



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

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bcc:
Pam G
Daron H.
PFO

March 31, 2000

Richard D. Pick
Canyon Fuel Company, LLC
6995 South Union Park Center, Suite 540
Salt Lake City, Utah 84047

Re: Permit for Federal Lease U07064-027821, Dugout Canyon Mine, Canyon Fuel Company, LLC., ACT/007/039, Outgoing Folder

Pick
Dear Mr. Pick:

I am enclosing the Decision Document and revised permit for the Dugout Canyon Mine which authorizes mining and reclamation in federal lease U07064-027821 subject to federal mine plan approval. Please sign both copies of the permit and return one to the Division.

Please note the requirements and the timeframes associated with this permit. The Permit expires on March 16, 2003. Thank you for your cooperation during this permitting endeavor. If you have any questions, please call.

Sincerely,

Lowell
Lowell P. Braxton
Director

sm
Enclosure

cc: Joe Wilcox, OSM
David Terry, SITLA w/o
Ken Payne, Canyon Fuel Co.

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UTAH DIVISION OF OIL, GAS AND MINING
STATE DECISION DOCUMENT AND
TECHNICAL ANALYSIS

Canyon Fuel Company, LLC
Dugout Canyon Mine Federal Lease
ACT/007/039
Carbon County, Utah

March 30, 2000

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ADMINISTRATIVE OVERVIEW

Canyon Fuel Company, LLC
Dugout Canyon Mine Federal Lease
ACT/007/039
Carbon County, Utah

March 30, 2000

PROPOSAL

Canyon Fuel Company, LLC proposes to add Federal Lease U07064-027821 to the existing Dugout Canyon mining operation in Carbon County, Utah which is located approximately 11 miles northeast of Wellington, Utah. The proposal will add approximately 3134 acres to the existing permit area and bring the total permitted acreage of the mine to 7169 acres. The Federal lease consists of 2416.14 acres and is part of the Soldier Creek Logical Mining Unit (LMU). Additional surface area (728 acres) is being permitted to allow the Canyon Fuel Company to mine up to the lease boundary and still have potential surface subsidence area within the permit boundary.

The proposed new permit area will be mined as an extension of the existing Dugout Canyon Mine and no new surface facilities are proposed.

BACKGROUND

Mining in Dugout Canyon had its beginning in 1925 when D. J. Collins hand-developed the Red Glow Mine. After that, several other entities conducted small mining operations in the canyon off and on until approximately 1965. The reserve changed hands several times when finally Sunedco acquired the reserves in the early 1980's and permitted the property in hopes of developing a 5 million ton a year coal mine. The market never materialized and the mine was never developed. The permit was not kept active and was revoked on May 19, 1987. Coastal States Energy Company acquired the properties in 1993 as part of the acquisition of Soldier Creek Coal Company.

An application to permit the Dugout Canyon Mine was initiated by Coastal States Energy Company on March 15, 1996. Canyon Fuel Company, LLC became the applicant on December 20, 1996 when the Atlantic Richfield Companies purchased the Coastal properties. A permit for the Dugout Canyon Mine was issued on March 16, 1998 shortly after which construction of the mine commenced. Canyon Fuel Company, LLC determined that additional surface facilities would be needed and in May 1998, submitted an application to add 10 acres of BLM land to the permit which would increase the disturbed area to 20.1 acres. This was approved on October 16, 1998. Room and Pillar mining methods are currently being used at the mine and this will not change with the current proposal. Canyon Fuel has however expressed longwall mining may be planned in the future if the right market conditions are met.

ANALYSIS

The existing permit area consists of parts of two state coal leases, ML-42648 and ML-42649, some fee leases (owned by Canyon Fuel) and a 10 acre BLM Right-of-Way encompassing a total of 4035 acres. The proposed permit expansion will add 3134 acres bringing the total permit acreage to 7169 acres. 2416 acres of this will be the federal lease and approximately 728 acres will be added for a subsidence buffer zone area.

Canyon Fuel Company, LLC has not proposed to change the mining methods. Mining will take place by standard room and pillar methods and will occur in the Rock Canyon seam. Production is anticipated to reach approximately 2 million tons per year. Estimated reserves in the new federal lease area are estimated to be approximately 29 million tons bringing the total recoverable coal for the mine to approximately 45 million tons.

The surface facilities area is located on 10.4 acres belonging to the Canyon Fuel Company, LLC and 10 acres of BLM property making a total of 20.1 acres of disturbed area. It will be accessed from the Dugout Canyon Road, a Class B public road which is under the jurisdiction of Carbon County. No additional surface facilities or disturbances are planned as part of this Federal Lease addition.

RECOMMENDATION

This recommendation is based on the complete permit application package (PAP), the Technical Analysis (TA) conducted by the Division, the revised Cumulative Hydrologic Impact Assessment CHIA also prepared by the Division, and the administrative record. Canyon Fuel Company, LLC has demonstrated that mining within the Federal Lease U07064-027821 can be done in conformance with the Surface Mining Control and Reclamation Act, and the corresponding Utah Act and performance standards. The 510 (C) report on the Applicant Violator System for this mine reports no violations for Canyon Fuel Company, LLC.

It is recommended that approval be given for the addition of the 3134 acres, which includes Federal Lease U07064-027821, to the Dugout Canyon mine.

PERMITTING CHRONOLOGY

Canyon Fuel Company, LLC
Dugout Canyon Mine Federal Lease Addition
ACT/007/039
Carbon County, Utah

March 30, 2000

- May 21, 1999 Canyon Fuel Company, LLC submits the application for the addition of 3134 acres to the Dugout Canyon Mine which includes Federal Lease U07064-027821
- August 30, 1999 The application is determined administratively complete.
- October 7,14,21, 28, 1999 Publication of this permitting action, intent to add federal lease to the Dugout Canyon Mine, is published in the Sun Advocate.
- November 3, 1999 Division completes a technical review of the application and identifies deficiencies in a technical analysis that needs to be addressed.
- January 12, 2000 Canyon Fuel Company, LLC responds to the Technical Analysis.
- March 30, 2000 Final deficiencies are addressed. TA completed.
- March 30, 2000 Decision Document completed and Permit issued with two conditions, Mining in the federal lease subject to mining plan approval and Canyon Fuel Company, LLC must submit water monitoring data electronically.

