs for the sedimentation ponds at the central facilities, coal preparation plant and portal areas will meet all applicable State and Federal water quality effluent limitations. There shall be no outflow through the emergency spillway during the passage of runoff resulting from a 10-year, 24-hour or lesser precipitation event.

2. At least 120 days prior to surge pond construction, the applicant must submit for regulatory authority approval, final designs demonstrating that the emergency surge pond for the preparation plant is sized to contain the working volume of treatment fluids, with the appropriate freeboard, and constructed to meet design criteria for embankments and sediment removal designated in UMC 817.46.

3. Design of the sewage lagoon must be approved by the Division of Environmental Health. Prior to start of construction, the DEH letter must be forwarded to the regulatory authority.

4. At least 120 days prior to any pond construction, the applicant shall design and submit for regulatory authority approval, a plan for the disposal of dregs and waste from the sedimentation ponds, emergency surge ponds and sewage ponds. (The Division recommends disposal of this material at the coal or rock waste disposal sites, however, alternative methods may be suggested.)

5. The applicant shall construct diversion ditches to direct runoff away from settling ponds at drive and transfer stations pursuant to design standards of UMC 817.43. These diversion ditches must be constructed at the same time as the settling ponds.

6. The applicant shall obtain approvals from both the State Division of Water Rights, The Division of Environmental Health (Bureau of Water Pollution Control) and the Federal MSHA (30 CFR 77.216 regulations) as required for the construction of those ponds, dams and reservoirs (i.e., Anderson & Dugout reservoirs) which meet or exceed the appropriate regulation requirements. The applicant shall provide the regulatory authority with copies of the approvals prior to the construction of the same.

The final sentence of Stipulation 817.45-.47(1)-DD/DWH/OSM2 was found to be redundant, since it merely states the Stae of Utah's effluent limitations, which the applicant is required to meet in the previous sentence. Therefore, the last sentence was removed from the Final Stipulation.

Final Stipulation 817.45-.47-(1)-DD/DWH/OSM2

1. At least 120 days prior to planned sedimentation pond construction, the applicant must demonstrate to the regulatory authority that the final designs for the sedimentation ponds at the central facilities, coal preparation plant and portal areas will meet all applicable State and Federal water quality effluent limitations.

Stipulation 817.45-.47-(2)-DD/DWH/OSM3 was not changed.

On revised page I-138 of the MRP (revised June 2, 1983) the applicant committed to have the design of the sewage lagoon approved by the Division of Environmental Health (DEH) prior to construction, and to forward the DEH approval letter to the regulatory authority upon receipt. Therefore, Stipulation 817.45-.47-(3)-DD/DWH was removed from the Final Stipulations List.

On revised page I-139 of the MRP (revised JUne 2, 1983), the applicant committed to dispose of dregs and waste from sedimentation ponds, emergency surge ponds and sewage ponds in rock waste disposal sites, provided they are nonacid-forming and nontoxic and nonalkalinity producing. (The applicant has included rock waste disposal sites of adequate design and volume in the MRP.) Therefore, Stipulation UMC 817.45-.47-(4)-DD/DWH was removed from the Final Stipulations List.

On revised page I-140 of the MRP (revised June 2, 1983), the applicant commits to construct diversion ditches as required under stipulation 817.45 .47-(5)-DD/DWH. Therefore, this Stipulation was removed from the Final Stipulations List.

On revised page I-116 of the MRP (revised June 2, 1983) the applicant committed to obtain all necessary approvals as required for all ponds, dams and reservoirs, and to supply copies of such approvals to the regulatory authority prior to construction. Therefore, Stipulation 817.45-.47-(6)-DD/DWH was removed from the Final Stipulations List.

Section UMC 817.49 Addendum

Original Stipulations 817.49-(1, 2)-DD/DWH

Same as Stipulation 817.45-.47-(1, 2)-DD/DWH.

Stipulation 817.49-(1)-DD/DWH was modified to read the same as Final Stipulation 817.45-.47-(1)-DD/DWH.

Stipulation 817.49-(2)-DD/DWH was not changed.

Section UMC 817.50 Addendum

Original Stipulation 817.50-(1)-DD/OSM4

1. At least 120 days prior to construction of the portals, the applicant shall submit for regulatory authority approval, a plan for handling and treating all mine water discharges. This information is needed because actual quantities of ground water intercepted cannot be predicted at this time. This plan will be in accordance with UMC 817.50.

Stipulation 817.50-(1)-DD/OSM4 was not changed.

Section UMC 817.54 Addendum

Original Stipulation 817.54-(1)-DD

1. The applicant must submit to the regulatory authority copies of all appropriate water rights prior to development of such water rights.

On revised page I-115 of the MRP (revised June 2, 1983) the applicant committed to submit copies of all appropriate water rights to the regulatory authority prior to development of such water rights. Therefore, stipulation 817.54-(1)-DD was removed from the Final Stipulation list.

Section UMC 817.55 Addendum

Original Stipulations 817.55-(1-3)-DD

1. The applicant shall maintain and monitor a controlled flow rate into the mines and report flow rates (quantity) and quality of water discharged into the mine on a quarterly basis.

2. At least 120 days prior to initial construction (any construction related to mine development), the applicant shall provide to the regulatory authority the proper approval from MSHA.

3. At least 120 days prior to portal construction, the applicant shall submit an underground map of the Gilson workings depicting the location of water in the mine.

The applicant committed to Stipulation 817.55-(1)-DD on revised page I-131 of the MRP (revised June 2, 1983). Therefore, this stipulation was removed from the Final Stipulations list.

Also, on revised page I-131 of the MRP, the applicant committed to provide the regulatory authority with MSHA approval for discharge of water into the mine, at least 120 days prior to construction related to subsurface development. Therefore, Stipulation 817.55-(2)-DD was removed from the Final Stipulations list.

On June 13, 1983, the applicant submitted map D03-0010A showing the extent of water in the abandoned Gilson workings. Therefore, Stipulation 817.55-(3)-DD was removed from the Final Stipulations list.

Section UMC 817.56 Addendum

Original Stipulation 817.56-(1)-DD/OSM5

1. Prior to cessation of operations the applicant shall submit specific details of transfer of title to the Anderson and Dugout Reservoirs. This transfer agreement must incorporate any responsibilities the new owner will need to assume as part of reservoir maintenance.

Stipulation 817.56-(1)-DD/OSM5 was not changed.

Section UMC 817.57 Addendum

Original Stipulation 817.57-(1, 2)-DD

1. Prior to any construction in the area the applicant shall establish markers establishing a 100 foot buffer zone along the perennial and intermittent streams adjacent to approved activities.

2. The applicant shall submit plans and calculations on long-term postmining reclamation stability and erosion control for the drainage channel of Fish Creek Canyon across and over the outslope of the portal pad to the point where it enters the natural drainage again. The plan will be submitted at least 120 days prior to construction of any discharge structures and/or erosion control measures.

Stipulation 817.57-(1)-DD was not changed. OSM found that the requirements of 817.57-(1)-DD are met by regulation, therefore this stipulation was dropped from the OSM stipulation list.

The regulatory authority was concerned about the long-term postmining reclamation stability and feasibility of the proposed drainage channel across the portal pad in Fish Creek Canyon. Since final designs cannot be submitted at this time it was determined that the applicant should commit to restore the original drainage if the feasibility of this approach could not be successfully demonstrated to the RA at a later date. The applicant made this committment and has described the restored drainage (if such will be required) on revised pp-I-297, I-312, I-326 (revised June 2, 1983). The revised stipulation reads:

Final Stipulation 817.57-(2)-DD/OSM6

2. The applicant shall submit final detailed plans and calculations on long-term postmining reclamation stability and erosion control for the drainage channel of Fish Creek Canyon across and over the outslope of the portal pad to the point where it enters the natural drainage again. The plan will be submitted at least 120 days prior to any construction in the Fish Creek Canyon portal area. If the applicant cannot successfully demonstrate the feasibility of this approach, then the applicant will be required to submit for regulatory authority approval a plan for pad and culvert removal and restoration of the original drainage.

Section UMC 817.61-.68 Addendum

Original Stipulation 817.61-.68-(SL)

1. At least 120 days prior to construction of any surface facilities, the applicant shall submit a plan for approval by the regulatory authority for storage, transportation and handling of explosives addressing the requirements of UMC 817.61.-68.

It was found that the language of the original stipulation was too narrow, as the applicant should address all parts of UMC 817.61.-68, therefore this stipulation was rewritten accordingly.

Final Stipulation 817.61-.68-(1)-SL/OSM7

1. At least 120 days prior to construction of any surface facilities, the applicant shall submit to the regulatory authority documentation of compliance with the requirements of UMC 817.61-.68.

Section UMC 817.86-.87 Addendum

Original Stipulation 817.86-.87-(1)-SL

1. The applicant shall provide, for approval by the regulatory authority, an operational plan for extinguishing potential waste fires in accordance with UMC 817.87 and MSHA regulations. This must be submitted 120 days prior to initial construction.

On revised page I-266 of the MRP (revised June 2, 1983), the applicant committed to comply with UMC 817.86-.87 and with MSHA regulations. A copy of MSHA approval will be sent to the regulatory authority upon receipt. Therefore, Stipulation 817.86-.87-(1)-SL was removed from the Final Stipulations List.

Section UMC 817.95 Addendum

Original Stipulation 817.95-(1)-PGL

1. The applicant shall submit a letter at least 120 days prior to initial construction stating that the conditions outlined in the Bureau of Air Quality conditional approval will be met. (Conditional approval letter from Brent C. Bradford to Nicolas K. Temnikov date May 18, 1981, attached to TA).

Stipulation 817.95-(1)-PGL was not changed. OSM found that the requirements of 817.95-(1)-PGL will be met under Bureau of Air Quality regulations, therefore this stipulation has beean dropped from the OSM stipulation list.

Section UMC 817.97 Addendum

Original Stipulations UMC 817.97-(1-3)-SL

1. (This stipulation will be re-written based on new BLM, FWS letters).

2. At least 120 days prior to any conveyor construction, final detailed designs showing exact location of the conveyor corridor, height of the belt from the ground along the entire length of the conveyor and the location and design of any proposed big game crossings must be submitted to the regulatory authority for approval. The design must be correlated with data collected during the DWR study (Utah Division of Wildlife Resources, 1982) on big game movements through, and general use of the chosen conveyor corridors. The applicant has committed as a part of a wildlife mitigation plan to carry out a big game movement monitoring program post-construction. Design of this monitoring program must be submitted to the regulatory authority for review and approval at least 120 days prior to conveyor construction. Based on the results of this study the applicant may also be required to carry out certain big game mitigation practices, including but not limited to the construction of one or more big game crossings.

3. A final mitigation plan must be submitted to the regulatory authority at least 120 days prior to conveyor construction detailing all measures Sunedco will take to lessen impacts of mining on wildlife in the permit area. All sections of the proposed mitigation plan which were indefinite in the permit application must be committed to, or taken out of the plan.

Final Stipulation 817.97-(1)-SL/OSM8 consists of the stipulations submitted by the Bureau of Land Management, incorporating requirements of the U.S. Fish and Wildlife Service as stated on page 1 of their May 12, 1983 letter. The BLM/FWS stipulations are shown in the attached stipulation list. (Standard archaeological stipulations Nos. 5 and 6 have been removed from the BLM stipulation list, as agreed upon by Blaine Miller of the BLM Price office on 9/13/83).

The regulatory authority was concerned that any approval granted for the conveyor be consistent with the Bureau of Land Management's Special Use Permit for the conveyor. Therefore, a sentence was added to Stipulation 817.97-(2)-SL/OSM9 denoting the need for permitting consistency.

Final Stipulation 817.97-(2)-SL/OSM9

2. At least 120 days prior to any conveyor construction, final detailed designs showing exact location of the conveyor corridor, height of the belt from the ground along the entire length of the conveyor and the location and design of any proposed big game crossings must be submitted to the regulatory authority for approval. The design must be correlated with data collected during the DWR study (Utah Division of Wildlife Resources, 1982) on big game movements through, and general use of the chosen conveyor corriders. In no case shall minimum height of the conveyor above ground surface be less than that approved in the Bureau of Land Management's Special Use Permit for this conveyor. The applicant has committed, as part of a wildlife mitigation plan, to carry out a big game movement monitoring program post-construction. Design of this monitoring program must be submitted to the regulatory authority for review and approval at least 120 days prior to conveyor construction. Based on the results of this study, the applicant may also be required to carry out certain big game mitigation practices, including but not limited to the construction of one or more big game crossings.

The applicant revised pages II-407, II-408, II-409, II-410, II-411, II-414 and II-418 of the MRP (revised June 2, 1983) to remove all indefinite statements in the wildlife mitigation plan. Therefore, the last sentence of Stipulation 817.97-(3)-SL was removed from the Final Stipulation. In addition, OSM must respond to the concerns expressed in the FWS letter of May 12, 1983. The FWS requirements on page one of this letter are covered by BLM stipulations; certain additional concerns expressed by the FWS on page two of their May 12, 1983 letter must also be addressed. OSM found that of the ten items listed, items b, d and j were covered by BLM stipulations, item c is covered in the MRP, and item h is covered by MMS review and concurrence. Therefore OSM has required the applicant to address items a, e, f, g and i in their final wildlife mitigation plan.

Final Stipulation 817.97-(3)-SL/OSM10

3. A final mitigation plan must be submitted to the regulatory authority at least 120 days prior to conveyor construction detailing all measures Sunedco will take to lessen impact of mining on wildlife in the permit area. This mitigation plan must also address items a, e, f, g and i listed on page two of the May 12, 1983 U.S. Fish and Wildlife Service memorandum, "Review of Concerns - MRP, Sunedco, Sage Point-Dugout Canyon".

Section UMC 817.99 Addendum

Original Stipulation 817.99-(1)-SL

1. The applicant shall notify the regulatory authority of any slide or surface failures which may occur during operations.

Stipulation 817.99-(1)-SL was not changed. OSM found that the requirements of 817.99-(1)-SL would be met by regulation, therefore this stipulation was dropped from the OSM stipulation list.

Section UMC 817.101 Addendum

Original Stipulation 817.101-(1)-PGL

1. The applicant stated that some of the portal face cuts ("highwalls") would remain, but not all. A clear description (maps and cross sections with text) of which "highwalls" will be left and which will be graded and reclaimed must be submitted to the regulatory authority for approval at least 120 days prior to any portal construction. The description will include stability analyses of representative slopes for each of the highwall areas. Further, the applicant shall evaluate in these analyses the potential for use of material from other areas (mine development waste rock areas) to achieve less slope angles and acceptable slopes with a minimum static safety factor of 1.5. Since the portal areas to be reclaimed will be "graded before topsoil placement along the contour unless site-specific slope conditions would cause a safety hazard to the operator", a contingency plan for these described conditions must be submitted. Exactly how will a portal face be reclaimed where slope conditions are hazardous?

On revised page I-295 (revised June 2, 1983), the applicant committed to submit stability analyses of representatives slopes for each of the highwall areas and to evaluate potential use of material from other areas to achieve acceptable slopes. A revised Map D03-0085 was also submitted showing which highwalls would remain following mining. Accordingly, these requirements were removed from Final Stipulation 817.101-(1)-PGL/OSM11.

Final Stipulation 817.101-(1)-PGL/OSM11

The applicant has shown in Map D03-0085 the locations of the portal face cuts ("highwalls") that would remain after reclamation. A detailed description of the "highwalls" that will be left (in accordance with UMC 817.101(8)) and those which will be finally graded and reclaimed must be submitted to the regulatory authority for approval at least 120 days prior to any portal construction. Since the portal areas to be reclaimed will be "graded before topsoil placement along the contour unless site-specific slope conditions would cause a safety hazard to the operator," a contingency plan for these described conditions must be submitted. Exactly how will a portal face be reclaimed where slope conditions are hazardous?

Section UMC 817.107 Addendum

Original Stipulation 817.107-(1)-PGL

1. A written commitment is needed from the operator that when rills or gullies deeper than nine inches form in areas that have been regraded or topsoiled, the rills and gullies shall be filled, graded or otherwise stabilized according to Section UMC 817.111-.117; or when rills and gullies form of a lesser size they will be stabilized and the area reseeded or replanted if the rills or gullies are disruptive to the approved postmining land-use or may result in additional erosion and sedimentation.

Stipulation 817.107-(1)-PGL was not changed. OSM found that the requirements of 817.107-(1)-PGL would be met by regulation, therefore this stipulation was dropped from the OSM stipulations list.

Section UMC 817.111-.117 Addendum

Original Stipulations 817.111-.117-(1, 2)-SL

1. At least 120 days prior to initial construction, the applicant must submit to the regulatory authority for approval a detailed plan for seed bed preparation and seeding for the waste rock disposal areas.

2. At least 120 days prior to initial construction, the applicant shall convey in writing to the regulatory authority its decision to utilize either the revegation success standard proposed in Section UMC 817.117 of the Technical Analysis for the affected deciduous streambank community, or any alternative standard which can be demonstrated to be a practical way to measure success on this vegetation type. If the applicant elects to propose an alternate success standard, the concurrence of the regulatory authority must be obtained within the 120 day period.

The applicant revised pages I-299, I-314, II-308 and II-339 of the MRP (revised June 2, 1983) to indicate that waste rock disposal areas would not be seeded. This was accepted by the regulatory authority since a variance to retopsoiling waste rock disposal areas was already granted (TA Section 817.21-.25). Therefore, Stipulation 817.111-.117-(1)-SL was removed from the Final Stipulation List.

On revised pages I-324 and II-300 of the MRP (revised June 2, 1983), the applicant committed to use the success standard proposed in Section UMC 817.11-.17 of the Technical Analysis for the affected deciduous streambank community. Therefore, Stipulation 817.111-.117-(2)-SL was removed from the Final Stipulation List.

Section UMC 817.121 Addendum

Original Stipulations 817.121-(1, 2)-TNT

1. At least 120 days prior to initiation of mining, the applicant must provide to the regulatory authority a letter stating that the Mountain Fuel Supply Company has been made aware of potential subsidence under their pipeline.

2. Updated subsidence prevention plans must be provided to the regulatory authority for approval if deviation from forecasts in the MRP are developed. Should any surficial damage or fractures become apparent which may constitute a hazard, subsidence prevention plans must be updated immediately.

On revised page I-244 of the MRP (revised June 2, 1983), the applicant committed to notify Mountain Fuel Supply Company of potential subsidence under the pipeline at least one year prior to initiation of mining under the pipeline, and to provide the regulatory authority with a letter documenting notification. Therefore, Stipulation 817.121-(1)-TNT was removed from the Final Stipulation List.

Stipulation 817.121-(2)-TNT/OSM12 was not changed.