MINE PLAN INFORMATION

Mine Name: Dugout Canyon Mine State ID: ACT/007/039

Permittee: Canyon Fuel Company, LLC County: Carbon

Controlled By: Arch Western Resources, Inc Contact Person(s): Richard Pick

Telephone: (801) 569-4700 Position: President

New/Existing: Both Mining Method: Room and Pillar

Federal Lease No(s): U-07064-027821

Legal Description(s): T. 13S. R. 12E., Sec. 13: S1/2, Sec 23: E1/2E1/2, W1/2SE1/4, NE1/4SW1/4, Sec. 24: All, Sec. 25: N1/2N1/2, Sec. 26: N1/2NE1/4 T.13S. R. 13E. Sec. 18: lots 3, 4, E1/2SW1/4, SE1/4, Sec.19: lots 1-4, E1/2W1/2, NE1/4, NW1/4SE1/4, Sec. 30: lot 1

State Lease No(s): ML-42648; ML-42649

Legal Description(s): ML-42648: T.13S., R12E., Sec 10: S1/2, Sec 11: S1/2, Sec 14 and 15: All, Sec. 17: E1/2SW1/4, SE1/4, NE1/4, Sec 20: E1/2NW1/4, SW1/4NW1/4, N1/2NW1/4, Sec 21: N1/2NW1/4, NE1/4, Sec 22: N1/2, N1/2S1/2, Sec 23: W1/2 NW1/4; ML-42649: T.13S., R.12E., Sec. 9 S1/2SE1/4

Fee Leases (identify): Canyon Fuel Fee

Description(s): T.13S., R12E. Sec 16: All, Sec 23: E1/2NW1/4. W1/2NE1/4

Other Leases or Rights-of-way (identify): BLM Right-of-Way UTU-76601

Description(s): T.13S., R12E. Sec 23: NE1/4NW1/4NW1/4SW1/4, N1/2NE1/4NW1/4SW1/4, SE1/4NW1/4NW1/4SW1/4

Ownership Data:

| <u>Surface Resources (acres):</u> | <u>Existing Permit Area</u> | <u>Proposed Permit Area</u> | <u>Total Life Of Mine Area</u> |
|-----------------------------------|-----------------------------|-----------------------------|--------------------------------|
| Federal | <u>10</u> | <u>566</u> | <u>576</u> |
| State | <u>920</u> | <u>0</u> | <u>920</u> |
| Private | <u>3105</u> | <u>2568</u> | <u>5673</u> |
| Other | | | |
| TOTAL | <u>4035</u> | <u>3134</u> | <u>7169</u> |

Coal Ownership (acres):

| | | | |
|---------|-------------|-------------|---------------|
| Federal | <u>0</u> | <u>2416</u> | <u>2416</u> |
| State | <u>3225</u> | <u>0</u> | <u>3225</u> |
| Private | <u>800</u> | <u>0</u> | <u>800</u> |
| Other | | | |
| TOTAL | <u>4025</u> | <u>2416</u> | <u>6441 *</u> |

*The difference between surface and coal ownership acreage results from additional surface area being permitted to provide a surface subsidence buffer zone area. (Approximately 728 acres)

| | | | |
|------------------------|-------------|----------|-------------|
| <u>Disturbed Acres</u> | <u>20.1</u> | <u>0</u> | <u>20.1</u> |
|------------------------|-------------|----------|-------------|

Minable Coal (tons)

| | | | |
|--------------|-------------------|-------------------|-------------------|
| Federal | <u>0</u> | <u>29 million</u> | <u>29 million</u> |
| Non- Federal | <u>16 million</u> | <u>0</u> | <u>16 million</u> |
| TOTAL | <u>16 million</u> | <u>29 million</u> | <u>45million</u> |

Recoverable Reserve Data

| | <u>Name</u> | <u>Thickness</u> | <u>Depth</u> |
|------|--------------------|------------------|---------------------|
| Seam | <u>Rock Canyon</u> | <u>6' - 10'</u> | <u>600' - 2400'</u> |

Mine Life: 1998-2018 *

Average Annual Production: 2 Million Tons

Date Projected Annual Rate Reached: 2000

*Canyon Fuel Company, LLC has expressed interest in converting to a longwall mining operation in the future and this could significantly alter the annual production and life of mine.

FINDINGS

Canyon Fuel Company, LLC
Dugout Canyon Mine Federal Lease Addition
ACT/007/039
Carbon County, Utah

March 30, 2000

1. The permit application for adding an additional 3134 acres to the permit area and for allowing mining in Federal Lease U-07064-027821 at the Dugout Canyon Mine is accurate and complete and all requirements of the Surface Mining Control and Reclamation Act, and the approved Utah State Program (the "Act") are in compliance. See Technical Analysis dated March 30, 2000 (R645-300-133.100)
2. The applicant proposes acceptable practices for the reclamation of disturbed lands. The Division has determined that reclamation, as required by the Act can be feasibly accomplished following the approved plan. No new surface disturbance is proposed with this application. (R645-300-133.710)
3. An assessment of the probable cumulative impacts of all anticipated coal mining and reclamation activities in the general area on the hydrologic balance has been conducted by the Division and no significant impacts were identified. See CHIA dated March 30, 2000 and March 30, 2000 Technical Analysis. The Mining and Reclamation Plan (MRP) proposed under the revised application has been designed to prevent damage to the hydrologic balance in the permit area and in associated off-site area (R645-300-133.400 and UCA 40-10-11 (2)(c)).
4. The proposed lands to be included within the permit area are:
 - a. Not included within an area designated unsuitable for underground coal mining operation (R645-300-133.220);
 - b. not within an area under study for designated land unsuitable for underground coal mining operations (R645-300-133.210);
 - c. not on any lands subject to the prohibitions or limitation of 30 CFR 761.11 {a} (national parks, etc), 761.11 {f} (public buildings, etc.) and 761.11 {g} (cemeteries);
 - d. not within 100 feet of a public road except at the location where the public road accesses the property(R645-300-133.220); and
 - e. not within 300 feet of any occupied dwelling (R645-300-133.220).
5. The operation would not affect the continued existence of any threatened or

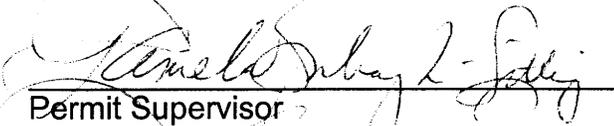
endangered species or result in the destruction or adverse modification of their critical habitats as determined under the Endangered Species Act of 1973. (16 USC 1531 et seq.) (R645-300-133.500) (See letter from U. S. Fish and Wildlife Service dated March 28, 2000)

6. The Division's issuance of a permit is in compliance with the National Historic Preservation Act and implementing regulations (36 CFR 800). (R645-300-133.600) (See letter from Utah State Division of State History dated November 17, 1999)
7. The applicant has the legal right to enter and conduct mining activities in the permit area through State coal leases issued by the State of Utah and a surface Right-of-Way and federal lease issued by the BLM (See Leases in Appendix A -1 of PAP. (R645-300-133.300)
8. A 510 (c) report has been run on the Applicant Violator System (AVS), which shows that: prior violations of applicable laws and regulations have been corrected; neither Canyon Fuel Company, LLC or any affiliated company, are delinquent in payment of fees for the Abandoned Mine Reclamation Fund; and the applicant does not control and has not controlled mining operations with demonstrated pattern of willful violations of the Act of such nature, duration, and with such resulting irreparable damage to the environment as to indicate an intent not to comply with the provisions of the Act (A 510 (c) report was run on March 30, 2000, see memo to file dated March 30, 2000). (R645-300-133.730)
9. Underground mining operations to be performed under the permit will not be inconsistent with other operations anticipated to be performed in areas adjacent to the proposed permit area.
10. The applicant has posted a surety bond for the Dugout Canyon Mine in the amount of \$3,682,000. (R645-300-134)
11. No lands designated as prime farmlands or alluvial valley floors occur on the permit area. (R645-302-313.100 and R645-302-321.100)
12. The proposed postmining land-use of the permit area is the same as the pre-mining land use and has been approved by the Division and the surface land management agency.
13. The Division has made all specific approvals required by the Act, the Cooperative Agreement, and the Federal Lands Program.

14. All procedures for public participation required by the Act, and the approved Utah State Program are in compliance. The public advertisement was noticed on October 7, 14, 21 and 28, 1999. No comments were received. (R645-300-120)
15. No "existing structures" will be used in conjunction with this mine. (R645-300-133.720)



Permit Supervisor



Permit Supervisor



Associate Director of Mining



Director

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
1594 West North Temple
Box 145801
Salt Lake City, Utah 84114-5801
(801) 538-5289

This permit, ACT/007/039, is issued for the state of Utah by the Utah Division of Oil, Gas and Mining (DOGM) to:

Canyon Fuel Company, LLC
6955 South Union Park Center, Suite 540
Midvale, Utah 84047
(801) 596-7111

for the Dugout Canyon Mine. Canyon Fuel Company, LLC is the lessee of federal coal lease U-07064-027821 of state coal leases ML-42648, ML-42649 and fee-owned property. A performance bond is filed with the DOGM in the amount of \$ 3,682,000, payable to the state of Utah, Division of Oil, Gas and Mining. DOGM must receive a copy of this permit signed and dated by the permittee.

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

Sec. 2 PERMIT AREA - The permittee is authorized to conduct underground coal mining activities on the following described lands within the permit area at the Dugout Canyon Mine situated in the state of Utah, Carbon County, and located:

T. 13 S., R. 12 E., SLBM, Utah

Section 9: S1/2SE1/4
Section 10: S1/2
Section 11: S1/2
Section 13: All except N1/2N1/2
Section 14: All
Section 15: All
Section 16: All
Section 17: E1/2SW1/4; SE1/4
Section 20: E1/2NW1/4; SW1/4NW1/4; N1/2NE1/4
Section 21: N1/2NW1/4; NE1/4
Section 22: N1/2; N1/2S1/2

Section 23: NW1/4; NE1/4; SE1/4; NE1/4NW1/4NW1/4SW1/4;
N1/2NE1/4NW1/4SW1/4; SE1/4NW1/4NW1/4SW1/4
NE1/4SW1/4

Section 24: All

Section 25: N1/2N1/2

Section 26: N1/2NE1/4

T. 13 S., R. 13 E., SLBM, Utah

Section 17: SW1/4NW1/4; W1/2SW1/4

Section 18: All except N1/2N1/2

Section 19: All

Section 20: W1/2W1/2

Section 30: NW1/4NW1/4

This legal description is for the permit area of the Dugout Canyon Mine included in the mining and reclamation plan. The permittee is authorized to conduct underground coal mining and reclamation activities on the foregoing described property subject to the conditions of the leases, including all conditions and all other applicable conditions, laws and regulations.

- Sec. 3 COMPLIANCE - The permittee will comply with the terms and conditions of the permit, all applicable performance standards and requirements of the State Program.
- Sec. 4 PERMIT TERM - This permit becomes effective on March 29, 2000 and expires on March 16, 2003.
- Sec. 5 ASSIGNMENT OF PERMIT RIGHTS - The permit rights may not be transferred, assigned or sold without the approval of the Director, DOGM. Transfer, assignment or sale of permit rights must be done in accordance with applicable regulations, including but not limited to 30 CFR 740.13(e) and R645-303.
- Sec. 6 RIGHT OF ENTRY - The permittee shall allow the authorized representative of the DOGM, including but not limited to inspectors, and representatives of OSMRE, without advance notice or a search warrant, upon presentation of appropriate credentials, and without delay to:
- A. have the rights of entry provided for in 30 CFR 840.12, R645-400-110, 30 CFR 842.13 and R645-400-220; and,
 - B. be accompanied by private persons for the purpose of conducting an inspection in accordance with R645-400-100 and 30 CFR 842, when the inspection is in response to an alleged violation reported by the private person.