Section UMC 817.122-.126 Addendum

Original Stipulation 817.122-.126-(1)-TNT

1. Each owner of property or resident within the area above the underground workings and adjacent area that would be affected by subsidence if it occurred must be notified by mail at least six months prior to mining. The notification shall contain as a minimum:

   A. Identification of specific areas in which mining will take place.

   B. Dates of underground operations that could cause subsidence and affect specific structures; and

   C. Measures to be taken to prevent or control adverse surface effects.

Stipulation 817.122-.126-(1)-TNT was not changed. OSM found that the requirements of 817.122-.126-(1)-TNT would be met by regulation, therefore Stipulation 817.122-.126-(1)-TNT was dropped from the OSM stipulation list.

Section UMC 817.150 Addendum

Original Stipulation 817.150-(1)-SL

1. At least 150 days prior to initiation of construction, the applicant must submit to the regulatory authority for approval detailed designs for all proposed Class II roads. Designs must include detailed drawings of road alignment, grades and sizing and location of culverting. The designs must comply with the criteria the applicant submitted on pages 21-22, August 1981 MRP Addendum.

The time frame of Stipulation 817.150-(1)-SL was changed to 120 days to make all stipulations consistent. The last sentence of this stipulation was removed from the Final Stipulation since the applicant had already committed to comply with the referenced criteria.

Final Stipulation 817.150-(1)-SL/OSM13

1. At least 120 days prior to initiation of construction , the applicant must submit to the regulatory authority for approval final detailed designs for all proposed Class II roads. Designs must include detailed drawings of road alignment, grades and sizing and location of culverting.

Cultural Resources

A. Description of Existing Environment 783.12(b)

Three cultural resources investigations have been performed for the previous owner of this property, Eureka Energy Company. Dale Berge (1976) outlined the potential for locating cultural resource sites. AERC (1980) performed an intensive inventory of 3,428 acres plus 30 linear miles of corridor right-of-way. During this survey 33 sites were located within the permit area. And in 1981, AERC performed an historic site evaluation.

Nine historic sites, 23 prehistoric and one prehistoric/historic sites were located. Of the 23 prehistoric sites five were temporary camps, fifteen were lithic scatters, two were petroglyh-pictograph sites, one rockshelter and one storage site. A number of isolated finds were also located. Sites were found in the greatest densities along the creeks and tributaries within the project area. Additionally there appeared to be a clustering or concentration of sites which were located within the Pinyon-Juniper ecozone of the lower foothills. Soldier Creek appears to have served as a main avenue of movement both prehistorically and historically.

The Post Archaic/Fremont is best represented culturally, however, there is some evidence of earlier Archaic and later Shoshonean occupations.

B. Description of Applicants Proposal 781.17

Cultural resource surveys were conducted by Archaeological Environmental Research Corporation (AREC) in all areas that are proposed to receive direct surface disturbance and a sample survey of areas that may be impacted by subsidence has also been conducted.

The eligibility criteria (36 CFR 60.6) has been applied to the thirty-three sites. OSM believes that 13 of these sites are eligible for listing on the National Register of Historic Places. However, only 8 of these sites will be directly or indirectly impacted by mining activities. Recommendations for site eligibility and for a "No Adverse Effect Determination" pursuant to 35 CFR 800 have been sent to the Utah State Historic Preservation Officer. The SHPO concurs with OSM's recommendations there will be "No Adverse Effect" by OSM's approval of the mine plan to any site listed or eligible for listing on the National Register of Historic Places. To prevent impact to the eight sites that may be directly or indirectly impacted OSM has proposed stipulations requiring the applicant to submit a data recovery or mitigation plan (see Section F Proposed Special Stipulations)

C. Evaluation of Compliance

1. Applicants Compliance

Cultural resource surveys were conducted on all areas of the mine plan that are proposed for surface disturbing activities. An adequate sample survey to locate sites that may be impacted by subsidence has also been conducted.

The applicant has not yet provided a site specific mitigation plan or data recovery proposal that would eliminate the adverse impacts to the eight eligible sites that will be impacted. However, the applicant has provided sufficient information necessary for OSM to begin the consultation process with the Utah SHPO, pursuant to Section 106 of the National Historic Preservation Act of 1966 (NHPA).

2. OSM Compliance

OSM has complied with the procedures required by section 106 of NHPA by evaluating the eligibility of the thirty-three located cultural resources and making a recommendation, based on data provided by the applicant of "No Adverse Effect" to the Utah SHPO. If the Utah SHPO concurs with OSM's recommendations then the Section 106 coompliance process will be completed.

D. Revisions to Applicants Proposal

If the mine plan is approved the applicant will be submitting additional information as required in Section F, Proposed Special Stipulations.

E. Re-Evaluation of Compliance

The Utah SHPO concurs with OSM's recommendations; a re-evaluation of the procedures will not be necessary.

F. Proposed Special Stipulations

1. The operator shall submit to the regulatory authority and the SHPO for review and approval, a site specific mitigation plan for sites 42 Cb172, 173, 196, 135, 185, 188, 186 and 202. When approved, the operator shall implement the mitigation specified in the mitigation proposal. A draft report of the data recovery shall be submitted for review and approval to the regulatory authority and the SHPO no later than 4 months after completion of the data recovery. A final report shall be submitted within 4 months after receiving the comments and recommendations of the regulatory authority and the SHPO which incorporates these comments and recommendations.

Justification: In accordance with the PMOA and to minimize or prevent adverse impacts to significant cultural resource sites.

G. Summary of Compliance

The applicant will be in compliance with OSM regulations if the stipulation in Section F is adhered to. (Standard archeological stipulations Nos. 5 and 6, submitted in the BLM letter of October 23, 1981, were removed by permission of Blaine Miller of the BLM Price office on September 13, 1983, since these two stipulations have been fulfilled by the archaeological surveys and since the Utah SHPO has concurred as to the adequacy of the surveys.) OSM is in compliance with Section 106 of the National Historic Preservation Act of 1966. OSM has begun the compliance process by submission of Attachment #1 to the Utah SHPO, and by enforcing compliance with the Proposed Special Stiuplations (Section F).

H. Proposed Departmental Action

Approve with proposed special stipulations.

I. Residual Impacts of Proposed Departmental Action

During mining operations 3 historic sites and 5 prehistoric sites will be impacted. Mitigation measures in the form of a data recovery plan will be necessary to mitigate adverse impacts. Even with a well-developed mitigation plan, however, some data will be lost. Furthermore, once the sites are destroyed they can never be re-examined. Thus, there would be a loss of potential data, as well as the physical loss of the sites.

Known and unknown cultural resources located in the vicinity may be impacted by mining activities as a result of increased population in the area. There may be increased vandalism and unauthorized collections associated with recreational activities and other pursuits.

J. Alternative to Proposed Action

One alternative would be not to mine. No cultural resources would be destroyed. Another alternative would be to move the mine facilities. There is no guarantee, however, that this would not impact other previously unknown, cultural resources.

SUPPLEMENT I TO THE TECHNICAL ANALYSIS

Sunoco Energy Development Company
Sage Point-Dugout Canyon Mine
ACT/007/009, Carbon County, Utah

September 19, 1983

Purpose

It has recently been determined that several regulations that the State of Utah had considered to be suspended or remanded are still in effect since the rule changes did not receive Secretarial approval. The Office of Surface Mining (OSM) requested that the Sage Point-Dugout Canyon Mine Mining and Reclamation Plan (MRP) and Decision Document be reviewed to determine if those regulations which were found to be still in effect were adequately addressed in the MRP and were determined to comply with the permitting requirements established by the State of Utah. The following document is an evaluation of each of these regulations, grouped by subject, to determine if the information in the MRP meets the regulatory requirements of completeness and technical adequacy.

Introduction

The Sage Point-Dugout Canyon Mine Plan was submitted in December of 1980. This was prior to Utah's Permanent Program approval; therefore, the mine plan was put together to address all of the regulations promulgated under Utah Code Annotated 40-10-1, et seq., 1979, including those regulations which were later thought to have been suspended or remanded. Thus, although it is to be expected that most, if not all of the regulations in question, were addressed by the original MRP, this Supplement to the Technical Analysis provides documentation of the Division's finding of compliance for those regulatory requirements not formally addressed in the Technical Analysis.

Sections Not Applicable to the Sage Point-Dugout Canyon Mine Final Permit Approval

UMC 761.5(c)	Valid Existing Rights
UMC 776.11(b)(5)	Requirements of Exploration of Less Than 250 Tons
UMC 700.11(a)(2)	The Two Acre Exemption
UMC 783.14(a)(1)	Geology Description of Overburden to be Removed
UMC 786.5--a definition of	Irreparable Damage to the Environment
UMC 805.13(a), (b), (c)	Period of Liability for Performance Bonds

The above-listed regulations were found to be inapplicable to the Sage Point-Dugout Canyon Decision Document for the following reasons: the applicant has not claimed valid existing rights; the application is not for exploration of less than 250 tons or for a two-acre exemption; no overburden will be removed since this is to be an underground mine; no response is required of the applicant concerning definitions; and, the requirements of UMC 805.13 do not come into effect until after mining ceases. The applicant indicates average annual precipitation is 10 inches (MRP, page II-249), therefore, the liability period will be 10 years.

Water Rights

UMC 817.54 (second paragraph) Authority of State Engineer

The Division of Oil, Gas and Mining (DOGM) has submitted a copy of the MRP to the State Engineer for review. Comments from the State Engineer's Office are included in the Decision Document as attachments to the Technical Analysis (TA). Therefore, the criteria of this section have been met in the review process.

Mining Within 300 Feet of an Occupied Dwelling

UMC 761.12(e)

The applicant shows existing structures within the permit area on Map D03-0010 in the MRP, which follows page I-70. Comparison of this map with Coal Ownership Map D03-0005, following page I-22 of the MRP, shows that no mining will occur within 300 feet of an occupied dwelling. Therefore, the applicant meets the requirements of this section.

Cultural and Historic Resources

UMC 783.12(b) Description of Cultural and Historic Resources
UMC 783.24(i) Map of Public Parks and Cultural or Historic Resources
UMC 786.19(e) Criteria for Permit Approval Pertaining to Parks or National Register of Historic Places.

The applicant describes the cultural and historic resources listed on the National Register of Historic Places and known archeological sites within the proposed mine plan and adjacent areas in a report on pages II-474 through II-511 of the MRP. Maps showing locations of sites eligible for National Register listing and known archeological sites within the mine plan and adjacent areas are included in the MRP on Figures IV-I.5 through IV-I.10, and analyzed for historic potential on pages II-489 through II-492. There are no public parks within the permit or adjacent area (MRP, Page II-484).

In a letter dated June 18, 1983, OSM determined that eight (8) sites with potential for National Register of Historic Places listing could be directly impacted by mining activities (see copy attached to this document). Two stipulations were inclued, which OSM believed if accepted by the applicant, would preclude adverse affects to the eligible sites. The Utah State Historic Preservation Office (SHPO) concurred with OSM's determination in a December 6, 1982 letter (attached to TA). The OSM's Technical Analysis of Cultural Resources included one of the stipulations from the June 18, 1982 letter. There are no performance standards for cultural resources in the Utah program.

Based on the information submitted in the MRP, and OSM and SHPO's review and analysis, these sections have been adequately covered.

Alternative Water Supply

UMC 783.17

The applicant states on page II-117 of the MRP, that little or no adverse effects to the water supply in the area of the proposed mine will occur due to coal mining or related activities. The application does not identify alternative sources of water suppy to replace existing sources, should contamination, diminution or interruption of water sources occur due to mining activities.

The applicant has not responded completely to this section, and should at a minimum, be required to commit to replace any water sources affected by mining or related activities, for livestock, and wildlife utilization. This would ensure compliance with performance standard UMC 817.97(d)(4), regarding habitats of unusual value to wildlife, and could be a part of the mitigation plan required under Stipulation UMC 817.97-(3)-SL.

Alluvial Valley Floors

UMC 785.19(d) Application Contents for Operations Affecting Designated Alluvial Valley Floors

The application includes a section on Alluvial Valley Floors (AVF) (Section IV-D, pages II-236 through II-242). Vegetation, hydrology, geology, land-use and soil studies for potential AVF's are reported in these respective sections of the MRP. An AVF investigation per OSM guidelines was conducted by the applicant and a potential AVF determined along Soldier Creek. Potential impacts would be limited to surface effects from construction and operation of surface facilities nearby.

The information provided in the application is complete and enabled DOGM to determine the potential for an AVF and to evaluate potential effects of mining activities on the AVF. A detailed technical analysis of the applicant's compliance with AVF regulations (UMC 822.1-.14) is included in the TA document prepared by DOGM. The Division found that the applicant successfully demonstrated that the impacts to the AVF or the hydrologic regime during or after mining will be minimal. Appropriate reclamation practices are proposed to protect and restore, where necessary, the AVF.

Prime Farmlands

UMC 785.17(a) Scope
UMC 823.2 Objective
UMC 823.11(a), (b) Special Requirements
UMC 823.12(a), (b) Soil Removal
UMC 823.13 Soil Stockpiling
UMC 823.14(a), (b), (d), (e), (f) Soil Replacement
UMC 823.15(a) Revegetation

The applicant includes a discussion of Prime Farmland (pages II-199 through II-206). A half-section of land was determined to be suitable for prime farmland. This area will be disturbed by a mine access road. The application adequately describes soil removal, stockpiling, replacement and revegetation on the prime farmland area. A detailed technical analysis of the applicant's compliance with performance standards of UMC 823.2-.15 was done (see DOGM TA) and the application was found to comply with these sections.

Ground Water Monitoring

UMC 817.52(a)(1)

The applicant has set up a ground water monitoring study to determine recharge, storage and discharge characteristics of the underground aquifer, as well as ground water quality and quantity (MRP pages II-63 through 64). Guidelines prepared by DOGM were used to establish this monitoring plan. Compliance with UMC 817.52 was analyzed in DOGM's TA and the ground water monitoring plan was found to be adequate.

Backfilling and Grading

UMC 817.101(b)(1) Requirement
UMC 817.101(c)(1) Prohibition of Placing Spoil Downslope of a Steep Slope

The applicant has committed to return all areas affected by surface facilities within the permit area to a final configuration similar to the land surface present prior to mining (MRP, page I-289). Spoil material in Fish Creek and Dugout Canyon will be used to construct stable fills in the portal areas (MRP, page I-293). The applicant's compliance with UMC 817.101 was analyzed in the TA, and these sections were found to be adequately treated.

Covering Coal and Acid- and Toxic-Forming Materials

UMC 817.103(a)(1)

The applicant has committed to analyze dregs and waste from sedimentation ponds, emergency surge ponds and sewage ponds for potential acid-forming, toxic-forming or alkalinity-producing material prior to final disposal. Special handling will occur if any of these conditions are found to exist (MRP, page I-139). Waste from the preparation plant will be disposed of according to State and Federal regulations (MRP, page I-103). The application has been found to be technically complete and adequate in this area and to comply with the performance standards of UMC 817.103.

Revegetation Success Standards

UMC 817.116(a) Techniques
UMC 817.116(c) Management During Liability Period

The applicant will use vegetation reference areas to assess revegetation success. Reference areas will be monitored on a periodic basis to determine if they are being impacted detrimentally (MRP, page II-277). The applicant has submitted a plan to determine reclamation success, including methods to monitor soils, water and vegetation during the period of liability (MRP, pages II-90, II-113, II-222, II-341). The application was found to be technically adequate and to comply with these sections (see DOGM TA).

Roads

UMC 700.5 Definition
UMC 817.150-.156 Class I Roads
UMC 817.160-.166 Class II Roads
UMC 817.170-.176 Class III Roads

The application describes the location of Class I and II roads, and includes designs of typical contour ditching and temporary berms, temporary slope drains, sediment structures, check dams, drainage diversions, road sections and pipe outlets (MRP, pages I-107 through I-133). There will be no Class III roads in the permit area. All roads except county roads will be removed following conculsion of mining operations. The information submitted was found to be complete and technically adequate. Detailed designs for Class II roads are still required (see DOGM TA).

SUPPLEMENT II TO THE TECHNICAL ANALYSIS

Sunoco Energy Development Company
Sage Point-Dugout Canyon Mine
ACT/007/009, Carbon County, Utah

February 17, 1984

Technical Adequacy Determination

UMC 783.17 and 817.54 Alternative Water Supply and Water Rights Replacement

In the Division's September 19, 1983 Supplement I to the Technical Analysis (TA), it was determined that Sunedco had not complied with the requirement to replace any water sources affected by mining or related activities. In the December 21, 1983 submittal, the applicant has committed to construct ponds to provide water for domestic stock or wildlife, should adverse affects occur due to mining. Therefore, these sections have now been adequately addressed.

UMC 817.111-.117 Revegetation (Dugout Canyon Waste Rock Disposal Area)

With the December 21, 1983 submittal, the applicant has submitted a complete plan for reclamation of the Dugout Canyon Waste Rock Disposal Site, which will be disturbed during the initial five-year permit term. This reclamation plan includes applying topsoil lifted from the Duguout Canyon Reservoir site, fertilizing, discing and harrowing or compacting to prepare a seedbed, drilling the seed and straw mulching on gentle slopes, and broadcast seeding on steep slopes. Straw mulch, anchored with plastic netting or a chemical adhesive will be used on steep slopes. The proposed seed mix is acceptable to the regulatory authority. Shrub seedlings will also be planted on gentle slopes. Supplemental irrigation will be applied if warranted. The applicant has also addressed monitoring of reclaimed areas. Therefore, these sections have now been adequately addressed by the applicant.

UMC 817.101 Backfilling and Grading (Highwall Stability)

A geotechnical investigation of the highwall stability in the Dugout Canyon portal area was conducted by Seegmiller International, and submitted as part of the PAP on January 4, 1984. All results based on field and laboratory analyses conclude that the minimum static safety factors are in excess of 1.5. The applicant has committed to construct the Dugout Canyon portals in accordance with the contractor's recommendations. Therefore, the applicant has adequately addressed the concerns of Stipulation 817.101-(1)-PGL, and this stipulation has been withdrawn from the Final Permit Stipulations list.

UMC 817.22 Alluvial Valley Floors

An alluvial valley floor (AVF) has been determined to exist along Soldier Creek in the life-of-mine area. Within the initail SMCRA permit area, no mine related activity will occur on or adjacent such as to impact this AVF and sufficient water to irrigate this area will be available. Therefore, the regulatory authority has no further concerns about the AVF issue at this time.