- Sec. 7 SCOPE OF OPERATIONS - The permittee shall conduct underground coal mining activities only on those lands specifically designated as within the permit area on the maps submitted in the mining and reclamation plan and permit application and approved for the term of the permit and which are subject to the performance bond.
- Sec. 8 ENVIRONMENTAL IMPACTS - The permittee shall minimize any adverse impact to the environment or public health and safety through but not limited to:
- A. accelerated monitoring to determine the nature and extent of noncompliance and the results of the noncompliance;
 - B. immediate implementation of measures necessary to comply; and
 - C. warning, as soon as possible after learning of such noncompliance, any person whose health and safety is in imminent danger due to the noncompliance.
- Sec. 9 DISPOSAL OF POLLUTANTS - The permittee shall dispose of solids, sludge, filter backwash or pollutants in the course of treatment or control of waters or emissions to the air in the manner required by the approved Utah State Program and the Federal Lands Program which prevents violation of any applicable state or federal law.
- Sec. 10 CONDUCT OF OPERATIONS - The permittee shall conduct its operations:
- A. in accordance with the terms of the permit to prevent significant, imminent environmental harm to the health and safety of the public; and
 - B. utilizing methods specified as conditions of the permit by DOGM in approving alternative methods of compliance with the performance standards of the Act, the approved Utah State Program and the Federal Lands Program.
- Sec. 11 EXISTING STRUCTURES - As applicable, the permittee will comply with R645-301 and R645-302 for compliance, modification, or abandonment of existing structures.
- Sec. 12 RECLAMATION FEE PAYMENT - The permittee shall pay all reclamation fees required by 30 CFR part 870 for coal produced under the permit, for sale, transfer or use.
- Sec. 13 AUTHORIZED AGENT - The permittee shall provide the names, addresses and telephone numbers of persons responsible for operations under the permit to whom notices and orders are to be delivered.

- Sec. 14 COMPLIANCE WITH OTHER LAWS - The permittee shall comply with the provisions of the Water Pollution Control Act (33 USC 1151 et seq,) and the Clean Air Act (42 USC 7401 et seq), UCA 26-11-1 et seq, and UCA 26-13-1 et seq.
- Sec. 15 PERMIT RENEWAL - Upon expiration, this permit may be renewed for areas within the boundaries of the existing permit in accordance with the Act, the approved Utah State Program and the Federal Lands Program.
- Sec. 16 CULTURAL RESOURCES - If during the course of mining operations, previously unidentified cultural resources are discovered, the permittee shall ensure that the site(s) is not disturbed and shall notify DOGM. DOGM, after coordination with OSMRE, shall inform the permittee of necessary actions required. The permittee shall implement the mitigation measures required by DOGM within the time frame specified by DOGM.
- Sec. 17 APPEALS - The permittee shall have the right to appeal as provided for under R645-300.
- Sec. 18 SPECIAL CONDITIONS - There are special conditions associated with this permit, as described in Attachment A.

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

THE STATE OF UTAH

By: Lowell P. Braxton
Lowell P. Braxton, Director

Date: 3/31/00

FEDERAL PERMIT
ACT/007/039
March 30, 2000
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I certify that I have read, understand and accept the requirements of this permit and any special conditions attached.

Authorized Representative of the Permittee/ Title

Date: _____

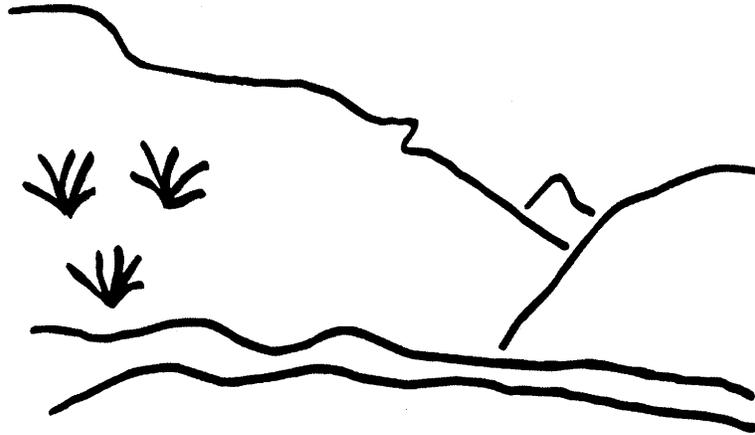
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ATTACHMENT A

Special Conditions

- 1) Canyon Fuel Company, LLC must submit water quality data electronically to the Division's water quality database by the second quarter of 2000 (June 30, 2000).
- 2) Underground coal mining and reclamation activities in federal coal lease U-07064-027821 may not commence until a mining plan approval is authorized by the Secretary of the Interior.

State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

Dugout Canyon Mine
Significant Revision 99D
ACT/007/039 - SR99D
Technical Analysis
March 30, 2000

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INTRODUCTION

INTRODUCTION

The last permit change for this mine was in October 1998: a parcel of BLM land located at the downstream end of the disturbed area was incorporated into the permit to better accommodate a sedimentation pond for the mine pad; water storage tanks were added up the canyon from the main pad area; and coal storage and the electric-power sub-station were expanded.

Proposed significant revision SR99D to the Dugout Canyon Mine MRP was received by the Division on May 21, 1999. The significant revision is for addition of federal lease U07064-027821 to the permit area. Maps also outline an adjacent Utah State Institutional Trust Lands (SITLA) coal tract that is not part of the current significant revision application but that is an area of possible future expansion east of the federal lease: data for this SITLA tract are in the significant revision submittal also, but the Technical Analysis (TA) does not specifically address this SITLA tract.

The Division sent a comprehensive TA to the permittee on November 8, 1999. The permittee's response was received at the Division on January 12, 2000. All deficiencies have been addressed to the satisfaction of the UDOGM reclamation specialists and inspectors.

The Division received a letter from the Fish and Wildlife Service dated March 28, 2000, concurring with the Division's findings on threatened and endangered species. Although water depletions are considered to jeopardize the continued existence of the threatened and endangered fish of the upper Colorado River basin, depletions are addressed by existing inter-agency Section 7 agreements.