UMC 817.49 Hydrologic Balance: Permanent and Temporary Impoundments

It was determined that Stipulation UMC 817.45-.47-(1)-DD/DWH did not address the requirements of UMC 817.49 insofar as these requirements would pertain to permanent impoundments, specifically, Dugout Reservoir. The applicant will utilize water from the old Knight-Ideal mine in Dugout Canyon for mining operations until Dugout Reservoir is constructed. Since only conceptual designs for Dugout Reservoir were submitted on pages I-116, I-117, Drawing D03-0100 and Map D03-0034 of the application, it will be necessary for the applicant to address all of the requirements of UMC 817.49 insofar as they would pertain to the Dugout Reservoir permanent impoundment.

2. Within 120 days of permit issuance the applicant shall submit information, to supplement the conceptual plan presented in the application, which demonstrates compliance with UMC 817.49 (Hydrologic Balance: Permanent and Temporary Impoundments) insofar as the requirements of this section relate to the Dugout Reservoir, a permanent impoundment. The required information shall be submitted to the regulatory authority for approval. The construction of Dugout Reservoir is not authorized until the applicant has complied with the requirements of this condition.

* * *

In addition to the above determination of technical adequacy, several stipulations have been removed from the Final Permit Stipulations list, because they deal with issues or areas that are not pertinent to or will not be impacted during the initial five-year permit term. These stipulations are listed below.

Stipulation 817.45-.47-(2)-DD/DWH

2. At least 120 days prior to surge pond construction, the applicant must submit for regulatory authority approval, final designs demonstrating that the emergency surge pond for the preparation plant is sized to contain the working volume of treatment fluids, with the appropriate freeboard, and constructed to meet design criteria for embankments and sediment removal designated in UMC 817.46.

Stipulation 817.49-(2)-DD/DWH

1. Same as Stipulation 817.45-.47-(2)-DD/DWH.

Stipulation 817.57-(2)-DD

2. The applicant shall submit final detailed plans and calculations on long-term postmining reclamation stability and erosion control for the drainage channel of Fish Creek Canyon across and over the outslope of the portal pad to the point where it enters the natural drainage again. The plan will be submitted at least 120 days prior to construction of any discharge structures and/or erosion control measures. If the applicant cannot successfully demonstrate to the regulatory authority the feasibility of this approach, then the pad and culvert will be removed and the drainage will be restored.

Stipulation 817.97-(1)-SL, which was a Federal Agency stipulation, has also been deleted from DOGM's Stipulation List.

Final Stipulations 817.45-.47-(1)-DD/DWY, 817.56-(1)-DD and 817.97-(2)-SL have been reworded slightly to reflect conditions of the five year permit area.

REVISED FINAL PERMIT STIPULATIONS

Stipulation 817.42-(1)-DD

1. The applicant shall provide anticipated sediment influent concentrations characteristic of the undisturbed drainages so as to determine the quality of effluents from both waste disposal sites and undisturbed drainages. Final designs for sediment ponds must show evidence of compliance with UMC 817.42 through design criteria that will meet State and Federal water quality and effluent limitations. The final pond designs shall be submitted to the regulatory authority at least 120 days prior to planned sediment pond construction.

Stipulation 817.43-.45-(1-2)-DD

1. The applicat must submit, at least 120 days prior to planned portal construction, longitudinal corss-sections and design calculations for culverts emplaced under the portal areas used to divert undisturbed runoff.

2. All culverts and diversions shall discharge onto a protected surface (i.e., riprap, conveyor belting, flexible downspouts, etc.) to prevent scouring and erosion.

Stipulation 817.45-.47-(1)-DD/DWH

1. At least 120 days prior to planned sedimentation pond construction, the applicant must demonstrate to the regulatory authority that the final designs for the sedimentation ponds at the portal areas will meet all applicable State and Federal water quality effluent limitations.

Stipulations 817.49-(1,2)-DD/DWH

1. Same as Stipulation 817.45-.47-(1)-DD/DWH.
2. Within 120 days of permit issuance the applicant shall submit information, to supplement the conceptual plan presented in the application, which demonstrates compliance with UMC 817.49 (Hydrologic Balance: Permanent and Temporary Impoundments) insofar as the requirements of this section relate to the Dugout Reservoir, a permanent impoundment. The required information shall be submitted to the regulatory authority for approval. The construction of Dugout Reservoir is not authorized until the applicant has complied with the requirements of this condition.

Stipulation 817.50-(1)-DD

1. At least 120 days prior to construction of the portals, the applicant shall submit for regulatory authority approval, a plan for handling and treating all mine water discharges. This information is needed because actual quantities of ground water intercepted cannot be predicted at this time. This plan will be in accordance with UMC 817.50.

Stipulation 817.56-(1)-DD

1. Prior to cessation of operations the applicant shall submit specific details of transfer of title to the Dugout Reservoir. This transfer agreement must incorporate any responsibilties the new owner will need to assume as part of reservoir maintenance.

Stipulation 817.57-(1)-DD

1. Prior to any construction in the area the applicant shall establish markers establishing a 100 foot buffer zone along the perennial and intermittent streams adjacent to approved activities.

Stipulation 817.95-(1)-PGL

1. The applicant shall submit a letter at least 120 days prior to initial construction stating that the conditions outlined in the Bureau of Air Quality conditional approval will be met. (Conditional approval letter from Brent C. Bradford to Nicolas K. Temnikov dated May 18, 1981, attached to TA.)

Stipulations UMC 817.97-(1-2)-SL

1. At least 120 days prior to any conveyor construction, final detailed designs showing exact location of the conveyor corridor, height of the belt from the ground along the entire length of the conveyor and the location and design of any proposed big game crossings must be submitted to the regulatory authority for approval. The design must be consistent with data collected during the DWR study (Utah Division of Wildlife Resources 1982) on big game movements through, and general use of the chosen conveyor corridors. In no case shall minimum height of the conveyor above ground surface be less than that approved in the Bureau of Land Management Special Use Permit for this conveyor. The applicant has committed as a part of a wildlife mitigation plan to carry out a big game movement monitoring program post-construction. Design of this monitoring program must be submitted to the regulatory authority for review and approval at least 120 days prior to conveyor construction. Based on the results of this study the applicant may also be required to carry out certain big game mitigation practices, including but not limited to the construction of one or more big game crossings.

2. A final wildlife mitigation plan must be submitted to the regulatory authority at least 120 days prior to any construction (other than initial road upgrading) detailing all measures Sunedco will take to lessen impacts of mining on wildlife in the permit area.

Stipulation 817.99-(1)-SL

1. The applicant shall notify the regulatory authority of any slide or surface failures which may occur during operations.

Stipulation 817.107-(1)-PGL

1. A written commitment is needed from the operator that when rills or gullies deeper than nine inches form in areas that have been regraded or topsoiled, the rills and gullies shall be filled, graded or otherwise stabilized according to Section UMC 817.111-.117; or when rills and gullies form of a lesser size they will be stabilized and the area reseeded or replanted if the rills or gullies are disruptive to the approved postmining land-use or may result in additional erosion and sedimentation.

Stipulation 817.121-(1)-TNT

1. Updated subsidence prevention plans must be provided to the regulatory authority for approval if deviations from forecasts in the MRP are developed. Should any surficial damage or fractures become apparent which may constitute a hazard, subsidence prevention plans must be updated immediately.

Stipulation 817.122-.126-(1)-TNT

1. Each owner of property or resident within the area above the underground workings and adjacent area that would be affected by subsidence if it occurred must be notified by mail at least six months prior to mining. The notification shall contain as a minimum:

   A. Identification of specific areas in which mining will take place;

   B. Dates of underground operations that could cause subsidence and affect specific structures; and

   C. Measures to be taken to prevent or control adverse surface effects.

Stipulation 817.150-(1)-SL

1. At least 120 days prior to initiation of construction, the applicant must submit to the regulatory authority for approval final detailed designs for all proposed Class II roads. Designs must include detailed drawings of road alignment, grades and sizing and location of culverting.

REVISED BOND SUMMARY

The applicant's December 21, 1983 submittal contained revised disturbed acreage estimates, based upon facilities to be constructed only during the five-year initial permit term (PAP, Volume I, Table II-E.1). These figures were used to revise the Reclamation Bond Estimate. The revised bond estimate for the five-year permit term follows.

Dugout Canyon Portal Area	$171,764
Water and Sewer Lines	13,855
Sewage Lagoons	40,940
Dugout Canyon Rock Fill	27,943
Dugout Canyon Reservoir	6,110
Total of Other Costs	$138,000
	$398,612
Monitoring, Bid Preparation	$ 39,861
10% Contingency	
Total in 1980 Dollars	$438,473

1980 - $438,473 (9.5% inflation)
1981 - $480,128 (9.4% inflation)
1982 - $525,260 (5.9% inflation)
1983 - $556,250 (not available - used 10%)
1984 - $611,875 (This number will be revised when government figures are issued for inflation factor [third week of January]).

The applicant has already posted $1,112,417 in December 1980.

Stipulations Proposed by the Division of Oil, Gas & Mining

Sunoco Energy Development Company
Sage Point-Dugout Canyon Mine
ACT/007/009, Carbon County, Utah

Stipulation 817.42-(1)-DD

1. The applicant shall provide anticipated sediment influent concentrations characteristic of the undisturbed drainages so as to determine the quality of effluents from both waste disposal sites and undisturbed drainages. Final designs for sedimentation ponds must show evidence of compliance with UMC 817.42 through design criteria that will meet State and Federal water quality and effluent limitations. The final pond designs shall be submitted to the regulatory authority at least 120 days prior to planned sedimentation pond construction.

Stipulations 817.43-.45-(1,2)-DD

1. The applicant must submit, at least 120 days prior to planned portal construction, longitudinal cross-sections and design calculations for culverts emplaced under the portal areas used to divert undisturbed runoff.

2. All culverts and diversions shall discharge onto a protected surface (i.e., riprap, conveyor belting, flexible downspouts, etc.) to prevent scouring and erosion.

Stipulations 817.45-.47-(1,2)-DD/DWH

1. At least 120 days prior to planned sedimentation pond construction, the applicant must demonstrate to the regulatory authority that the final designs for the sedimentation ponds at the central facilities, coal preparation plant and portal areas will meet all applicable State and Federal water quality effluent limitations.

2. At least 120 days prior to surge pond construction, the applicant must submit for regulatory authority approval, final designs demonstrating that the emergency surge pond for the preparation plant is sized to contain the working volume of treatment fluids, with the appropriate freeboard, and constructed to meet design criteria for embankments and sediment removal designated in UMC 817.46.

Stipulations 817.49-(1, 2)-DD/DWH

Same as Stipulations 817.45-.47-(1, 2)-DD/DWH.

Stipulation 817.50-(1)-DD

1. At least 120 days prior to construction of the portals, the applicant shall submit for regulatory authority approval, a plan for handling and treating all mine water discharges. This information is needed because actual quantities of ground water intercepted cannot be predicted at this time. This plan will be in accordance with UMC 817.50.

Stipulation 817.56-(1)-DD

1. Prior to cessation of operations the applicant shall submit specific details of transfer of title to the Anderson and Dugout Reservoirs. This transfer agreement must incorporate any responsibilities the new owner will need to assume as part of reservoir maintenance.

Stipulations 817.57-(1, 2)-DD

1. Prior to any construction in the area the applicant shall establish markers establishing a 100 foot buffer zone along the perennial and intermittent streams adjacent to approved activities.

2. The applicant shall submit final detailed plans and calculations on long-term postmining reclamation stability and erosion control for the drainage channel of Fish Creek Canyon across and over the outslope of the portal pad to the point where it enters the natural drainage again. The plan will be submitted at least 120 days prior to any construction in the Fish Creek Canyon portal area. If the applicant cannot successfully demonstrate to the regulatory authority the feasibility of this approach, then the applicant will be required to submit for regulatory authority approval a plan for pad and culvert removal and restoration of the the original drainage.

Stipulation 817.61-.68-(1)-SL

1. At least 120 days prior to construction of any surface facilities, the applicant shall submit to the regulatory authority documentation of compliance with the requirements of UMC 817.61-.68.

Stipulation 817.95-(1)-PGL

1. The applicant shall submit a letter at least 120 days prior to initial construction stating that the conditions outlined in the Bureau of Air Quality conditional approval will be met. (Conditional approval letter from Brent C. Bradford to Nicolas K. Temnikov dated May 18, 1981, attached to TA.)

Stipulations UMC 817.97-(1-3)-SL

1. 817.97-(1)-SL consists of the stipulations submitted by the Bureau of Land Management, incorporating requirements of the U.S. Fish and Wildlife Service as stated on page one of their May 12, 1983 memorandum. The BLM/FWS stipulations are as follows:

   a. Widening of the existing roads along the riparian zone of Dugout Creek and Fish Creek shall be done opposite the side adjacent to the riparian zones to the maximum extent practicable as determined by the operator in consultation with the Authorized Officer.

   b. Loss of riparian habitat on public lands through construction of facilities will be mitigated by upgrading adjacent riparian zones or establishing new riparian zones in conjunction with the Dugout Reservoir. Habitat upgrading will be accomplished by the operator prior to or during construction through coordination with the Authorized Officer.

   c. Loss of critical winter habitat for deer by destruction or disturbance will be mitigated by upgrading adjacent winter range. Habitat upgrading will be accomplished prior to initiation of surface construction by the operator through coordination with the Authorized Officer.

   d. Surface disturbances and facilities planned for the lease area shall be subject to Visual Resource Management considerations. Efforts shall be made to mitigate visual impacts by imitating the form, line, color and texture of the natural landscape to the greatest extent practical as determined by the Authorized Officer. This will include painting of surface structures to blend with the surrounding terra;in and minimal removal of vegetation in areas of proposed surface facilities.

e. Speed of vehicular traffic associated with the mine project should be reduced to no more than 40 miles per hour throughout the mine project area (critical deer winter range) during the period November 1 through May 15 to minimize deer fatalities. The use of the Swareflex Wildlife Reflector Warning System (Streiter Corp.) is recommended to further minimize deer fatalities.

f. Dugout Reservoir will be left intact at the end of mine life if such action is determined to be in public interest. The determination will be made by the Authorized Officer at the end of mine life.

g. An inventory of areas of proposed surface disturbances shall be performed by the operator in consultation with the Authorized Officer to determine the presence of migratory birds. Mitigating measures will be prepared by the Authorized Officer to protect the habitat of migratory birds as required by 43 CFR 3461.1 (n)(1).

h. Three golden eagle nest sites were documented by the FWS and the UDWR as active by definition given in Washington Office Instruction Memorandum 80-346. A buffer zone, shown on map 1, has been established for protection of these nest sites. The area within this buffer zone is considered unsuitable for underground mining, according to Criterion 11 in the Unsuitability Criteria. Under this designation, surface occupancy or surface disturbance would not be allowed. However, an exception can be applied based on the following mitigating measures:

A. Prohibit all surface construction activity in Fish Creek Canyon within the established buffer zone during the critical nesting period, Februry 1 to May 15. Surface construction may be initiated on May 1 if a nesting attempt has not been documented by the authorized officer in consultation with the FWS. Surface construction may also be initiated on May 1 if a determination by the authorized officer, in consultation with with the FWS, shows the nesting attempt to be nonproductive. This determination may be ascertained by observed behaviors of the nesting pair or by presence or absence of eggs.

B. Coordinate all nest visitation through the FWS and/or the authorized officer to minimize disturbances to nesting activity.

C. Reseed and control access to the exploration road constructed in 1979, which passes below the nest sites. Prohibit use of this road, vehicular or pedestrian, during the nesting period, February 1 to May 15.

j. Two Cooper's hawk nests have been documented as active by the BLM and the UDWR. A buffer zone established for the protection of these nest sites is outlined on map 3 and is unsuitable under Criterion 13. An exception can be applied with the following stipulations:

A. Coordinate all nest visitations with the FWS and/or the authorized officer to minimize disturbance to nesting birds.

B. Prohibit all surface construction activities within the buffer zone during the critical nesting period, April 15 to July 15. Surface construction may be initiated on July 1 if a nesting attempt has not been documented by the authorized officer in consultation with the FWS. Surface construction may also be initiated on July 1 if a determination by the authoried officer in consultation with the FWS, shows the nesting attempt to be nonproductive. This determination may be ascertained by observed behaviors of the nesting pair or by presence or absence of eggs.

C. Protect all shrubs, trees or other vegetation along the existing road shoulder (closest to the nest site) within the buffer zone.

k. The operator shall conduct raptor surveys (in close coordination with the U.S. Fish and Wildlife Service and the BLM) within .5 miles of proposed developments in Fish Creek Canyon in the nesting season prior to initiation of surface disturbing activity. Surveys must be acceptable to the Authorized Officer with respect to methods and qualified personnel.

2. At least 120 days prior to any conveyor construction, final detailed designs showing exact location of the conveyor corridor, height of the belt from the ground along the entire length of the conveyor and the location and design of any proposed big game crossings must be submitted to the regulatory authority for approval. The design must be consistent with data collected during the DWR study (Utah Division of Widelife Resources, 1982) on big game movements through, and general use of the chosen conveyor corridors. In no case shall the minimum height of the conveyor above ground surface be less than that approved in the Bureau of Land Management Special Use Permit for this conveyor. The applicant has committed, as a part of a wildlife mitigation plan, to carry out a big game movement monitoring program post-construction. Design of this monitoring program must be submitted to the regulatory authority for review and approval at least 120 days prior to conveyor construction. Based on the results of this study the applicant may also be required to carry out certain big game mitigation practices, including but not limited to the construction of one or more big game crosssings.

D. Construct surface facilities in Fish Creek Canyon as shown on the attached drawing(figure 1). Place topsoil and revegetate the retaining wall (shaded in on figure 1) with trees, shrubs and understory species. Where possible, use fullsize native trees and shrubs which are in areas to be disturbed. This will act as a visual block for activity in the parking area and for traffic along the portal road. Specific requirements for this revegetation will be provided to the company at the time of development.

i. One active prairie falcon eyrie, one suspected prairie falcon eyrie and one golden eagle nest site (old) was documented by the FWS and the UDWR. A buffer zone delineated on map 2 identifies the area considered unsuitable according to Criteria 11 and 13 of the Unsuitability Criteria. An exception can be applied to allow limited surface activity based on the following stipulations:

A. Allow construction of conveyor belt alignment (Alternative 6) as shown in figure 2, in Dugout Canyon.

B. Shield all lighting of the conveyor belt within the buffer zones in Dugout Canyon to minimize visibility of these lights from golden eagle and prairie falcon nest sites.

C. Prohibit all surface construction activities within the buffer zone (map 2) during the critical nesting period, March 15 to June 15. Surface construction may be initiated on June 1 if a nesting attempt has not been documented by the authorized officer in consultation with the FWS. Surface construction may also be initiated on June 1 if a determintion by the authorized officer, in consultation with the FWS, shows the nesting attempt to be nonproductive. This determination may be ascertained by observed behaviors of the nesting pair or by presence or absence of eggs.