Rules or TA Sections not addressed in this TA have been covered in previous TAs, and it has been determined that nothing in significant revision SR99D has affected or changed the analyses and findings pertaining to those Rules or TA Sections.

ADMINISTRATIVE INFORMATION

OWNERSHIP AND CONTROL INFORMATION

Regulatory Reference: R645-301-112

Analysis:

The permittee has proposed changes to the land ownership information to make the text consistent with the maps and to add the owners of land in the areas that would be added to the permit area.

The significant revision would revise the section of the plan discussing interests in contiguous lands. The current plan discusses possible future permitting of the federal coal lease, but this would be eliminated. The significant revision says the permittee does not intend to mine the state coal to the east of the permit boundary (revised boundary) during the current permit term.

Findings:

Information provided in the significant revision is adequate to meet the requirements of this section of the regulations.

VIOLATION INFORMATION

Regulatory Reference: R645-301-113

Analysis:

The lists of violations received by Canyon Fuel Company's operations has been updated. This information needs to be checked with the applicant violator system.

Findings:

Information provided in the significant revision is adequate to satisfy the requirements of this section of the regulations.

RIGHT OF ENTRY

Regulatory Reference: R645-301-114

ADMINISTRATIVE INFORMATION

Analysis:

The right of entry section includes information about the federal coal lease that is being added to the permit area. This lease was approved in 1957 and readjusted effective January 1, 1997. On July 15, 1997, effective March 1, 1996, this lease was approved as part of the Soldier Creek Logical Mining Unit with Canyon Fuel Company as the unit operator. Most of the surface of the federal coal lease is privately owned.

Part of the proposed addition to the permit area is federal, state, and private land, both surface and mineral, for which the permittee does not have right of entry; however, no coal mining is proposed for these areas. These areas are to be used as subsidence buffer zones.

Findings:

Information provided in the proposal is adequate to satisfy the requirements of this section of the regulations.

UNSUITABILITY CLAIMS

Regulatory Reference: R645-301-115

Analysis:

The permittee is not aware of any unsuitability designation or proposal to designate the area unsuitable for mining. No operations would be conducted within 300 feet of an occupied dwelling, and the current mining and reclamation plan contains approval for mining within 100 feet of a public road.

The proposed addition to the permit area contains a few unimproved roads, mostly on private land. The current mining and reclamation plan contains commitments to repair material damage to these roads to a condition acceptable to both the private land owner and the permittee.

Findings:

Information provided in the proposal is adequate to meet the requirements of this section of the regulations.

PERMIT TERM, INSURANCE, PROOF OF PUBLICATION, AND FACILITIES USED IN COMMON

Regulatory Reference: R645-301-116 and -117

Analysis:

The permittee has submitted a copy of the proof of publication for insertion into Appendix 1-2. This is the only change proposed for this section of the plan.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

ENVIRONMENTAL RESOURCE INFORMATION

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ENVIRONMENTAL RESOURCE INFORMATION

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

GENERAL

Regulatory Reference: 30 CFR Sec. 783.12; R645-301-411, -301-521, -301-721.

Analysis:

A description of the pre-mining environmental resources within the proposed permit area and adjacent areas that may be affected or impacted by the proposed underground mining activities is included in Sections 411, 521, and 720 of the current MRP; Section 411 has been modified to include information on surface ownership and land use in federal lease U07064-027821.

Findings:

General resource information is adequate to meet the requirements of this section of the regulations. No additional information is needed for approval of the significant revision.

PERMIT AREA

Regulatory Requirements: 30 CFR Sec. 783.12; R645-301-521.

Analysis:

Addition of federal lease U07064-027821 to the Dugout Canyon Mine will not require additional surface disturbance. Lands subject to disturbance from surface coal mining operations over the estimated life of the Dugout Canyon Mine are described and identified in the current MRP. Federal lease U07064-027821 and the SITLA tract, which is an area of possible future permit expansion, are described and shown on maps in the significant revision.

Findings:

Permit area resource information is adequate to meet the requirements of this section of the regulations. No additional information is needed for approval of the significant revision.

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.12; R645-301-411.

ENVIRONMENTAL RESOURCE INFORMATION

Analysis:

The significant revision includes no new cultural resources information. The current mining and reclamation plan for the Soldier Canyon Mine contains a 1980 cultural resources inventory that included the proposed addition to the permit area. Not all of the area was examined for cultural resources. Instead, the survey concentrated on those areas where prehistoric or historic activities were most probably concentrated, particularly in the canyons.

The cultural resource survey located one isolated artifact and one historical site. The historical site is the Pace Canyon Mine, and it was determined to not be eligible for listing in the National Register of Historic Places.

The information in the Soldier Canyon plan is adequate and is available to the Division, and the significant revision references the Soldier Canyon plan.

Findings:

Information provided in the proposal is adequate to meet the requirements of this section of the regulations.

CLIMATOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.18; R645-301-724.

Analysis:

Climatological resource information is covered in the current MRP. No additional information is needed for approval of the significant revision.

Findings:

No additional climatological resource information is needed for approval of the significant revision.

VEGETATION RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.19; R645-301-320.

Analysis:

Vegetation in the proposed addition to the permit area is very similar to that in the current permit area. The permittee has added one new vegetation community designation to Plate 3-1. This community

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is called deciduous streambank vegetation and limited riparian vegetation. According to the text, heavy grazing and erosion in Pace Creek and Rock Creek Canyons have resulted in sections of the stream banks having little or no deciduous and/or riparian vegetation.

Because the permittee is not proposing additional disturbance, the information in the significant revision and the current plan is acceptable.

Findings:

Information provided in the significant revision is adequate to meet the requirements of this section of the regulations.

FISH AND WILDLIFE RESOURCE INFORMATION

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

Analysis:

Wildlife Information

The permittee has revised Plate 3-2 to include the proposed addition to the permit area. This plate shows one eagle nest in the proposed addition, and the plate has been updated to include results from the 1998 raptor survey. Plate 3-2 also shows high priority yearlong elk habitat and critical deer summer range in the new area. High priority winter ranges are to the south of the proposed addition. According to the text, the access roads in Pace Creek and Rock Creek Canyons cross areas used by deer as winter range, but traffic is sporadic during the winter and heavier in the summer and fall.