D. Coordinate all nest site visitations through the FWS and/or the authorized officer to minimize disturbance to nesting activity.

E. Use the minimum required number of sound warning devices on the conveyor belt within the buffer zone.

3. A final mitigation plan must be submitted to the regulatory authority at least 120 days prior to conveyor construction detailing all measures Sunedco will take to lessen impacts of mining on wildlife in the permit area.

Stipulation 817.99-(1)-SL

1. The applicant shall notify the regulatory authority of any slide or surface failures which may occur during operations.

Stipulation 817.101-(1)-PGL

1. The applicant has shown in map D03-0085 the locations of the portal face cuts ("highwalls") that would remain after reclamation. A detailed description of the "highwalls" that will be left (in accordance with 817.101(8)) and those which will be finally graded and reclaimed must be submitted to the regulatory authority for approval at least 120 days prior to any portal construction. Since the portal areas to be reclaimed will be "graded before topsoil placement along the contour unless site-specific slope conditions would cause a safety hazard to the operator," a contingency plan for these described conditions must be submitted. Exactly how will a portal face be reclaimed where slope conditions are hazardous?

Stipulation 817.107-(1)-PGL

1. A written commitment is needed from the operator that when rills or gullies deeper than nine inches form in areas that have been regraded or topsoiled, the rill and gullies shall be filled, graded or otherwise stabilized according to Section UMC 817.111-.117; or when rills and gullies form of a lesser size they will be stabilized and the area reseeded or replanted if the rills or gullies are disruptive to the approved postmining land-use or may result in additional erosion and sedimentation.

Stipulation 817.121-(2)-TNT

2. Updated subsidence prevention plans must be provided to the regulatory authority for approval if deviations from forecasts in the MRP are developed. Should any surficial damage or fractures become apparent which may constitute a hazard, subsidence prevention plans must be updated immediately.

Stipulation 817.122-.126-(1)-TNT

1. Each owner of property or resident within the area above the underground workings and adjacent area that would be affected by subsidence if it occurred must be notified by mail at least six months prior to mining. The notification shall contain as a minimum:

A. Identification of specific areas in which mining will take place;

B. Dates of underground operations that could cause subsidence and effect specific structures; and

C. Measures to be taken to prevent or control adverse surface effects.

Stipulation 817.150-(1)-SL

1. At least 120 days prior to initiation of construction, the applicant must submit to the regulatory authority for approval final detailed designs for all proposed Class II roads. Designs must include detailed drawings of road alignment, grades and sizing and location of culverting.

U.S. DEPARTMENT OF THE INTERIOR
OFFICE OF SURFACE MINING
RECLAMATION AND ENFORCEMENT
NOTICE OF A DECISION AND AVAILABILITY
OF BOTH A TECHNICAL ANALYSIS AND AN
ENVIRONMENTAL ASSESSMENT FOR
SUNOCO ENERGY DEVELOPMENT COMPANY
PERMANENT PROGRAM PERMIT
SAGE POINT - DUGOUT CANYON
CARBON COUNTY, UTAH

The United States Department of the Interior, Office of Surface Mining Reclamation and Enforcement (OSM), has approved, with conditions, a 5-year permit for Sunoco Energy Development Company to mine coal at its Sage Point - Dugout Canyon mine.

The Sage Point - Dugout Canyon mine surface coal mine is located in Carbon County, Utah, about 15 miles northeast of the town of Price. The proposed permit area will cover approximately 4,475 acres. Maximum mine production is at a rate of 1.2 million tons of coal during the fifth year of mining.

Any person with an interest which is or may be adversely affected by this Federal permit approval action may request an adjudicatory hearing on the final decision within 30 days after publication of this notice, in accordance with Section 514(c) of the Surface Mining Control and Reclamation Act (SMCRA). Any hearing will be governed by provisions of 5. U.S.C. Section 554. A petition for review of the OSM decision should be submitted to:

Hearings Division
Office of Hearings and Appeals
U.S. Department of the Interior
4015 Wilson Boulevard
Arlington, Virginia 22203

Pursuant to 40 C.F.R. Sections 1501.4(c) and 1506.6, notice is hereby given that the Utah Division of Oil, Gas and Mining has completed a technical analysis (TA) for the mining plan for the Sage Point - Dugout Canyon mine, Carbon County, Utah. OSM has supplemented this TA with its own environmental assessment (EA). OSM's recommendation to approve Sunoco Energy Development Company mining plan and the permit application with conditions is in accordance with Sections 510 and 523 of SMCRA. OSM's analysis is that no significant environmental impacts would result from such approval. For information or clarification concerning the approval of the Sage Point - Dugout Canyon mine plan, please contact Shirley Lindsay or Walter Swain at (303) 837-3806, Office of Surface Mining, Denver, Colorado.

Both the TA and the EA are available for public review at the following locations:

Office of Surface Mining Reclamation and Enforcement
Western Technical Center
1020 15th Street
Denver, Colorado 80202

Office of Surface Mining Reclamation and Enforcement
Albuquerque Field Office
219 Central Avenue NW
Albuquerque, NM 87102

Utah Division of Oil, Gas, and Mining
4241 State Office Building
Salt Lake City, UT 84114

AFFIDAVIT OF PUBLICATION

STATE OF UTAH }
County of Carbon, } ss.

I, Robert L. Finney, on oath, say that I am the Publisher of The Sun-Advocate, a weekly newspaper of general circulation, published at Price, State and County aforesaid, and that a certain notice, a true copy of which is hereto attached, was published in the full issue of such newspaper for Four (4) consecutive issues, and that the first publication was on the 9th day of June 19 82 and that the last publication of such notice was in the issue of such newspaper dated the 30th day of June, 19 82

Robert L. Finney

Subscribed and sworn to before me this 30th day of June, 19 82

Notary Public.

My Commission expires My Commission Expires October 28, 1983

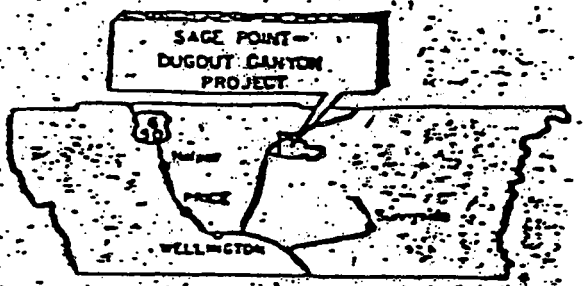
Publication fee, $ 140.80

hereby certify that this instrument is a true and correct p the original Affidavit of Publication.

tness my hand and seal of office this the 16th day of gust, 1982.

mmission expires: 6/6/84

Sunoco Energy Development Co., 12700 Park Central Place, Suite 1500, Dallas, Texas 75251, has applied for the transfer of all applications, permits, licenses, and rights-of-way previously held by Eureka Energy Company of 77 Beale Street, San Francisco, California 94106, relating to constructing and operating a coal mining facility north of Wellington in Carbon County, Utah. (See figure.)



CARBON COUNTY

The project area is shown on the following U.S. Geological Survey 7.5-minute maps:
Deadman Canyon Quadrangle
Pine Canyon Quadrangle
Mount Bartles Quadrangle

Included is an application filed by the Eureka Energy Company with the Office of Surface Mining, U.S. Department of Interior, and the Division of Oil, Gas, and Mining, State of Utah, for a permit to conduct mining operations. The proposed permit area contains the following areas:

Township 13 South, Range 12 East, Salt Lake Baseline and Meridian
Secs. 2, 3, 4, 5, 9, 10, 11, 14, 15, 16, 21, 22, 24, 28, 29, 30, 31, 32, 33: All
Sec. 8: E½
Sec. 13: S½
Sec. 17: E½ and E½ SW¼
Sec. 19: W½ SW¼ and SW¼ NW¼
Sec. 20: NE¼, E½ SE¼, E½ NW¼, and SW¼ NW¼
Sec. 23: N½, SE¼, and N½ SW¼
Sec. 26: N½ NE¼
Sec. 27: W½ and W½ NE¼
Sec. 34: W½
T12S, R12E, SLB&M
Sec. 32: W½, SE¼, E½ NE¼, and SW¼ NE¼
T13S, R13E, SLB&M
Sec. 18: S½
Sec. 19: N½, SW¼, and NW¼ SE¼
Sec. 30: NW¼ NW¼
T13S, R11E, SLB&M
Sec. 25: E½ and E½ SW¼
Sec. 36: All
T14S, R11E, SLB&M
Sec. 1: N½
T14S, R12E, SLB&M
Sec. 3: NW¼
Sec. 4: N½
Sec. 5: N½
Sec. 6: N½

The application contains information regarding environmental resources and the proposed operations and reclamation plan. A copy of the application is available for public inspection at the following address:
Recorder's Office
Carbon County Courthouse
Price, Utah 84501

The public is welcome to review the application and offer any comments to the Office of Surface Mining and/or Utah Division of Oil, Gas, and Mining. Any written comments, objections, or requests for an informal conference should be sent to the following address:
Office of Surface Mining
Brooks Towers
1020 Fifteenth Street
Denver, Colorado 80202
Division of Oil, Gas, and Mining
1588 West North Temple
Salt Lake City, Utah 84116

DUGOUT CANYON MINE

ACT/007/039

ANNUAL REPORT

1998

Canyon Fuel Company, LLC
Dugout Canyon Mine
ACT/007/039

1998 Annual Report

GENERAL INFORMATION

1. Permit Number	ACT/007/039
2. Mine Name	Dugout Canyon Mine
3. Permittee Name	Canyon Fuel Company, LLC
4. Operator Name (if other than Permittee)	
5. Permit Expiration Date	March 16, 2003
6. Company Representative, Title	Rick Olsen, General Manager
7. Phone Number	435-636-2860
8. Fax Number	435-636-0108
9. Mailing Address	Soldier Canyon/Dugout Canyon Mine
	P.O. Box 1029
	Wellington, Utah 84542
10. Resident Agent, Title	Mr. Richard D. Pick
Mailing Address	Canyon Fuel Company, LLC
	6995 South Union Park Center, Suite 540
	Midvale Utah 84047
	(801) 569-4700

RECEIVED
MAR 31 1999
DIV. OF OIL, GAS & MINING

IDENTIFICATION OF OTHER PERMITS

Identify other permits which are required in conjunction with mining and reclamation activities.

Permit Type	ID Number	Description	Expires on
1. MSHA Mine ID(s)	42-01890	Rock Canyon Seam (West Side of Canyon)	NA
	42-01888	Gilson Seam (West Side of Canyon)	NA
2. MSHA Impoundment(s)	NA		
3. NPDES/UPDES Permit(s) (water)	UTG040013	UPDES Permit for Dugout Canyon Mine	April 30, 2003
4. PSD (Air) Permit(s)	DAQE-001-1999	Air Quality Permit for the Dugout Canyon Mine	N/A

CERTIFIED REPORTS

List the certified inspection reports as required by the rules and under the approved plan which must be periodically submitted to the Division. Specify whether the information is included as APPENDIX A to this Annual Report or currently ON FILE with the Division.

Certified Reports:	Reports Required?		INCLUDED or ON FILE w/DOGM?			Comments
	YES	NO	YES	NO	ON FILE	
1. Excess Spoil Piles		X				None present on site
2. Refuse Piles	X				X	Temporary Waste Rock Pile Report
3. Impoundments		X		X		Construction of Sediment Pond was not completed in 1998

REPORTING OF OTHER TECHNICAL DATA

List other technical data and information as required under the approved plan which must be periodically submitted to the Division. Specify whether the information is included as APPENDIX B to this Annual Report or currently ON FILE with the Division.

Technical Data:	Reports Required?		INCLUDED or ON FILE w/DOGM?			Comments
	YES	NO	YES	NO	ON FILE	
1. Climatological Data		X				
2. Subsidence Monitoring Data	X			X		No second mining has occurred in the mine, theorefore no subsidence has occurred.
3. Vegetation Monitoring Data		X				
4. Raptor Data	X		X			1998 Raptor Report included with this report Appendix E
5. Soils Monitoring Data	X					
6. Water Monitoring Data	X				X	
First Quarter Report					X	
Second Quarter Report					X	
Third Quarter Report					X	
Fourth Quarter Report					X	
7. Geological/Geophysical Data		X				
8. Engineering Data		X				
9. Other Data						

LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION

Changes in administration or corporate structure can often bring about necessary changes to information found in the mining and reclamation plan. The Division is requesting that each permittee review and update the legal, financial, compliance and related information in the plan as part of the Annual Report. Provide the Department of Commerce, Annual Report of Officers, or other equivalent information as necessary to ensure that the information provided in the plan is current. Provide any other changes as necessary regarding land ownership, lease acquisitions, legal results from appeals of violations, or other changes as necessary to update information required in the mining and reclamation plan. Include any certified financial statements, audits or worksheets which may be required to meet bonding requirements. Specify whether the information is currently ON FILE with the Division or included as APPENDIX C to this Annual Report.

Legal/Financial Data:	Report Required?		INCLUDED or ON FILE w/DOGM?			Comments
	YES	NO	YES	NO	ON FILE	
1. Department of Commerce, Annual Report of Officers		X			X	Current list of officers in Revised Chapter 1 of the M&RP
2. Other						

MINE MAPS

Copies of mine maps, current and up-to-date through at least December 31, 1998, are to be provided to the Division as APPENDIX D to this Annual Report in accordance with the requirements of R645-301-525.270. These map copies shall be made in accordance with 30 CFR 75.1200, as required by MSHA. Upon request, mine maps shall be kept confidential by the Division.

Map Number(s)	Map Title / Description	Confidential?
1998Prod.DWG	Rock Canyon Seam 1998 Production Map (Includes Projected Mining)	

OTHER INFORMATION

Please provide any comments or further information to be included as part of the Annual Report. Any other attachments are to be provided as APPENDIX E to this Annual Report.

Additional attachments to this report? ☐ No X Yes

1998 Raptor Survey Pine Canyon Quad

Maps of equipment abandoned underground are not presented in this annual report at this time pending an agreement between the Division of Oil, Gas and Mining and Canyon Fuel Company, LLC.

APPENDIX A

Certified Reports

Excess Spoil Piles
Refuse Piles
Impoundments

as required under R645-301-514

CONTENTS

None

APPENDIX B

Reporting of Technical Data
including monitoring data, reports, maps, and other information
as required under the approved plan
or as required by the Division

in accordance with the requirements of R645-301-130 and R645-301-140.

CONTENTS

None

APPENDIX C

Legal, Financial, Compliance and Related Information

Annual Report of Officers
as submitted to the Utah Department of Commerce
and other changes in ownership and control information
as required under R645-301-110.

CONTENTS

None

APPENDIX D

Mine Maps

as required under R645-301-525.270.

CONTENTS

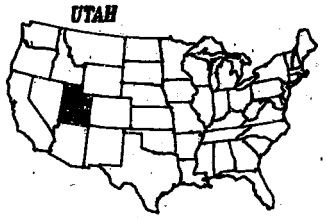
APPENDIX E

Other Information

in accordance with the requirements of R645-301 and R645-302.

CONTENTS

007/039

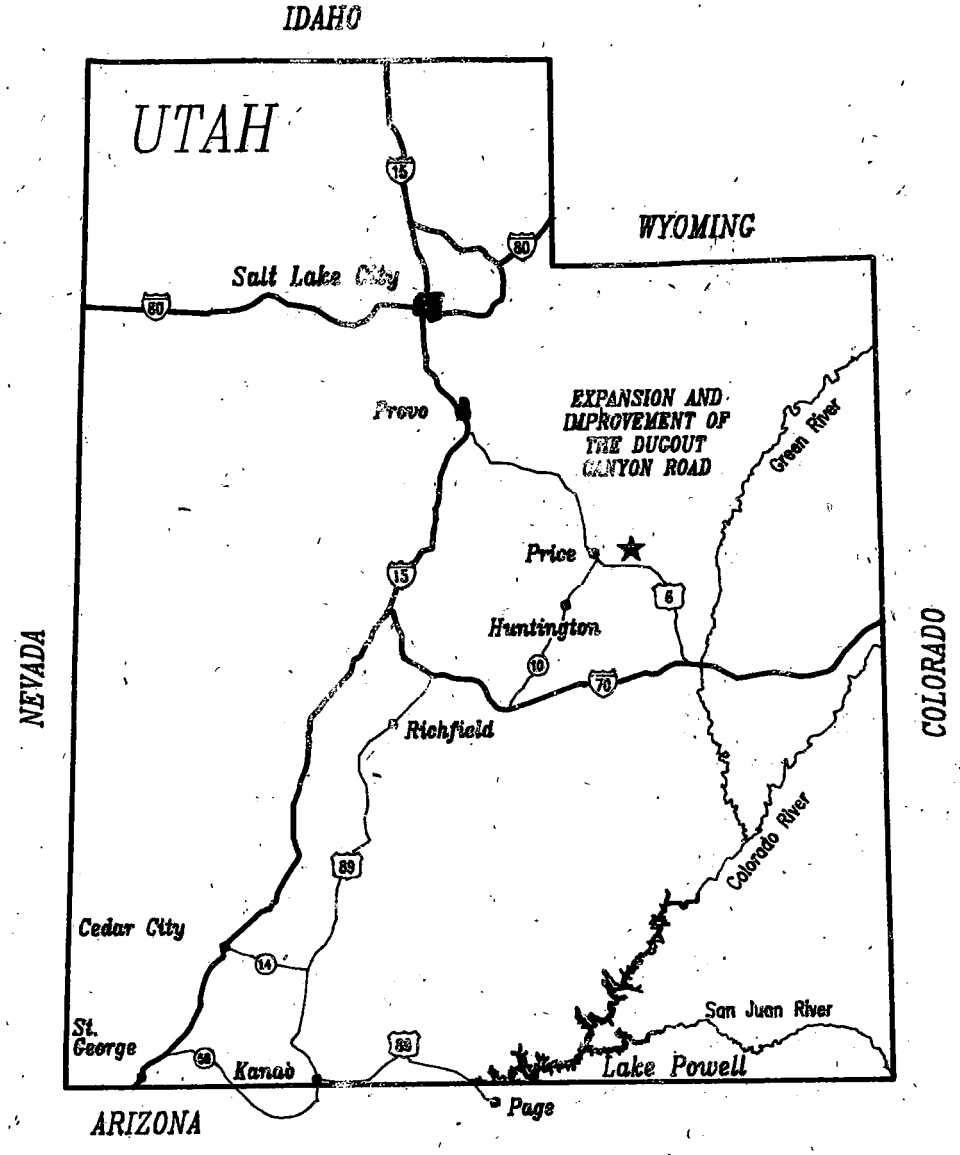


U.S. Department of the Interior
Bureau of Land Management
Moab District Office

Price River Resource Area

May 1996

Environmental Assessment for Carbon County Right-of-Way Application UTU-73299



Environmental Assessment No. UT-066-96-10

ENVIRONMENTAL ASSESSMENT

for

CARBON COUNTY

EXPANSION AND IMPROVEMENT OF THE DUGOUT CANYON ROAD

CARBON COUNTY, UTAH

RESPONSIBLE AGENCY

USDI, Bureau of Land Management
Price River Resource Area office
125 South 600 West
Price, Utah 84501
(801) 636-3600

PREPARED BY

Environmental Industrial Services
4855 North Spring Glen Road
Helper, Utah 84526
(801) 472-3814
FAX (801) 472-8780

MAY 1996

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ACRONYMS AND ABBREVIATIONS

AUM	*animal unit month*
BLM	*Bureau of Land Management*
cfs	*cubic feet per second*
cmp	*corrugated metal pipe*
dBA	*decibels of the A-weighted scale*
DWR	*Utah Division of Wildlife Resources*
EIS	*Environmental Industrial Services*
ESA	*Endangered Species Act*
KOP	*Key Observation Point (VRM Class)*
kV	*kilovolt*
MFP	*Management Framework Plan (BLM)*
NAS	*National Academy of Science*
NEPA	*National Environmental Protection Act*
NHPA	*National Historic Preservation Act of 1986*
NRCS	*Natural Resource Conservation Service*
R	*Range*
ROW	*right-of-way*
SCS	*Soil Conservation Service*
SLM	*Salt Lake Meridian*
SHPO	*Utah State Historic Preservation Office*
SPCC	*Spill Prevention Control and Countermeasure Plan*
T	*Township*
TES	*Threatened, Endangered and Sensitive (Species)*
UDES	*Utah Department of Employment Security*
USDI	*U.S. Department of the Interior*
USFWS	*U.S. Fish and Wildlife Service*
VRM	*Visual Resource Management*

GLOSSARY OF TERMS

Access	*Passage to proposed site*
Alternative (action)	*An option to meeting the stated need*
Archaeology	*The science that investigates the history of peoples by the remains belonging to the earlier periods of existence.*
Assessment(environmental)	*An evaluation of existing resources and potential impacts to them from a proposed act or change to the environment.*
Commitment (mitigation)	*Obligation to a measure that would diminish the severity of an impact.*
Community (biological)	*A group of one or more populations of organisms that form a distinct ecological unit. Such a unit may be defined in terms of plants, animals or both.*
Contrast	*The effect of a striking difference in the form, line, color, or texture of an area being viewed.*
Cultural resources	*Any site or artifact associated with cultural activities.*
Distribution Line	*A line that carries low voltage and high amperage for short distances. Since it has the ability to be transformed into low voltages, the distribution line is usually used for residential and small commercial facilities.*
Endangered species	*Any species in danger of extinction throughout all or a significant portion of its range. This definition excludes species of insects that the Secretary of Interior determines to be pests and whose protection under the Endangered Species Act of 1973 would present an overwhelming and overriding risk to man.*

Environment	*The surrounding conditions, influences, or forces that affect or modify an organism or an ecological community and ultimately determine its form and survival.*
Ephemeral (streams)	*Flowing in response only to direct precipitation, and whose channel is at all times above the water table, and restricted to streams that do not flow continuously for at least 30 days.*
Erosion	*The group of processes whereby earth or rock material is loosened or dissolved and removed from any part of the earth's surface.*
Habitat	*A specific set of physical conditions that surround a single species, a group of species, or a large community. In wildlife management, the major components of habitat are considered to be food, water, cover and living space.*
Hilfiker™	*Metal netting, made in various sizes, that when interconnected and filled with coarse material, provides a retaining wall structure on steep or heavily impacted slopes.*
Hydrology	*The science that relates to the water of the earth.*
Impact	*A modification in the status of the environment brought about by the proposed action.*
Interdisciplinary team	*A group of people with different training representing the physical sciences, social sciences and environmental design arts assembled to solve a problem or perform a task. The members of the team proceed to solution with frequent interaction so that each discipline may provide insights to any stage of the problem and disciplines may combine to provide new solutions.*
Landscape	*That which makes up the various attributes of land surface as a result of geologic activity and weathering, such as plateaus, mountains, plains and valleys.*

Mitigation	*To alleviate or render less intense or severe.*
Paleontology	*The science that deals with the life of past geological ages through the study of the fossil remains of organisms.*
Raptor	*A bird of prey.*
Right-of-way	*Strip of land over which the power line and access would pass.*
Riparian	*Any area of land directly influenced by permanent water that has visible vegetation or physical characteristics reflective of permanent water influence. This can include streams, springs, seeps, wet meadows, aspen stands, and similar habitats.*
Significant (impact)	*Impact that would cause a substantial adverse change or stress to one or more environmental resources. In general, all potential high impacts were considered to be significant, but in some cases potential moderate impacts were considered significant.*
Species	*A group of individuals of common ancestry that closely resemble each other structurally and physiological and in nature interbreed producing fertile offspring.*
Threatened species	*Any species likely to become endangered within the foreseeable future throughout all or a significant part of its range.*
Visual Resource Management classes (VRM)	*Classification of landscape according to the kinds of structures and changes that are acceptable to meet established visual goals (BLM).*

CHAPTER I. INTRODUCTION

A. Need For Proposed Action

Soldier Creek Coal currently operates the Soldier Creek Mine, located at the mouth of Nine Mile Canyon. While the existing mine is producing in excess of 0.5 million tons annually, it owns the reserves and has potential markets, to expand the production to approximately three million tons. However, due to geologic and economic conditions, it is not feasible to access the reserves through the existing mine portals. This has necessitated the reopening of the abandoned Dugout Canyon Mine. This mine is presently served by a one lane gravel road. This road is inadequate to facilitate the proposed haulage of approximately two million tons of coal annually, nor the associated personal, vendors and supply vehicles a mine of this magnitude would necessitate.

The proposed action would be a result of a cooperative agreement with Carbon County and Soldier Creek Coal company to provide the necessary auxiliary road system so that the coal resources could be mined and transported in a competitive marketplace. The benefit to Carbon County in increased employment and subsequent royalties from federal coal leases continue to define a realistic need for all parties.

B. Authorizing Actions and Permits

Conformance With Existing Land Use Plans

The proposed action, located within private and Bureau of Land Management (BLM) jurisdictions, is in conformance with federal, state and local requirements. The proposed action is in conformance with the BLM Price River Resource Area Management Framework Plan (MFP), approved in 1983; and as amended.

The area of the proposed action is zoned as MG-1, mining and grazing, by the Carbon County Zoning and Planning Office, and is in conformance with the existing land use plan for the county.

Permits

The grant issuance is pursuant to the requirements of Title V of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1761), and regulations found within Title 43 of the Code of Federal Regulations, part 2800.

Carbon County would be required to obtain a number of permits and approvals from federal and state agencies for the project. These are listed on TABLE I-1.

TABLE I-1

PERMITS AND OTHER LEGAL REQUIREMENTS

Agency	Act or Regulation	Requirement
Federal		
Bureau of Land Management	National Environmental Policy Act (NEPA) (40 CFR 1500) Public Law 94-579 (10/21/76)	Environmental Assessment Right-of-Way Notice to Proceed Consultation
	Federal Land Policy Act of 1976 (FLPMA)	
Fish and Wildlife Service	Endangered Species Act (ESA) Section 7.	Provide biological opinion of wildlife and plants that are federally listed, and all features of the Proposed Action that would affect such species.
Utah State		
Department of Transportation	Permit to Cross a Road Easement	Consider issuance of permit for crossing of road ROW.
Department of Natural Resources		
Division of Water Rights	Permit to Appropriate Water	Consider Water Right Approval
	Permit for Change of Diversion	Consider issuance of permit for alteration of natural drainage
Utah State Historical Society	Consultation under Section 106 National Historic Preservation Act (NHPA) and State Antiquities Permit	Consult with BLM regarding NRHP eligibility of cultural resources, and affect of Proposed Action upon them, as well as mitigation for such historic properties.
Carbon County		
	County Zoning Ordinances	Determine Compliance with Existing land Designation
Private		
Confirmation and review of ROW encroachment.		Obtain Easements

CHAPTER II. PROPOSED ACTION AND ALTERNATIVES

A. ALTERNATIVE DISCUSSED AND DISMISSED

An alternative considered was to follow the exact alignment of the Dugout Canyon Road. At 9.3 miles in length, it would tie-in to the Soldier Creek Road at its present location. Due to the poor visibility of Soldier Creek Road, the excessive grade of the Dugout Canyon Road at this intersection, as well as being 1.35 miles longer, this alternative was dismissed as being hazardous and costly.

B. PROPOSED ACTION - EXPANSION AND IMPROVEMENT OF THE DUGOUT CANYON ROAD, UPGRADE OF THE 46 kV DUGOUT CANYON TAP LINE, AND INSTALLATION OF A PHONELINE TO SERVE DUGOUT MINE

The proposed action would be located in Carbon County, approximately six miles northeast of Wellington, Utah (See PLATE I and II). The proposed road development and expansion by Carbon County would include a new 0.8 mile section entering the Soldier Creek Road in S.L.B. & M., T. 14 S. R. 11 E., Section 13, NE 1/4 SW 1/4, and intersecting the existing Dugout Road in Section 13, SE 1/4 SE 1/4. From this intersection, the proposed road alignment would follow the existing road to the anticipated mine site. In T. 14 S. R. 12 E., Section 4, NE 1/4 NE 1/4, the proposed right-of-way (ROW) would expand from 100 feet to 200 feet. This ROW width would be maintained to the end of the proposed road expansion in T. 13 S. R. 12 E., Section 23, NW 1/4 SW 1/4.

The proposed upgrade of the existing 46 kV (46,000 volt) Dugout Canyon Tap Line (BLM ROW No. UTU-025217) by UP&L would be located northwest of the proposed road development. The existing line taps the Coal Creek - Soldier Creek 46 kV transmission line in S.L.B. & M., T. 13 S. R. 12 E., Section 19. SW 1/4 SW 1/4 and proceeds southeast to Section 28. The route then turns to the northeast to intersect the Dugout Canyon Road in T. 13 S. R. 12 E., Section 27, NE 1/4, NW 1/4, and proceeds up Dugout Canyon to service the mine site. Upgrade of the 46 kV tap line would follow the existing ROW access, crossing Soldier Creek in T. 13 S. R. 12 E., Section 19, SW 1/4 SW 1/4. Access to the tap line would also be gained from the Dugout Canyon Road in T. 13 S. R. 12 E., Section 27, SE 1/4 NW 1/4.

A proposed telephone line would be installed by US West within the proposed ROW expansion associated with the Dugout Canyon Road. The phoneline would be located adjacent to the paved surface, and would follow the road to the proposed mine site.

Description of Physical Facilities and Construction Procedures

The proposed action to be taken by Carbon County, UP&L and US WEST on public land includes:

1. *Expansion and improvement of the Dugout Canyon Road.*

2. *Stream crossings and bank stabilizations of Soldier Creek and Dugout Creek.*

3. *Establishment of a borrow/staging area for equipment storage and associated road fill needs.*

4. *Establishment of a utility/telephone corridor.*

5. *Access to the Dugout 46 kV Tap Line using trails and roads.*

6. *Upgrade of the 46 kV Dugout Tap Line.*

The planned surface routes of the road, powerline and phoneline are shown on PLATE II. Specific details of the road alignment are shown on Plates 1 through 15. The powerline alignment is shown on Plate 16 and 17. The following section describes each of the proposed facilities.

*1. **Road Expansion and Improvement** - The proposed two lane, 26 foot paved Class B road, totalling 7.95 miles, would follow the approximate route of the existing graveled Dugout Canyon Road. The proposed road, designed for a maximum speed of 40 miles per hour, would be constructed according to the standards of the American Association of State Highway and Transportation Officials (AASHTO) and the Utah Department of Transportation 1992 Standard Specifications for Road and Bridge Construction.*

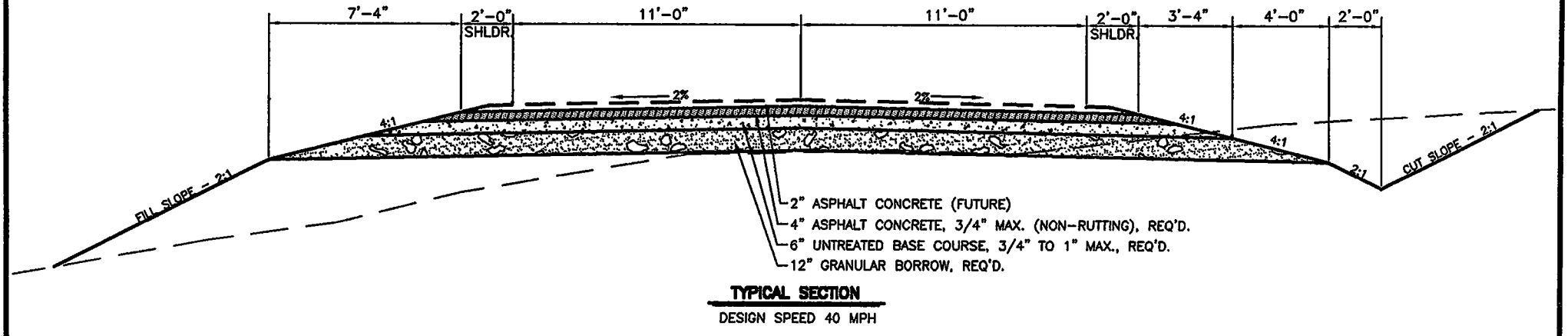
Total ROW acreage upon public and private land is shown in TABLE II-1.

TABLE II-1

OWNERSHIP SUMMARY OF LAND AFFECTED BY PROPOSED ROAD

Ownership	Miles	Acres
BLM	5.76	113.94
Private	2.19	26.54
TOTAL	7.95	140.48

FIGURE II-1 shows the typical design of the paved road. The desired construction and operational ROW width would be 50 feet on each side of the centerline for the lower 4.64 miles (100 foot ROW) and 100 feet on each side of the centerline for the upper 3.31



TYPICAL SECTION

DESIGN SPEED 40 MPH

Dugout Canyon Road
Carbon County

TYPICAL CROSS SECTION

CREAMER & NOBLE ENGINEERS
ST. GEORGE, UTAH

Figure No.: II-1

DOC-TXS

miles (200 foot ROW). Approximately 200,000 cubic yards of roadway excavation, 29,500 tons of non-rutting asphalt concrete, 48,150 tons of untreated base course, and 57,000 cubic yards of granular borrow are proposed. Alignments for the proposed road, as well as the anticipated cut and fill areas, are shown on Plates 1 through 15.

Approximately 0.8 mile of new road, located 1.1 miles north of the existing Dugout Road turnoff, would be constructed. This new road, located in T. 14 S. R. 11 E., Section 13. would be constructed from the Soldier Creek Road to tie-in with the proposed alignment in T. 14 S. R. 12 E., Section 18. The road bypassed begins in T. 14 S. R. 11 E., Section 24 and proceeds northeast 1.35 miles to T. 11 S. R. 12 E., Section 18. This portion would be reclaimed upon completion of all construction.

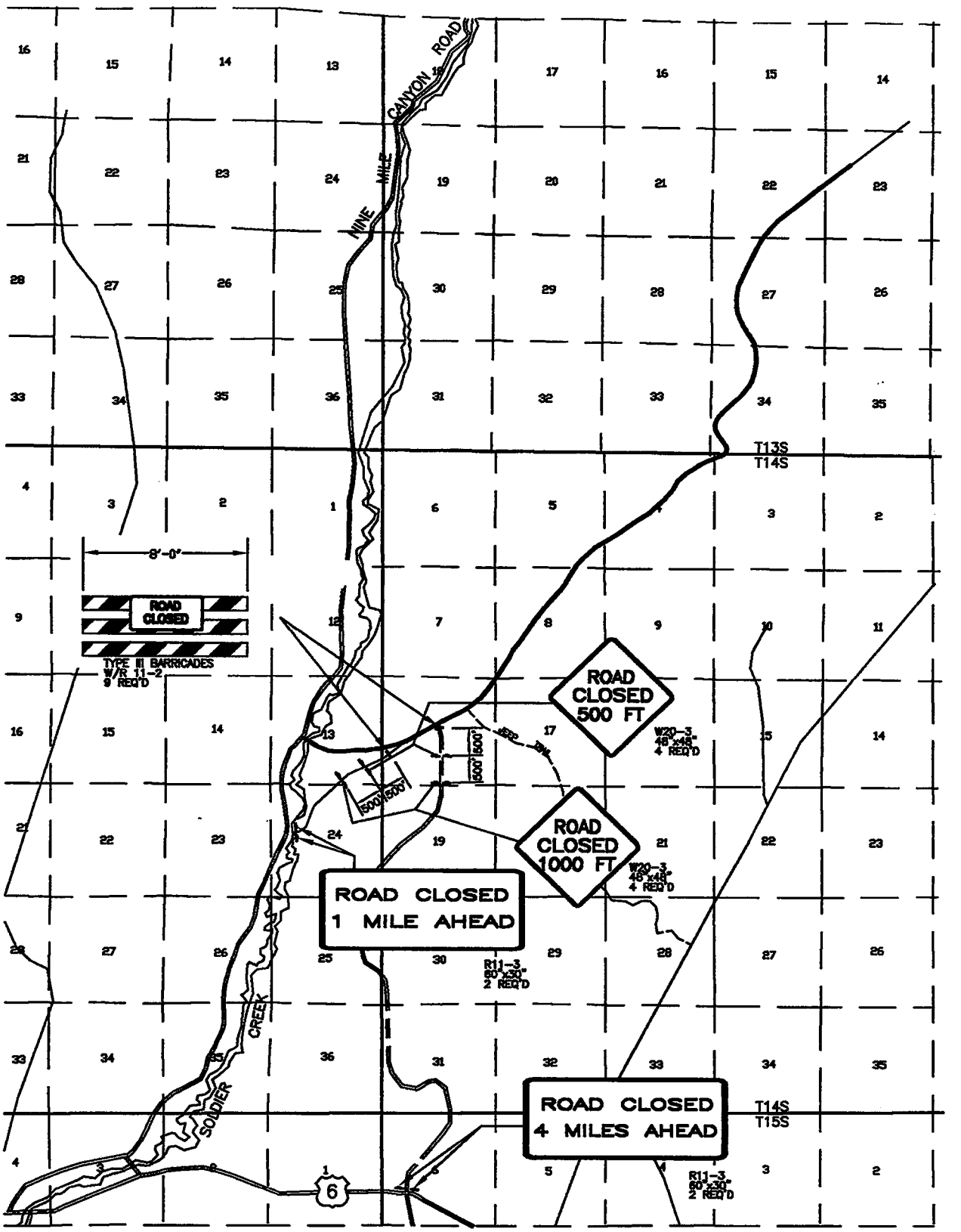
Timeframe for completion of the proposed road is 120 days, beginning Summer, 1996 and ending Fall, 1996. The contractor would have a crew of approximately 20 to 30 people, and would utilize the following equipment during the various phases of construction:

Road Grader
Rubber Tired Loader
Conventional Scrapers
Hydraulic Excavators, Track Mounted and Wheel Mounted
Rear Dump Trucks
Belly Dump Trailers
Asphalt Paving Machines
Water Truck for dust control
Steel Drum Static Compactors
Sheeps Foot Compactors
Hand Held Vibratory Plate Compactors
Gravel Crushing Facility
Track Dozers
Construction Office Trailer

Due to the poor condition of the existing road (narrow width, blind curves and rough surface), and the amount of construction activity that would take place, unauthorized personnel would not be allowed within the area during construction activity. FIGURE II-2 shows the proposed traffic control plan to be initiated during the construction of the road.