This section includes updated information about the wildlife habitat mitigation project undertaken near Dugout Creek above the mine. The number of willows planted and to be planted along the creek may be less than the 4000 originally planned because there is a limited amount of appropriate habitat in which to plant the willows.

Threatened and Endangered Species

The existing mining and reclamation plan contains information about threatened, endangered, and sensitive species. According to Section 322.200, no threatened or endangered plant or wildlife species were discovered in recent inventories by Wildlife Resources, the Forest Service, and other qualified personnel. Appendix 3-1 contains a letter from Robert Thompson, Forest Service botanist, indicating the area contains no threatened or endangered plant species.

A June 24, 1995, survey for canyon sweetvetch found this sensitive species along Dugout Creek approximately one-half mile below the gate. The Division is aware of a fairly extensive population in the permit area in Fish Creek Canyon, and it could occur in other parts of the permit area and proposed addition.

Section 322.200 says two listed species, the bald eagle and black-footed ferret, could potentially inhabit the area. There have been no confirmed sightings of black-footed ferrets in Carbon County in several years, but bald eagles probably occur within the permit area during the winter.

Dugout Creek is within the drainage of the Green River, which is habitat for certain threatened and endangered fish of the upper Colorado River basin. Through effects on water quantity and quality, the mine could potentially adversely affect these species.

As required by R645-301-358.100, the permittee must promptly report to the Division any state or federally listed endangered or threatened species within the permit area of which it becomes aware. Seasonal or migrating bald eagles are expected and would not need to be reported.

Findings:

Information provided in the proposal is adequate to meet the requirements of this section of the regulations.

SOILS RESOURCE INFORMATION

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

Analysis:

Soils resource information is covered in the current MRP. There is to be no additional surface disturbance and no additional soils resource information is needed for approval of the significant revision.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

LAND-USE RESOURCE INFORMATION

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

Analysis:

Plate 4-1 and Exhibit 8 of Appendix 4-2 have been updated to show grazing allotments and logging areas in the proposed addition to the permit area. Exhibit 8 shows one area of proposed logging in the Fish Creek area, but it shows no additional timbering in the proposed addition to the permit area.

ENVIRONMENTAL RESOURCE INFORMATION

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The significant revision shows the number of livestock allowed in the various federal allotments, but the number varies in some non-federal areas because it is private land.

The permittee proposes no other changes to this section of the mining and reclamation plan. The current plan says there are no cemeteries, public parks, or units of the National System of Trails or the Wild and Scenic Rivers System located within the permit boundary, and it is assumed this statement is still valid for the proposed addition.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

ALLUVIAL VALLEY FLOORS

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

Analysis:

Alluvial valley floor information is covered in Chapter 9 the current MRP. No additional information is needed for approval of the significant revision.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

PRIME FARMLAND

Regulatory Reference: 30 CFR Sec. 785.16, 823; R645-301-221, -302-270.

Analysis:

Prime farmland information is covered in the current MRP. No additional information is needed for approval of the significant revision.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

GEOLOGIC RESOURCE INFORMATION

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

Analysis:

Changes, mostly minor, have been made to the text on pages 6-2, 6-4, 6-15 through 6-19, and 6-21 of Chapter 6. Plates 6-1, 6-4, 6-5, 6-6 (Confidential Folder), and 6-7 (Confidential Folder) include federal lease U07064-027821 within the proposed permit boundary; they also include the adjacent SITLA coal tract that is not part of the current significant revision application but which is an area of possible future expansion east of the federal lease. Plate 6-4 is an isopach map of the Rock Canyon seam overburden thickness and Plate 6-5 is an isopach map of the Rock Canyon to Gilson seam interburden thickness. Plates 6-6 and 6-7 in the Confidential binder are isopach thickness maps of, respectively, the Rock Canyon and Gilson seams. Plates 6-3A and 6-3B, also submitted with the significant revision, are geologic cross sections of the federal lease and SITLA tract.

The geologic map and 6 cross sections in the permit significant revision are based on drill hole data and mapping of surface geology. Fourteen additional drill-hole logs have been submitted with the significant revision, so Appendix 6-1 now contains drill-hole logs for twenty-nine of the holes that have been bored in and adjacent to the permit area: the bore holes are listed on in Section 622. Collar or ground elevations are included in Appendix 6-1. Drill hole locations and elevations are shown on Plate 6-1.

Some bore holes have been logged from the surface to total depth, for others only the coal seams and adjacent strata have been logged. Together, the logs describe lithologic characteristics and thickness of each stratum from the surface to below the coal seams. Ground water occurrence was not marked on these logs at the time the holes were bored (Section 624.300).

The five coal seams identified in the Dugout Mine area are, from top to bottom:

- Sunnyside
- Rock Canyon
- Fish Creek
- Gilson
- Kenilworth.

Only the Rock Canyon and Gilson seams are to be mined under the Dugout Canyon Mine permit (Section 623).

Geologic cross sections D - D', E - E', and F - F' (Plates 6-3A and 6-3B) have been submitted with the significant revision. They show the interval from the Sunnyside coal zone to below the Gilson coal zone in federal lease U07064-027821 and the SITLA coal tract. Together, cross sections A - A' through F - F' show relative positions and thickness of the Sunnyside, Rock Canyon, and Gilson coal seams (and of rider seams associated with the Rock Canyon and Gilson seams) in the proposed permit and adjacent areas.

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The Gilson and Rock Canyon seams are sufficiently developed to allow for economic mining of one or the other in much of the proposed permit area; however, multiple seam mining will be limited to the vicinity of Dugout Canyon. The Gilson seam is generally not of mineable thickness west of Dugout Canyon. East of Dugout Canyon the sulfur content of the Rock Canyon coal increases and renders it unmarketable. In addition, interburden between the two seams thins east of the canyon, making multiple seam mining difficult, dangerous, and uneconomical. The mine entry is in the Rock Canyon Seam, and a rock-slope is planned for access down to the Gilson Seam (Plate 5-7).