Crews would begin by clearing and disposing of all trees, vegetation, and debris within the staked limits of the roadway, channels, and other designated areas to a depth of two feet. The contractor would not disturb areas outside the slope staked limits unless approval is received from the BLM.

Upon completing the clearing of the ROW, crews would begin the construction of the roadway subgrade. Graders, scrappers and dozers would be utilized to obtain the necessary grade and



Dugout Canyon Road
Carbon County
TRAFFIC CONTROL PLAN

CREAMER & NOBLE ENGINEERS
ST. GEORGE, UTAH

Figure No.: II–2

alignment shown on Plates 1 through 15. After the road subgrade is completed, the contractor would begin hauling, placing and compacting of granular borrow to a depth of 12 inches. This is the first phase of the surfacing. The second phase of surfacing would entail placing and compacting of a six inch lift of untreated base course. After the untreated base course is completed, the contractor would spray a prime coat of liquid or emulsified asphalt over the base course. The prime coat would remain on the surface for a period of 24 to 48 hours, after which time the contractor would begin the placing and compaction of the asphalt concrete.

After the asphalt concrete has had time to set properly the contractor would paint the traffic lane lines. Other traffic control items such as signing, would take place throughout the entire construction phase of the operation.

*2. **Stream Crossings and Bank Stabilization** - To facilitate the expansion and improvement of the Dugout Canyon Road, three stream crossings and a bank stabilization are planned (See PLATE II). A double barrel concrete box culvert would be installed where the 0.8 mile addition would cross Soldier Creek in T. 14 S. R. 11 E., Section 13, NE 1/4 SW 1/4. A crossing of an ephemeral drainage at T. 14 S. R. 12 E, Section 5, SE 1/4 SE 1/4, and crossing of Dugout Creek at T. 13 S. R. 12 E., Section 27, SE 1/4 NW 1/4 would also require concrete box culverts.*

Approximately 200 feet of Hilfiker™ wire vertical retaining wall would be installed along Dugout Creek in T. 13 S. R. 12 E., Section 23, NW 1/4 SW 1/4, to stabilize the creek bank below the proposed road. A corrugated metal pipe (CMP) arch with concrete headwalls would be installed over Dugout Creek at the end of the project area. A typical of each bridge with cross-sections, as well as a description of the bank stabilization area, are shown attached to the joint Stream Alteration Permit in APPENDIX A.

Where structures are to be built the contractor would excavate and establish the elevations and dimensions necessary to construct the structure. Coffer dams would be constructed to allow work to take place in areas inundated with water. The coffer dams would be removed when they are no longer needed. The contractor would tie the steel for the concrete structures and construct the forms prior to pouring the concrete. After the concrete has set up, the forms would be dismantled and the structure backfilled to bring the roadway surface to grade.

Access to the 46 kV Dugout Mine Tap would require a temporary crossing (two to four weeks) of Soldier Creek. A 12 foot wide grouted rip-rap crossing would be constructed prior to upgrading the tap line. The grouted crossing would be left in place for access to the powerline during the projected use of the line (22 years). A gate would be installed to prohibit all use not associated with the maintenance and operation of the powerline.

A detailed typical of the crossing with cross-sections is also included with the joint Stream Alteration Permit in APPENDIX A.

3. **Borrow/Staging Area** - A four acre site located in T. 14 S. R. 12 E., Section 18, SW 1/4 SW 1/4 (See PLATE II), would be utilized for fill requirements associated with the proposed road construction. Topsoil would be striped prior to excavation of the site to a depth of four inches. This soil would be stored within an erosion control berm constructed around the site. The berm would control drainage from the borrow/storage site and reduce impacts to the surrounding undisturbed area. Upon completion of the project, the area would be recontoured with the stored topsoil and revegetated.

The area would also serve as a equipment staging and material storage site during construction of the proposed road. Fuel and oil may at times be stored within this area during construction of the road. A Spill Prevention Control and Countermeasure Plan (SPCC) is included as APPENDIX B. Upon completion of construction activities, this area would be recontoured and seeded.

4. **Utility Corridor** - A 10 foot wide utility corridor on the cut, or uphill, side of the road, would be located within the ROW of the proposed road. The utility corridor would be entirely within the disturbance associated with the new road and would accommodate future water, gas, and/or sewer lines during the life of the mine.

U.S. West would install, concurrent with road construction, a telephone line within the corridor to serve the proposed mine. The line would be buried at a depth of 24 to 36 inches, approximately three feet from the edge of the asphalt surface. A function box would be installed approximately 3000 feet from the intersection with Soldier Creek Road. At approximately 6000 foot intervals along the length of the road, a similar box would be installed. The four by five inch boxes, colored gray/green, would stand approximately 36 inches above the surface.

5. **Access Trails and Roads** - No access roads other than the existing Dugout Canyon Road would be required for use during the proposed expansion and improvement of the road. However, to upgrade the Dugout Tap Line, existing roads and trails to, and along the existing ROW would be used by rubber tired and/or track construction vehicles. UP&L construction vehicles would access specific sites by travelling perpendicular from the road or trail to the pole location.

Access to, and along the established ROW road would be from the Soldier Creek Road on the west at T.13 S. R. 12 E., Section 19, NW 1/4 SW 1/4; and from the Dugout Canyon Road on the east in Section 27, SE 1/4 NW 1/4. In the event that the existing access roads require upgrading prior to use, a temporary use permit would be obtained from the BLM by UP&L.

*6. **Dugout Tap Line Upgrade** - The existing 5.09 mile 46 kV (46,000 volt) powerline on public land, would be upgraded prior to being energized. Upgrade work within the 40 foot wide powerline ROW would be conducted by ground crews using tracked and/or rubber tire vehicles and include: groundwire attachment; crossarm, brace, suspension, tension, and miscellaneous hardware replacement where needed; tightening hardware; post and insulator replacement; structure straightening; and installation of a metering station. Work within the existing ROW would be construed as maintenance of the established line, and would take approximately two to four weeks.*

Due to conflict with the proposed road alignment and the required cut and fills, five poles would be relocated. Location of the new poles would be within Dugout Canyon in the existing ROW and the proposed 200 foot road ROW (See Plate 13-15 and 17). Structures would meet all standards defined in Suggested Practices for Raptor Protection on Powerlines, a Raptor Research Foundation publication.

Construction Schedule

Depending on various approvals being in place construction could begin as early as July 1996 with an anticipated completion date of October 1996 (120 days). A breakdown of activities is as follows:

June to July

- *Mobilization of earth moving equipment, temporary hydrologic controls constructed in drainages.*
- *Clearing and removal of vegetation from road ROW*
- *Strip top soil from borrow area and stockpile*
- *Excavation and construction of proposed crossings*
- *Begin road grading, generate cut and fill needs*

July to August

- *Initiate tap line upgrade, access powerline*

August

- *Complete tap line upgrade and pole realignment*

August to September

- *Initiate utility corridor, establish phoneline concurrent with road construction*

September to October

- *Complete interim reclamation*
- *Remove interim sediment control*
- *Clean all construction debris from site*
- *Demobilize all equipment*

October to November

- *Reclaim and reseed excluded road sites and all disturbed areas*

Stabilization, Maintenance and Operation Plan

Procedures that make up the following operation plan are designed to minimize and stabilize disturbances to resources present within the area of the proposed action during its construction, operation and maintenance. A full description of these resources and impacts to them are described in Chapter III, AFFECTED ENVIRONMENT and Chapter IV, ENVIRONMENTAL CONSEQUENCES.

Soil disturbance during the construction of the road and upgrade of the powerline would be restricted to the ROW and borrow area. Unauthorized cross-country vehicular travel by construction crews would be prohibited. Construction activities would be conducted to minimize erosion and in accordance with the natural topography where possible. Exposed areas resulting from road construction and the excavation of individual powerline structure sites would be seeded with the approved BLM seed mix, deemed to stabilize the slope and reduce erosion. On slopes exceeding 2:1, native shrubs with significant root structure would be hand planted on a 10 foot spacing.

In order to minimize watershed and erosion damage during wet or muddy periods, access to the ROW would be restricted. Where runoff and drainage controls would be required, they would be constructed to BLM standards. Culverts underneath the road would be installed at a grade no greater than three percent, with rip-rap armoring on the out-flow. As required, hydrological protection in the form of sediment and runoff controls would be installed below areas where construction of the road could impact Dugout Creek with increased sediment loads. Straw bales would be installed in the established borrow ditch along all slopes in excess of 12 percent. Activities within all wash and gully areas would be limited, so as not to significantly impact the area.

Impacts to the hydrologic regime would be minimized by the installation and implementation of protection measures specific to each of the proposed crossings. Concrete retaining walls and/or headwalls, would be constructed at the ends of all stream crossings. This would deter the potential for side cutting and further impact to the stream channel surrounding the crossing.

During the operation and maintenance of the road, the use of tackifiers, and/or covered trucks to prohibit blow off of coal fines along the Dugout Creek and Soldier Creek Road(s) would be used. Enforced speed limits of 40 MPH would also reduce the potential of coal blow-off, minimizing this impact to area soils as well as to Dugout and Soldier Creek(s).

If the contractor encounters or exposes during construction any abnormal condition which indicates the presence of a hazardous material, toxic or hazardous waste, work within the area would be immediately suspended and the BLM notified. Activities within this area would not resume until so directed by the BLM. Disposition of the hazardous material, toxic or hazardous waste shall be made under the requirements and regulations of the Utah State Department of Environmental quality.

In the event of spills of petroleum based products or hazardous waste by the contractor, procedures outlined in the Spill Prevention Control and Countermeasures Plan (APPENDIX B) would be followed. The BLM, as well as the Department of Environmental Quality, would be notified if the release meets the definition of a hazardous waste as defined in 40 CFR 261.

A complete clearance of all areas where the proposed road alignment deviates more than 50 feet from the existing 100 road ROW would be completed prior to construction. To maintain the cultural, historical and paleontological resource integrity of the area, construction crews and staff would be provided with instructional materials regarding the identification, value, legal protection and treatment of these resources. If any cultural, archeological or paleontological resources are discovered during construction or any operations associated with the road, powerline, or phoneline, all activities would cease at the area of the manifestation. The authorized agency would then be contacted to evaluate the importance and potential of the site. Mitigation measures would, at that time, be made for the value of the resource site. Construction and/or maintenance crews would avoid the site until the resource potential has been determined.

Disruption to range management facilities, such as fences, wells, reservoirs and other improvements, is not anticipated. Two cattle guards that currently exist on each side of the private land crossed by the existing road, would be replaced upon completion of the new road. Any newly constructed range improvements, such as fences, would meet BLM or private landowner standards.

For reducing visual contrast, reduction of disturbance along the route of the road is the most effective operational technique. However, where disturbance is proposed, consideration would be given to the basic landscape (form, line, color, and texture) to minimize visual change, while meeting the safety and use capacity of the road. When possible, soil would be contoured, using what

equipment necessary, to conform with the terrain and adjacent land.

To the extent possible, all foliage adjacent to the powerline would remain undisturbed to provide maximum available screening of the line relative to the landscape character type. A cleared ROW corridor would not be created. Visual disturbances would be minimized by using poles colored a shade darker in tone than the surrounding landscape, the use of non-reflective or clear insulators, and by placing the poles out of public view where possible.

Potential measures to help improve air quality for construction activities include proper maintenance of the construction equipment and limited travel on the construction ROW and dirt access roads. Dust generation from disturbed areas would be reduced through interim watering of active construction areas. Final reclamation, which includes revegetation of all disturbed areas, would eliminate further impacts associated with wind erosion. If air quality is believed to be adversely affected, monitoring of air quality would be carried out and standards, as defined by Utah Division of Air Quality, would be met.

Noise reduction and control measures for construction activities would include proper operation and maintenance of manufacturer-installed noise abatement equipment. During operational use, enforced speed limits would limit area wide noise impacts by reducing the need for Jake Brake application on descending grades along the Dugout Canyon and Soldier Creek Roads.

Due to the increase in truck traffic along Soldier Creek Road (See TABLE IV-2), a listed scenic byway, the operation plan would include the installation of lighted signs warning of heavy truck traffic. Enforcement of posted speed limits, especially from the Dugout Canyon Road tie-in to U.S. Highway 6, would increase the awareness of the truck drivers and increase the reaction time to potential hazards. If required, stop lights could be installed at the Dugout Canyon Road - Soldier Creek Road tie-in; Soldier Creek Road crossing, across from the Savage Trucking Company maintenance shop, 0.25 miles north of U.S. Highway 6; and at the intersection with U.S. Highway 6.

Vegetation removal necessitated by the proposed action would be confined to the ROW. Vegetation removed would be set aside during construction activities, and/or left in place upon completion of construction where possible. Vegetation removed would be limbed and lopped. This material would then be distributed over the disturbed or reclaimed area to increase solar protection for emerging vegetation. Reclamation or surface contouring to restore all disturbed areas would start upon completion of the project, or as specified by the BLM.

Reseeding would be completed in the Fall, prior to freezing. The area would be drill seeded with the seed mixes shown in TABLE II-2, II-3, and II-4. The mix in TABLE II-2 is designed as one advantageous to wildlife and livestock within the area, and would be seeded on the 1.35 mile reclaimed section of the Dugout Canyon Road. The riparian seed mix in TABLE II-3 would be seeded along the reclaimed Soldier Creek crossing, and all proposed crossings. This mix, as well as the mix in TABLE II-4, were designed for erosion control and slope stabilization, rather than wildlife enhancement. The mix in TABLE II-4, to be seeded along the edge of the road, was especially designed as a wildlife repellant to deter big-game use along the road. Areas with excessively steep slopes (2:1) would be hydroseeded at twice the seed rate outlined for drill seeding. Bare root or containerized native shrubs with significant root structure would be hand planted on 10 foot spacings on all steep slopes within the ROW above and below the proposed road. Select species, based on cross-sections of the proposed road alignment, are as follows:

Station	Common Name	Scientific Name
455-430	chokecherry (33%)	Prunus virginiana
	Utah serviceberry (33%)	Amelanchier utahensis
	elderberry (33%)	Sambucus spp.
430-103	Birchleaf mountain mahogany (50%)	Cercocarpus montanus
	Utah serviceberry (50%)	Amelanchier utahensis

The riparian seed mix would be applied to an area 30 feet on each side of the reclaimed Soldier Creek crossing, and upon any part of the channel disturbed by reclamation activities. This seed mix would be also used upon the completion of the new Soldier Creek crossing proposed, as well as along the proposed UP&L crossing. In association with the riparian seed mix, willow cuttings would be planted on a one per linear foot of streambank spacing.

In association with the 1.35 mile section of the Dugout Canyon Road that would be reclaimed, approximately 0.34 miles (1.11 acres) of the existing road would be revegetated. These areas, based on cross-sections established for the proposed road in Plates 1 through 15 are:

Station	Length (feet)	Acres
308-313	500	0.28
349-354	500	0.28
385-387	200	0.11
418-420	200	0.11
423-429	600	0.33

Where road sections are eliminated, road base would be removed prior to reclamation. All cuts would be pulled back to the

approximate original contour and drainages would be reestablished. Concurrent with recontouring, 200 pounds per acre of 16-16-8 fertilizer would be incorporated into the top six inches of soil. In addition, 100 pounds per acre of 16-16-8 fertilizer would be incorporated into the mulch application.

Maintenance crews would obtain written approval from the BLM before using insecticides, herbicides, fungicides, rodenticides, and other similar substances. The plan would describe the type and quantity of material to be used, the pest to be controlled, the method of application, the location for storage and disposal of containers, and any other information that the BLM may require. Pesticides would be used only in accordance with its registered uses and within all other agency limitations.

An awareness and appreciation of wildlife would be taught to all employees associated with the proposed action. All activities associated with the road development and powerline upgrade would be coordinated to minimize impacts to all wildlife species. If active raptor nests are located within 0.5 miles of any portion of the proposed action, construction would not begin within that area until July 16. Construction would not occur upon critical deer and elk winter range until after June 15, 1996. Completion of all construction would occur on or before October 15, 1996, prior to established winter big game use of the area. 1.35 miles of existing road would be reclaimed to enhance wildlife habitat. Habitat would be enhanced to help offset the loss of forage in association with the construction losses.

All speed limits would be posted at 40 miles per hour or less on the new road. Where visibility along the road is limited by vegetation in excess of four feet, selective thinning would be conducted to minimize the potential for collision between vehicles and both wildlife and domestic stock.

Abandonment and Reclamation

The Dugout Canyon Road is a county road, and would be utilized by various user groups other than the Dugout Canyon Mine. The expected life of the mine is 22 years, which upon cessation of activities, would be dismantled and reclaimed. At that time, Carbon County may find it to their advantage to cease full season maintenance of the paved road. However, elimination of the road is not expected to occur.

If UP&L finds that it would be to their advantage to terminate the use of the Dugout Canyon Tap Line, it would be done in accordance to the BLM guideline stipulations at the time of removal. An appropriate schedule for activities associated with dismantling of the powerline would be established at that time. Upon dismantling of the line, a reclamation plan would be implemented for the established ROW.

TABLE II-2

SEED MIX FOR RECLAIMED PORTION OF DUGOUT CANYON ROAD (1.35 MILES)

	LBS PLS/ACRE*
GRASSES	
Needle and Thread	
Stipa comata	2.0
Indian ricegrass	
Oryzopis hymenoides	2.0
Great basin wildrye	
Elymus cinereus	1.0
Thickspike wheatgrass	
Agropyron dasystachyum	1.5
Galleta	
Hilaria jamesii	2.0
FORBS	
Lewis flax	
Linum lewisii	1.5
Yellow sweetclover	
Melilotus officinalis	1.5
Palmer penstemon	
Penstemon palmeri	1.0
SHRUBS	
Black sagebrush	
Artemisia nova	0.5
Winterfat	
Eurotia lanata	1.0
Mormon tea	
Ephedra nevadensis	0.5
Douglas rabbitbrush	
Chrysothamnus viscidiflorus	1.0
Fourwing saltbush	
Atriplex canescens	1.0
TOTAL	16.5

* Rate is pounds per acre pure live seed drillseeded. Pure Live Seed (PLS) formula: % of purity of seed mixture times % germination of seed mixture + portion of seed mixture that is PLS.

TABLE II-3

RIPARIAN SEED MIX FOR RECLAIMED AND PROPOSED SOLDIER CREEK CROSSING

	LBS PLS/ACRE*
GRASSES	
Streambank wheatgrass	
Agropyron riparium	2.0
Alkali sacaton	
Sporobolus airoides	1.0
Reed canary grass	
Phalaris arundinacea	1.0
Kentucky bluegrass	
Poa pratensis	1.0
Saltgrass	
Distichlis spicata	1.0
Beaked sedge	
Carex rostrata	1.0
FORBS	
Strawberry clover	
Trifolium fragiferum	1.0
Blueleaf aster	
Aster glaucodes	1.0
SHRUBS	
Woods rose	
Rosa woodsii	1.0
Douglas rabbitbrush	
Chrysothamnus viscidiflorus	1.0
Squawbush	
Rhus trilobata	1.0
TOTAL	12.0

BARE ROOT STOCK (PLANTED SPRING 1997)

Narrowleaf cottonwood	
Populus angustifolia	*(clumps of 5 every 20 linear feet of stream bank)*
Coyote willow	
Salix exigua	*(1 cutting every linear foot of stream bank)*

* *Rate is pounds per acre pure live seed drillseeded. Pure Live Seed (PLS) formula: % of purity of seed mixture times % germination of seed mixture + portion of seed mixture that is PLS.*

TABLE II-4

RECOMMENDED SEED MIX FOR PROPOSED ROAD ROW

	LBS PLS/ACRE*
GRASSES	
Blue gramma	
Bouteloua gracilis	2.0
Galleta	
Hilaria jamesii	2.0
Sand dropseed	
Sporobolus cryptandrus	2.0
Alkali sacaton	
Sporobolus airoides	1.0
FORBS	
Purple verbana	
Verbana stricta	1.0
Nelson globemallow	
Sphaeralcea parvifolia	1.0
SHRUBS	
Black sagebrush	
Artemisia nova	1.0
Winterfat	
Eurotia lanata	1.0
Shadscale	
Atriplex confertifolia	1.0
Green ephedra	
Ephedra viridis	1.0
TOTAL	13.0

* Rate is pounds per acre pure live seed drillseeded. Pure Live Seed (PLS) formula: % of purity of seed mixture times % germination of seed mixture + portion of seed mixture that is PLS.

Use of the US West phoneline, as well as any other structure within the proposed utility corridor, would most likely be determined by the life of the mine. Upon cessation of mine activities, and in accordance with the best interests of the corridor users, an appropriate BLM procedures for removal would be initiated.

C. NO ACTION ALTERNATIVE

Under the No Action Alternative, the current situation would be maintained and no road expansion/improvement, powerline upgrade, or utility corridor would be constructed. The proposed Dugout Mine would need to evaluate other means for support to its facility, as well as transport of anticipated coal produced.

CHAPTER III. AFFECTED ENVIRONMENT

A. INTRODUCTION

The resources that make up the affected environment were identified through baseline studies done at the site of the proposed road development and along the established powerline ROW, issues raised during the scoping process, and consultation with numerous public agencies as directed by the administering agency (BLM Price River Resource Area). Description and explanation of all affected resources are in accordance of those provisions set out by the National Environmental Policy Act (NEPA) of 1969 and all subsequent regulations implementing that law.

The following resources have not been identified within the area impacted by the proposed project and, therefore, will not be addressed in the discussion of associated on-site resources (Affected Resources).

Floodplain, Wetlands and Prime or Unique Farm Lands (APPENDIX C)

Wilderness Areas, Wilderness Study Areas and Areas of Critical Environmental Concern

Wild and Scenic Rivers

Native American Religious Concerns

B. GENERAL SETTING

The area is located within the Colorado Plateau Physiographic Province. The High Plateaus of Utah and the Canyonlands sections meet along the Book Cliffs, of which Dugout Canyon cuts into. The proposed project area is characteristic of the mid-elevations of the province, consisting of deep, rugged washes and open plateaus. Average elevation in the area of the proposed action is 6000 feet above sea level, and is characterized by hot, dry summers and cold, moist winters. Most of the available water results from winter accumulation. Summer precipitation comes from short duration thunderstorms which often result in flooding and erosion (Lines et al, 1984). Characteristic vegetation is a contrasting pattern of pinyon-juniper forests intermixed with shrubs and grasses. The area is predominantly an undisturbed natural setting with an occasional dirt access road exiting the graveled Dugout Canyon Road. Past disturbance has been limited to areas next to the existing access road and adjacent to associated mining sites within the canyon.

1. Soils

Soils located within the area of the proposed action are described in Soil Survey of Carbon Area, Utah, a Soil Conservation Service (now NRCS) publication. The following soil unit, complex and type information was gathered from this source.

The area of the proposed action contains four general soil units. The Travessilla-Strych-Stormitt unit is located near the junction of Soldier Creek and Dugout Creek Road, and is generally present on gently sloping to moderately steep slopes. The Ravola-Persayo-Moffat unit is found in a small inclusion on nearly level to moderately steep slopes along the Dugout Creek Road. The Strych-Gerst-Travessilla unit is present over the upper reaches of the proposed area and is also found on nearly level to moderately steep slopes. At the terminus of the proposed action in Dugout Canyon, the Travessilla-Rock outcrop-Midfork family unit is present on the canyonsides and mountain slopes.

Twelve specific soils types make up the described general soil units. These soils are shown on PLATE III.

Gerst-Badland-Rubbleland Complex, 15-50 percent slopes: *This complex, found on mesa and fan terrace side slopes, is predominately Gerst made up of residuum and colluvium derived from sandstone and shale. 40 percent of the complex is Gerst, 25 percent Badland, 20 percent Rubbleland rock and 15 percent miscellaneous soils. Gerst soil is shallow, and well drained, with depth to weathered shale ranging from 10 to 20 inches. Permeability of Gerst is moderately slow with high runoff, resulting in a high water erosion hazard. Badland soils are very steep, with rapid runoff. This soil is found on nearly barren areas of shale, and therefore is highly erodible. Rubbleland consists of boulders and stones with little to no vegetation.*

Gerst-Badland-Stromitt Complex, 10-60 percent slopes: *55 percent of this complex is Gerst cobbly loam, dry, on 30 to 60 percent hill slopes. Like the previous complex, Gerst is shallow, well drained, with depth to soft shale at 10 to 20 inches, and derived from residuum and colluvium. However, runoff from the moderately permeable soil is not as severe. The remaining complex consists of 20 percent Badland and 15 percent Stromitt gravelly sandy clay loam, dry, on 10 to 30 percent slopes. Stromitt soil, formed in colluvium and glacial outwash derived from sandstone, shale and quartzite, is very deep (60 inches or more to bedrock). Although it is well drained and moderately permeable, runoff is rapid and has a high hazard for water erosion.*

Gerst-Strych-Badland Complex, 3-50 percent slopes: *Gerst stony loam makes up 40 percent of this complex. It is found on 15 to 50 percent eroded foot slopes. Strych very stony loam, located on 3 to 15 percent toe slopes, makes up 30 percent of the complex.*

Strych is very deep (100 plus inches), moderately permeable, with medium runoff, but severe hazard from water erosion. The remaining 30 percent of the complex is made up of 15 percent Badland, 10 percent Travessilla sandy loam on small remnant tops, and 5 percent Haverdad moist loam in drainageways. Badland soils, located on barren foot slopes, are steep with interbedded sandstone.

Gerst-Strych-Badland Complex, 50-70 percent slopes: *This complex is generally found on the sides of bench slopes. It consists of 50 percent Gerst stony loam and 15 percent Strych very stony loam on 50 to 70 percent slopes, 15 percent Badland and 20 percent miscellaneous soils. Miscellaneous soils include 10 percent Rubbleland, 5 percent Travessilla sandy loam and 5 percent Rock outcrop on remnant tops. Gerst is shallow (depth to 20 inches) with moderately slow permeability. Runoff is rapid and the hazard from water erosion is high. Strych soil, rather, is deep (60 plus inches to bedrock) and rapidly permeable. However, due to the severe slope, runoff is rapid and hazard from water erosion is high. Runoff from the nearly barren and steep Badland soil is very active.*

Haverdad loam, 1-8 percent slopes: *This very deep soil formed from sandstone and shale alluvium is found on alluvial fans and valley floors. It is moderately permeable with slow runoff. Hazard from wind and water erosion is moderate. Other soil types found in association with Haverdad are Ravola loam, alkali, on 3 to 6 percent slopes, and small areas of Billings silty clay loam and Haverdad loam, alkali, on 0 to 30 percent eroded slopes. Isolated areas of strongly alkaline areas are also present.*

Haverdad loam, alkali, 0-3 percent slopes: *This very deep (60 plus inches) soil type is nearly identical in nature to the Haverdad loam on 1 to 8 percent slopes. It is found in association with Glenburg family soils on steep slopes, and can generally be found on fan terraces, alluvial fans, and valley floors. Permeability is moderate, with slow runoff and moderate hazard from water and wind erosion.*

Haverdad loam, moist, 1-5 percent slopes: *This very deep prime farmland soil is found on alluvial fans and valley floors with other Haverdad members, as well as Glenburg family soils on 3 to 6 percent slopes. It is moderately permeable with slow runoff. The hazard of wind and water erosion is moderate.*

Hernandez Family, moist, 1-6 percent slopes: *Generally located on fan terraces, this deep (up to 60 inches), well drained prime farmland soil is found in association with Strych very stony loam on erratically located stone bars. It is also found with Haverdad loam, moist, in draws and with similar, but deeper, alluvium soil types derived from sandstone and shale. It is moderately permeable, has slow runoff, and has a moderate hazard from wind and water erosion.*

Mivada gravelly fine sandy loam, 3-8 percent slopes: *This soil was formed in alluvium derived from sandstone and shale. Located on benches, mesas, and fan terraces, this deep (up to 60 inches), well drained, rapidly permeable soil can be found in association with Strych very stony loam on outwash plains, Haverdad loam, moist, in drainageways, Gerst soils on canyonsides. Runoff is slow with a moderate hazard from water and wind erosion.*

Persayo-Greybull Complex, 3-8 percent slopes: *This complex consists of 55 percent Persayo loam on 3 to 8 percent small ridge slopes, 35 percent Greybull loam on 3 to 8 percent hill and swale slopes, 5 percent Ravola loam on 1 to 3 percent swale slopes, and small areas of dry Travessilla soils on 3 to 20 percent slopes. Persayo, formed from residuum derived from shale, is shallow, with depth from 10 to 20 inches over soft shale. It has a moderately slow permeability with medium runoff and moderate hazard from water erosion. Greybull, rather, is deep (20 to 40 inches to weathered shale). Formed from alluvium derived from sandstone and shale, it is moderately permeable with medium runoff. The hazard from wind and water erosion is moderate.*

Rock Outcrop-Rubbleland-Travessilla Complex, 30-70 percent slopes: *This soil type found on steep mesa escarpments and canyonsides, is primarily sandstone and limestone Rock outcrop (35 percent) and barren Rubbleland (30 percent). 25 percent of the complex is Travessilla very gravelly fine sandy loam on 30 to 70 percent slopes, with the remaining 10 percent being intermingled Gerst extremely stony loam and Strych very stony loam on 50 to 70 percent slopes. Travessilla, formed from residuum and colluvium derived from sandstone is shallow, with depth to sandstone from 7 to 20 inches. It is rapidly permeable, but has high runoff due to its slope. Hazard from water erosion is severe.*

Strych very stony loam, 3-15 percent slopes: *This very deep (100 plus inches) well drained soil is present within the mouth of Dugout Canyon. Formed from glacial outwash and alluvium derived from sandstone and shale, Strych can be found in association with Chupadera fine sandy loam and with similar, but weakly developed cobbled soils. Atrac and Hernandez family members are also present. This Strych member is moderately rapid with medium runoff. Hazard from water erosion is moderate.*

Haverdad soils, located along the base of alluvial fan slopes and valley floors along the Dugout drainage, are predominant along the route of the proposed road. Where the road cuts through side slopes and ridge tops, members of the Gerst, Strych and Travessilla families are exposed. Near the Dugout Canyon Mine, in the upper reaches of the proposed action, Rock outcrops and Rubbleland are predominant, with Travessilla and Strych family members.

Along the base of the Bookcliffs, the majority of the route of the powerline overlies Strych and Gerst members. Hernandez members are

also encountered along the base of fan terraces. As the powerline enters Dugout Canyon and parallels the road, Haverdad loam is encountered along the slopes above the creek bottom.

All soil types are moderate to highly erodible within the area of the proposed action, with the exception of the occurrence of deep and well drained Haverdad members along the majority of the affected area. The wind and water erosion hazards of the remaining soils are due in part to the shallow depth of the stony Gerst, Strych and Travessilla members, unconsolidated cobbly and stony material, as well as the steep slopes found along the majority of the road and powerline routes.

A letter from the NRCS confirming that no Prime Farmland soils are present within the area of the proposed action is included as APPENDIX C.

2. Surface Hydrology

Dugout Creek, a 5.7 square mile perennial drainage, lies adjacent to approximately four miles of the Dugout Canyon Road. This creek is primarily fed by subsurface runoff from the Flagstaff and Blackhawk Members, resulting in approximately 63 percent of its annual flow of 1,900 acre feet (Waddell et al., 1986). Data gathered by Waddell indicates that high dissolved solid levels are found along the length of Dugout Creek due to interbedding of the Blackhawk and Mancos Members, as well as flow over Mancos Shale. The remaining 27 percent of discharge (700 acre feet) is supplied by surface flow from the numerous ephemeral drainages that make up the drainage area. Historical flows recorded at the gaging station located near the upper end of the proposed action, were approximately 10 to 20 cubic feet per second in the spring and receded to as much as 1.0 to 0.5 cubic feet per second in late summer and fall (Waddell et al., 1986). Sudden and intense 24 hour events in late summer have resulted in as much as 1.3 inches of precipitation and flows exceeding 30 cubic feet per second (Waddell et al., 1986).

Past disturbances, probably associated with construction of the existing Dugout Canyon Road, have resulted in a largely nonfunctioning, channelized section along Dugout Creek within Dugout Canyon. Meandering and channel integrity of the creek resumes below the mouth of the canyon, where a substantial riparian area has formed. The BLM has determined that this area is classified as functioning at risk, for further management decisions.

Access to the proposed project crosses Soldier Creek, a 17.7 mile perennial drainage, in two separate locations. The location of the proposed bridge crossing is within a highly disturbed section. A construction crossing associated with the proposed powerline upgrade is located further upstream in a more functionally stable

location. APPENDIX A shows these two areas and their relation to the proposed action. Water rights associated with the area of the proposed action are also included in APPENDIX A.

3. Cultural Resources

Archeological literature and site surveys were conducted by SENCO-PHENIX in March and April of 1996. Upon a thorough file search of past cultural inventories and in consultation with the Utah State Historical Preservation Office (SHPO), six cultural resource sites are known to occur within the area of the proposed action. 42CB-92, a pictograph site located in T. 13 S. R. 11 E., Section 22, and 42CB-562, a prehistoric cist located in T. 14 S. R. 11 E., Section 13 are recommended for nomination to the National Register. 42CB-291, the remains of the former Dugout Mine, and 42CB-167, a historic petroglyph site in T. 13 S. R. 12 E., Section 27 are recorded but noneligible Historic Register sites.

Of the six known sites, two are prehistoric campsites. 42CB-168, located in T. 13 S. R. 12 E., Section 23, and a unrecorded Fremont Village in T. 13 S. R. 12 E., Section 33 and 34, will require further evaluation to determine if they are eligible for the National Register.

Site-specific field inventories of the proposed 0.8 mile road addition and four acre borrow/storage site were conducted as well. Within the area of the borrow/storage site, two prehistoric secondary flakes were located. However, these flakes have no significance for the National Register. No significant cultural resources were identified within the 0.8 mile road addition.

Three wooden bridges, built in the late 1950's, are located along the existing Dugout Creek Road. A letter documenting their age and use is included in APPENDIX D.

Copies of the inventories conducted by SENCO-PHENIX are on file with the BLM Price River Resource Area.

4. Land Use

Land use information was compiled from maps, existing literature, and from public and private agencies. Land jurisdiction and ownership for the proposed project area is public and private. Dominant land uses in the area of the proposed road and powerline upgrade include livestock grazing and wildlife habitat. Other land uses include hunting, wildlife viewing, off-road vehicle (ORV), mountain biking, and fuel wood gathering.

Private land ownership and land use existing in the area of the proposed powerline is shown on PLATE IV. Area-wide uses surrounding the proposed action include one paved and numerous unpaved roads. Southwest of the project area lies the town of

Wellington, Utah. To the north lie the Book Cliffs and Nine Mile Canyon, both popular year-round recreation areas.

Grazing

The overall project area includes portions of the Pace Canyon and Soldier Canyon cattle allotments. The Pace Canyon allotment is located along the cliffs near the mouth of Dugout Canyon and has a June 1 to October 31 seasonal use for 80 AUMs. The Soldier Canyon allotment, located to the south, practices a use rest rotation. Seasonal use runs from November 16 to June 15 for 835 AUMs. A portion of the existing Dugout Canyon Road crosses through the southern portion of the Soldier Canyon allotment. The location of the Pace Canyon and Soldier Canyon cattle grazing allotments are shown on PLATE IV.

Recreation

No developed, or special recreation management areas exist within the actual project area. Dispersed recreation (i.e. hunting, off-road vehicle use, scenic driving, spring wildlife viewing, mountain biking) occur throughout this relatively pristine rural area, but are limited due to access availability (See Vehicular Travel). Since there is no winter maintenance of the Dugout Road, recreation activities are confined to spring, summer and fall activities. Soldier Creek Road is a recognized scenic byway, as well as a primary access to Nine Mile Canyon and the extensive array of cultural and recreational resources found there.