Coal in the Rock Canyon seam ranges from 5 to 8 feet in thickness, except for a want in the north-central part, where coal thins to under 3 feet. Plate 6-7 indicates the Gilson seam is up to sixteen feet thick in federal lease U07064-027821; however, this is near the outcrop and recovery of this thickest coal may not be practical. Most Gilson coal in the federal lease is between 6 to 10 feet thick. The R2P2 for the logical mining unit that includes Soldier Canyon and Dugout Canyon Mines and federal lease U-07064-027821 is in the Confidential binder.

Maximum subsidence can be projected as 4.2 to 7.0 feet, based on 6 feet being the minimum and 10 feet being the maximum thicknesses to be mined (R2P2) and on the assumption that the surface will subside up to 70% of the thickness of the extracted coal. Where the Rock Canyon coal seam is mineable, overburden thickness ranges from 500 feet in the south to over 2,400 feet in the north, and subsidence is not expected where overburden is more than 1,200 feet thick (Sections 627 and 728.300). Overburden consists of the upper Blackhawk Formation, the Castlegate Sandstone, and the Price River, North Horn, and Flagstaff Formations, which are described in Section 624.100. Gilson to Rock Canyon interburden thickness is 30 to 80 feet over the proposed permit area (Plate 6-5).

Analysis reports on coal, floor, and roof samples from the Rock Canyon and Gilson seams are in Appendix 6-2 (Confidential binder). No new data have been submitted with the significant revision submittal, just a new title page for Appendix 6-2.

The current MRP includes a description of the areal and structural geology of the proposed permit and adjacent areas, including federal lease U07064-027821 and the SITLA tract. The description is based on maps and plans required as resource information for the plan, detailed site specific information, and geologic literature and practices. It shows how areal and structural geology may affect the occurrence, availability, movement, quantity, and quality of potentially impacted surface and ground water. Section 624.100 contains descriptions of the stratigraphy and lithology, a discussion of geologic structure, and a very brief but adequate description of the nature, depth, and thickness of the coal seams and the interburden between the Sunnyside, Rock Canyon, and Gilson seams.

The significant revision includes geologic information in sufficient detail to assist in determining the probable hydrologic consequences of the operation upon the quality and quantity of surface and ground water in the permit and adjacent areas, including the extent to which surface and ground water monitoring is necessary, and determining whether reclamation as required by the Utah Coal Mining Rules can be accomplished and whether the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

At this time the Division does not require the collection, analysis, and description of additional geologic information to protect the hydrologic balance, to minimize or prevent subsidence, or to meet the performance standards. The permittee has made no request the Division to waive in whole or in part the requirements of the bore hole information or analysis required of this section. The permittee has requested that the information in Appendices 6-1 and 6-2 be kept confidential.

Findings:

Information on geologic resources is considered adequate to meet the requirements of this section.

HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

Analysis:

Sampling and Analysis

Information on sampling and analysis is covered in the current MRP. No additional hydrologic resource information is needed for approval of the significant revision.

Ground-water Information

Locations of monitoring points are shown on Plate 7-1. Ground-water monitoring protocols are given in Table 7-4 and in Section 731.200 of the significant revision. For baseline parameters, reference is made to UDOGM technical directive Tech 004 (Tech 004).

Water-monitoring data, some going back as far as 1976, that potentially met the minimum requirements of SMCRA and the Utah Coal Mining Rules was done at only 13 (6 springs and 7 in-mine locations) of the 97 sites listed in the initial PAP. On average only 3 samples were analyzed for those 13 sites, so determination of baseline seasonal quality was minimal for specific sites; however, overall baseline ground-water quality and quantity information was considered sufficient to characterize baseline ground-water conditions for the permit area.

Water-quality samples were to have been collected during 1997. October 1997 data at SC-65, SC-100, and SP-20 were mistakenly collected as field parameters only rather than water-quality parameters, and no data at all were collected at SC-14 that month. The permittee collected no water samples nor made any determinations of field parameters during the first quarter of 1998, but by agreement with UDOGM monitoring was done early in the third quarter as representative of the second quarter. Unfortunately field parameters only, rather than water-quality parameters, were determined for these samples.

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Springs SC-65, SP-20 (same as S-30), SC-14, and SC-100 were to have been monitored for operational water quality and quantity beginning the third-quarter of 1998. The permittee selected these springs because they were considered reasonably accessible and representative of conditions within their respective formations (Section 731.200); however, there is actually little historic data for these springs and it is necessary to rely on data from the Soldier Canyon Mine and surrounding springs to extrapolate baseline information. Because of the dearth of baseline water-quality and -quantity data, the operator was asked to commit to 2 years of quarterly water-quality and -quantity monitoring, at a minimum the operational parameters listed in Table 7-4 of the MRP, at these four springs rather than measuring field parameters only (UDOGM TA dated October 16, 1998).

Table 7-4 of the significant revision clarifies that monitoring for operational water-quality parameters was begun in the 3rd quarter of 1999 and will continue for 2 years, after which monitoring will be for the field measurements (flow, pH, specific conductance, and temperature) listed in Table 7-4. This varies from the recommended schedule in Tech-004 but conforms with the amended (amended following the procedure of Tech-004) monitoring plan that was approved for the adjacent Soldier Canyon Mine. Third quarter 1999 data have been received by DOGM.

The significant revision adds springs SC-116, 200, 203, 227, 259, and 260 to the operational monitoring list: 200, 203, 259, and 260 are in the SITLA tract. Baseline data are scarce in the vicinity of the Dugout Canyon Mine, so quarterly water samples from these six springs are to be analyzed for the baseline parameters specified in Tech 004 for 3 years: this 3-year monitoring period began with the 1st quarter 1999. After the initial 3-year period, these springs will be monitored quarterly for field parameters only. Data for March and June 1999 are tabulated with the ground-water information in Appendix 7-2 (the table does not include spaces for Cu, NH₃, and cations and anions, and it is not clear whether Mn is total or dissolved), and data for the 3rd quarter 1999 have been received by DOGM (all baseline parameters).