Noise

Current noise levels in the vicinity of the proposed road are unknown. However, noise levels have been estimated, using published data (NAS, 1977). Current noise levels for a typical undeveloped rural area, like the Dugout area, with a population density of 10 people per square mile and with no well defined noise source other than from traffic, most likely never exceed 35 dBA.

Based upon a partially developed, rural area, like Wellington, with a population density of 25 people per square mile, potential noise levels along Soldier Creek Road to U.S. Highway 6 are potentially between 45 and 50 dBA.

Vehicular Travel

At present, Dugout Canyon Road experiences little year round traffic. The road is not maintained on a regular bases and is virtually inaccessible during late fall through early spring, when snow and or mud preclude conventional vehicles. The heaviest use occurs during the fall Utah deer hunt with some additional travel involving wood gathering, recreational driving, site seeing, and

Use of the US West phoneline, as well as any other structure within the proposed utility corridor, would most likely be determined by the life of the mine. Upon cessation of mine activities, and in accordance with the best interests of the corridor users, an appropriate BLM procedures for removal would be initiated.

C. NO ACTION ALTERNATIVE

Under the No Action Alternative, the current situation would be maintained and no road expansion/improvement, powerline upgrade, or utility corridor would be constructed. The proposed Dugout Mine would need to evaluate other means for support to its facility, as well as transport of anticipated coal produced.

CHAPTER III. AFFECTED ENVIRONMENT

A. INTRODUCTION

The resources that make up the affected environment were identified through baseline studies done at the site of the proposed road development and along the established powerline ROW, issues raised during the scoping process, and consultation with numerous public agencies as directed by the administering agency (BLM Price River Resource Area). Description and explanation of all affected resources are in accordance of those provisions set out by the National Environmental Policy Act (NEPA) of 1969 and all subsequent regulations implementing that law.

The following resources have not been identified within the area impacted by the proposed project and, therefore, will not be addressed in the discussion of associated on-site resources (Affected Resources).

Floodplain, Wetlands and Prime or Unique Farm Lands (APPENDIX C)

Wilderness Areas, Wilderness Study Areas and Areas of Critical Environmental Concern

Wild and Scenic Rivers

Native American Religious Concerns

B. GENERAL SETTING

The area is located within the Colorado Plateau Physiographic Province. The High Plateaus of Utah and the Canyonlands sections meet along the Book Cliffs, of which Dugout Canyon cuts into. The proposed project area is characteristic of the mid-elevations of the province, consisting of deep, rugged washes and open plateaus. Average elevation in the area of the proposed action is 6000 feet above sea level, and is characterized by hot, dry summers and cold, moist winters. Most of the available water results from winter accumulation. Summer precipitation comes from short duration thunderstorms which often result in flooding and erosion (Lines et al, 1984). Characteristic vegetation is a contrasting pattern of pinyon-juniper forests intermixed with shrubs and grasses. The area is predominantly an undisturbed natural setting with an occasional dirt access road exiting the graveled Dugout Canyon Road. Past disturbance has been limited to areas next to the existing access road and adjacent to associated mining sites within the canyon.

1. Soils

Soils located within the area of the proposed action are described in Soil Survey of Carbon Area, Utah, a Soil Conservation Service (now NRCS) publication. The following soil unit, complex and type information was gathered from this source.

The area of the proposed action contains four general soil units. The Travessilla-Strych-Stormitt unit is located near the junction of Soldier Creek and Dugout Creek Road, and is generally present on gently sloping to moderately steep slopes. The Ravola-Persayo-Moffat unit is found in a small inclusion on nearly level to moderately steep slopes along the Dugout Creek Road. The Strych-Gerst-Travessilla unit is present over the upper reaches of the proposed area and is also found on nearly level to moderately steep slopes. At the terminus of the proposed action in Dugout Canyon, the Travessilla-Rock outcrop-Midfork family unit is present on the canyonsides and mountain slopes.

Twelve specific soils types make up the described general soil units. These soils are shown on PLATE III.

Gerst-Badland-Rubbleland Complex, 15-50 percent slopes: *This complex, found on mesa and fan terrace side slopes, is predominately Gerst made up of residuum and colluvium derived from sandstone and shale. 40 percent of the complex is Gerst, 25 percent Badland, 20 percent Rubbleland rock and 15 percent miscellaneous soils. Gerst soil is shallow, and well drained, with depth to weathered shale ranging from 10 to 20 inches. Permeability of Gerst is moderately slow with high runoff, resulting in a high water erosion hazard. Badland soils are very steep, with rapid runoff. This soil is found on nearly barren areas of shale, and therefore is highly erodible. Rubbleland consists of boulders and stones with little to no vegetation.*

Gerst-Badland-Stromitt Complex, 10-60 percent slopes: *55 percent of this complex is Gerst cobbly loam, dry, on 30 to 60 percent hill slopes. Like the previous complex, Gerst is shallow, well drained, with depth to soft shale at 10 to 20 inches, and derived from residuum and colluvium. However, runoff from the moderately permeable soil is not as severe. The remaining complex consists of 20 percent Badland and 15 percent Stromitt gravelly sandy clay loam, dry, on 10 to 30 percent slopes. Stromitt soil, formed in colluvium and glacial outwash derived from sandstone, shale and quartzite, is very deep (60 inches or more to bedrock). Although it is well drained and moderately permeable, runoff is rapid and has a high hazard for water erosion.*

Gerst-Strych-Badland Complex, 3-50 percent slopes: *Gerst stony loam makes up 40 percent of this complex. It is found on 15 to 50 percent eroded foot slopes. Strych very stony loam, located on 3 to 15 percent toe slopes, makes up 30 percent of the complex.*

Strych is very deep (100 plus inches), moderately permeable, with medium runoff, but severe hazard from water erosion. The remaining 30 percent of the complex is made up of 15 percent Badland, 10 percent Travessilla sandy loam on small remnant tops, and 5 percent Haverdad moist loam in drainageways. Badland soils, located on barren foot slopes, are steep with interbedded sandstone.

Gerst-Strych-Badland Complex, 50-70 percent slopes: *This complex is generally found on the sides of bench slopes. It consists of 50 percent Gerst stony loam and 15 percent Strych very stony loam on 50 to 70 percent slopes, 15 percent Badland and 20 percent miscellaneous soils. Miscellaneous soils include 10 percent Rubbleland, 5 percent Travessilla sandy loam and 5 percent Rock outcrop on remnant tops. Gerst is shallow (depth to 20 inches) with moderately slow permeability. Runoff is rapid and the hazard from water erosion is high. Strych soil, rather, is deep (60 plus inches to bedrock) and rapidly permeable. However, due to the severe slope, runoff is rapid and hazard from water erosion is high. Runoff from the nearly barren and steep Badland soil is very active.*

Haverdad loam, 1-8 percent slopes: *This very deep soil formed from sandstone and shale alluvium is found on alluvial fans and valley floors. It is moderately permeable with slow runoff. Hazard from wind and water erosion is moderate. Other soil types found in association with Haverdad are Ravola loam, alkali, on 3 to 6 percent slopes, and small areas of Billings silty clay loam and Haverdad loam, alkali, on 0 to 30 percent eroded slopes. Isolated areas of strongly alkaline areas are also present.*

Haverdad loam, alkali, 0-3 percent slopes: *This very deep (60 plus inches) soil type is nearly identical in nature to the Haverdad loam on 1 to 8 percent slopes. It is found in association with Glenburg family soils on steep slopes, and can generally be found on fan terraces, alluvial fans, and valley floors. Permeability is moderate, with slow runoff and moderate hazard from water and wind erosion.*

Haverdad loam, moist, 1-5 percent slopes: *This very deep prime farmland soil is found on alluvial fans and valley floors with other Haverdad members, as well as Glenburg family soils on 3 to 6 percent slopes. It is moderately permeable with slow runoff. The hazard of wind and water erosion is moderate.*

Hernandez Family, moist, 1-6 percent slopes: *Generally located on fan terraces, this deep (up to 60 inches), well drained prime farmland soil is found in association with Strych very stony loam on erratically located stone bars. It is also found with Haverdad loam, moist, in draws and with similar, but deeper, alluvium soil types derived from sandstone and shale. It is moderately permeable, has slow runoff, and has a moderate hazard from wind and water erosion.*

Mivada gravelly fine sandy loam, 3-8 percent slopes: *This soil was formed in alluvium derived from sandstone and shale. Located on benches, mesas, and fan terraces, this deep (up to 60 inches), well drained, rapidly permeable soil can be found in association with Strych very stony loam on outwash plains, Haverdad loam, moist, in drainageways, Gerst soils on canyonsides. Runoff is slow with a moderate hazard from water and wind erosion.*

Persayo-Greybull Complex, 3-8 percent slopes: *This complex consists of 55 percent Persayo loam on 3 to 8 percent small ridge slopes, 35 percent Greybull loam on 3 to 8 percent hill and swale slopes, 5 percent Ravola loam on 1 to 3 percent swale slopes, and small areas of dry Travessilla soils on 3 to 20 percent slopes. Persayo, formed from residuum derived from shale, is shallow, with depth from 10 to 20 inches over soft shale. It has a moderately slow permeability with medium runoff and moderate hazard from water erosion. Greybull, rather, is deep (20 to 40 inches to weathered shale). Formed from alluvium derived from sandstone and shale, it is moderately permeable with medium runoff. The hazard from wind and water erosion is moderate.*

Rock Outcrop-Rubbleland-Travessilla Complex, 30-70 percent slopes: *This soil type found on steep mesa escarpments and canyonsides, is primarily sandstone and limestone Rock outcrop (35 percent) and barren Rubbleland (30 percent). 25 percent of the complex is Travessilla very gravelly fine sandy loam on 30 to 70 percent slopes, with the remaining 10 percent being intermingled Gerst extremely stony loam and Strych very stony loam on 50 to 70 percent slopes. Travessilla, formed from residuum and colluvium derived from sandstone is shallow, with depth to sandstone from 7 to 20 inches. It is rapidly permeable, but has high runoff due to its slope. Hazard from water erosion is severe.*

Strych very stony loam, 3-15 percent slopes: *This very deep (100 plus inches) well drained soil is present within the mouth of Dugout Canyon. Formed from glacial outwash and alluvium derived from sandstone and shale, Strych can be found in association with Chupadera fine sandy loam and with similar, but weakly developed cobbled soils. Atrac and Hernandez family members are also present. This Strych member is moderately rapid with medium runoff. Hazard from water erosion is moderate.*

Haverdad soils, located along the base of alluvial fan slopes and valley floors along the Dugout drainage, are predominant along the route of the proposed road. Where the road cuts through side slopes and ridge tops, members of the Gerst, Strych and Travessilla families are exposed. Near the Dugout Canyon Mine, in the upper reaches of the proposed action, Rock outcrops and Rubbleland are predominant, with Travessilla and Strych family members.

Along the base of the Bookcliffs, the majority of the route of the powerline overlies Strych and Gerst members. Hernandez members are

also encountered along the base of fan terraces. As the powerline enters Dugout Canyon and parallels the road, Haverdad loam is encountered along the slopes above the creek bottom.

All soil types are moderate to highly erodible within the area of the proposed action, with the exception of the occurrence of deep and well drained Haverdad members along the majority of the affected area. The wind and water erosion hazards of the remaining soils are due in part to the shallow depth of the stony Gerst, Strych and Travessilla members, unconsolidated cobbly and stony material, as well as the steep slopes found along the majority of the road and powerline routes.

A letter from the NRCS confirming that no Prime Farmland soils are present within the area of the proposed action is included as APPENDIX C.

2. Surface Hydrology

Dugout Creek, a 5.7 square mile perennial drainage, lies adjacent to approximately four miles of the Dugout Canyon Road. This creek is primarily fed by subsurface runoff from the Flagstaff and Blackhawk Members, resulting in approximately 63 percent of its annual flow of 1,900 acre feet (Waddell et al., 1986). Data gathered by Waddell indicates that high dissolved solid levels are found along the length of Dugout Creek due to interbedding of the Blackhawk and Mancos Members, as well as flow over Mancos Shale. The remaining 27 percent of discharge (700 acre feet) is supplied by surface flow from the numerous ephemeral drainages that make up the drainage area. Historical flows recorded at the gaging station located near the upper end of the proposed action, were approximately 10 to 20 cubic feet per second in the spring and receded to as much as 1.0 to 0.5 cubic feet per second in late summer and fall (Waddell et al., 1986). Sudden and intense 24 hour events in late summer have resulted in as much as 1.3 inches of precipitation and flows exceeding 30 cubic feet per second (Waddell et al., 1986).

Past disturbances, probably associated with construction of the existing Dugout Canyon Road, have resulted in a largely nonfunctioning, channelized section along Dugout Creek within Dugout Canyon. Meandering and channel integrity of the creek resumes below the mouth of the canyon, where a substantial riparian area has formed. The BLM has determined that this area is classified as functioning at risk, for further management decisions.

Access to the proposed project crosses Soldier Creek, a 17.7 mile perennial drainage, in two separate locations. The location of the proposed bridge crossing is within a highly disturbed section. A construction crossing associated with the proposed powerline upgrade is located further upstream in a more functionally stable

location. APPENDIX A shows these two areas and their relation to the proposed action. Water rights associated with the area of the proposed action are also included in APPENDIX A.

3. Cultural Resources

Archeological literature and site surveys were conducted by SENCO-PHENIX in March and April of 1996. Upon a thorough file search of past cultural inventories and in consultation with the Utah State Historical Preservation Office (SHPO), six cultural resource sites are known to occur within the area of the proposed action. 42CB-92, a pictograph site located in T. 13 S. R. 11 E., Section 22, and 42CB-562, a prehistoric cist located in T. 14 S. R. 11 E., Section 13 are recommended for nomination to the National Register. 42CB-291, the remains of the former Dugout Mine, and 42CB-167, a historic petroglyph site in T. 13 S. R. 12 E., Section 27 are recorded but noneligible Historic Register sites.

Of the six known sites, two are prehistoric campsites. 42CB-168, located in T. 13 S. R. 12 E., Section 23, and a unrecorded Fremont Village in T. 13 S. R. 12 E., Section 33 and 34, will require further evaluation to determine if they are eligible for the National Register.

Site-specific field inventories of the proposed 0.8 mile road addition and four acre borrow/storage site were conducted as well. Within the area of the borrow/storage site, two prehistoric secondary flakes were located. However, these flakes have no significance for the National Register. No significant cultural resources were identified within the 0.8 mile road addition.

Three wooden bridges, built in the late 1950's, are located along the existing Dugout Creek Road. A letter documenting their age and use is included in APPENDIX D.

Copies of the inventories conducted by SENCO-PHENIX are on file with the BLM Price River Resource Area.

4. Land Use

Land use information was compiled from maps, existing literature, and from public and private agencies. Land jurisdiction and ownership for the proposed project area is public and private. Dominant land uses in the area of the proposed road and powerline upgrade include livestock grazing and wildlife habitat. Other land uses include hunting, wildlife viewing, off-road vehicle (ORV), mountain biking, and fuel wood gathering.

Private land ownership and land use existing in the area of the proposed powerline is shown on PLATE IV. Area-wide uses surrounding the proposed action include one paved and numerous unpaved roads. Southwest of the project area lies the town of

Wellington, Utah. To the north lie the Book Cliffs and Nine Mile Canyon, both popular year-round recreation areas.

Grazing

The overall project area includes portions of the Pace Canyon and Soldier Canyon cattle allotments. The Pace Canyon allotment is located along the cliffs near the mouth of Dugout Canyon and has a June 1 to October 31 seasonal use for 80 AUMs. The Soldier Canyon allotment, located to the south, practices a use rest rotation. Seasonal use runs from November 16 to June 15 for 835 AUMs. A portion of the existing Dugout Canyon Road crosses through the southern portion of the Soldier Canyon allotment. The location of the Pace Canyon and Soldier Canyon cattle grazing allotments are shown on PLATE IV.

Recreation

No developed, or special recreation management areas exist within the actual project area. Dispersed recreation (i.e. hunting, off-road vehicle use, scenic driving, spring wildlife viewing, mountain biking) occur throughout this relatively pristine rural area, but are limited due to access availability (See Vehicular Travel). Since there is no winter maintenance of the Dugout Road, recreation activities are confined to spring, summer and fall activities. Soldier Creek Road is a recognized scenic byway, as well as a primary access to Nine Mile Canyon and the extensive array of cultural and recreational resources found there.

Noise

Current noise levels in the vicinity of the proposed road are unknown. However, noise levels have been estimated, using published data (NAS, 1977). Current noise levels for a typical undeveloped rural area, like the Dugout area, with a population density of 10 people per square mile and with no well defined noise source other than from traffic, most likely never exceed 35 dBA.

Based upon a partially developed, rural area, like Wellington, with a population density of 25 people per square mile, potential noise levels along Soldier Creek Road to U.S. Highway 6 are potentially between 45 and 50 dBA.

Vehicular Travel

At present, Dugout Canyon Road experiences little year round traffic. The road is not maintained on a regular bases and is virtually inaccessible during late fall through early spring, when snow and or mud preclude conventional vehicles. The heaviest use occurs during the fall Utah deer hunt with some additional travel involving wood gathering, recreational driving, site seeing, and

wildlife viewing in the spring. Use of the Dugout Road at this time is estimated to be 10 to 15 vehicles per day.

Soldier Creek Road, the access to Dugout Canyon Road, serves the Soldier Creek Mine, a number of small ranches, and is an entry to Nine Mile Canyon. This highway is designated as a scenic byway and experiences a daily use of 35 to 100 vehicles accessing Nine Mile Canyon (BLM, 1996). Daily use numbers increase with use by ranch residents, and the coal mine work force. Coal production adds an additional 1.5, 40 ton coal trucks per hour. This traffic converges with the existing Dugout Canyon Road traffic for approximately eight miles to the termination of Soldier Creek Road at U.S. Highway 6.

Visual Resources

The project area is located in an area of broad open landscapes and broken benches, characteristic of the regional landscape of Southeast Utah. EXHIBIT III-1, III-2, and III-3 display views of the characteristic landscape of the proposed road. From the Soldier Creek Road, the proposed road would proceed over a broad sloping ridge for 0.8 miles. Upon cresting the ridge (EXHIBIT III-1), the topography opens for 0.75 miles, allowing views of Clark's Valley to the southwest (EXHIBIT III-2). The rest of the proposed road would lie along the bottom of the Dugout Creek drainage, bordered by steep pinyon-juniper benches (EXHIBIT III-3). The route of the established powerline is located along the base of the Book Cliffs with a dense overstory of pinyon-juniper. Both the road and the powerline are within an area managed as VRM Class III, as established by the Price River MFP.

EXHIBIT III-1
VIEW LOOKING NORTHWEST ALONG 0.8 MILE ROAD ADDITION
(KEY OBSERVATION POINT)