Surface-water Information

Locations of monitoring points are shown on Plate 7-1. Surface-water monitoring protocols are given in Table 7-5 and in Section 731.200 of the significant revision, and the operational surface water quality parameters to be monitored at the Dugout Canyon Mine are also listed in Table 7-5. The parameters correspond with the operational parameters in Table 5 of Tech-004 except that total alkalinity and hardness are not included.

Monitoring is currently done at DC-1, DC-2, and DC-3. Under the proposed significant revision, monitoring will be done at PC-1a and PC-2 on Pace Creek to evaluate surface-water conditions upgradient and downgradient of the significant revision area and the SITLA tract, and at RC-1 in Rock Canyon to obtain baseline data for future mine expansion into the SITLA tract.

Data from 1978 and 1979 for PC-1 and 1978 to 1980 for PC-1a are in the revised Appendix 7-7: some of these samples were adequately analyzed for baseline parameters. Baseline data will be obtained at PC-1a, PC-2, and RC-1 for 3 years prior to initiating operational monitoring (page 7-58). Baseline

data for March and June 1999 are tabulated with the surface-water information in Appendix 7-7 of the significant revision (the table does not include spaces for Cu, NH₃, and cations and anions, and it is not clear whether Mn is total or dissolved). Baseline data for the 3rd quarter 1999 have been received by DOGM. Rock Canyon was dry both quarters while flow in Pace Canyon appears to be seasonal and to originate from springs in the Flagstaff and North Horn Formations.

Baseline Cumulative Impact Area Information

A Cumulative Hydrologic Impact Assessment (CHIA) has previously been prepared for the Soldier Canyon and Dugout Canyon Mines. The Cumulative Impact Area (CIA) for that CHIA included federal lease U07064-027821 and the surrounding area. Two small corners of the subsidence buffer zone around the federal lease are outside that of the CIA; however, those two remote areas will not be impacted by mining nor contribute to cumulative impacts outside the proposed Dugout Canyon Mine permit area. No additional hydrologic and geologic information is needed from the permittee for a CHIA.

Modeling

No modeling techniques, interpolations, or statistical techniques have been used in preparation of the current MRP or the significant revision.

Alternative Water Source Information

The significant revision contains no alternative water source information.

Probable Hydrologic Consequences Determination

A PHC determination prepared by Mayo and Associates in 1996 is in Appendix 7-3. Information on geology, hydrology, and hydrogeology and data on discharge, sediment, and other surface and ground water parameters were compiled from previous studies, and seventeen ground- and surface-water samples were collected in 1995 for chemical and isotopic analyses. In spite of the seemingly large data base, most analyses lacked information on seasonal variation and on the basic parameters required by the Coal Mining Rules and SMCRA. The PHC determination in Section 728 of the MRP is based on the Mayo and Associates PHC and additional data collected in 1996 and 1997. Potential impacts covered in the PHC in Section 728 are:

- Ground water and surface-water availability;
- Contamination from acid- and toxic-forming materials;
- Sediment yield;
- Acidity, total suspended solids, and total dissolved solids;
- Flooding or streamflow alteration;
- Ground-water and surface-water availability;
- Potential hydrocarbon contamination;
- Road salting; and
- Coal haulage.

ENVIRONMENTAL RESOURCE INFORMATION

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The area covered by Mayo's PHC (Appendix 7-3) included Pace Creek. The PHC in Section 728 has been revised to include Pace Creek. (The SITLA lease was not included in either PHC, so future expansion into Rock Canyon may require a revised PHC.)

Potential adverse effects to the hydrologic balance from the proposed mining operations are: both decreased and increased stream flows and spring discharges due to capture of surface or ground water by mine-related subsidence, bedrock fracturing, and aquifer dewatering (p. 7-46); increased stream flows due to increased discharge of ground water from the Blackhawk Formation through the mine workings; and increased ground-water recharge from overlying ground water systems. It appears that the Soldier Canyon Mine has not decreased groundwater discharge in overlying or underlying groundwater systems. It is unlikely that coal mining will effect the discharges of any spring as a result of mining in the Dugout Canyon permit and adjacent areas (p. 7-47 and Appendix 7-3).

Considerable seasonal and climatic variability are noted in the hydrographs of springs in the permit and adjacent areas, but data for both Soldier Creek and springs that overly the Soldier Canyon Mine workings do not show discharge declines that may be attributed to either subsidence or bedrock fracturing (p. 7-46). The Blackhawk groundwater system in the vicinity of mined coal seams is compartmentalized both vertically and horizontally. Coal mining locally dewateres overlying rock layers in the Blackhawk Formation but does not appear to draw additional recharge from overlying or underlying groundwater systems (p. 7-47).

Subsidence is anticipated where overburden is between 600 and 1,200 feet in the main fork of Dugout Creek and 500 to 2,000 feet in the right fork of Dugout Creek. Subsidence is also anticipated in a small area along the bottom of the Pace Creek drainage. The loss of stream-flow to the mine because of subsidence is highly unlikely and losses to bedrock exposed in or beneath soil in the channel would be short lived because of thick mantles of fine-grained soils, the tendency of fractures in fine-grained rocks of the Blackhawk Formation to close relatively rapidly, and the expected rapid filling of fractures that may occur in channel floors (pages 7-45 and 7-46).

Steady-state inflow to the Dugout Canyon mine is expected to be approximately 210 gpm, which is considered by the permittee to be a conservatively high estimate (p. 7-49). After accounting for in-mine consumption, up to 190 gpm (306 acre-feet/yr) could be discharged to Dugout Creek, which would represent an increase of approximately 6% over the average annual flow of 5,100 acre-feet/yr. Estimated maximum discharge from the Dugout Canyon Mine is approximately 400 gpm. If this maximum rate were sustained for a full year there would be a 13% increase in the estimated average annual flow of Dugout Creek (p. 7-50).

Ground-water monitoring is discussed in the Operation Plan section of this TA. The significant revision adds 6 springs to the operational monitoring list, 4 of which (200, 203, 259, and 260) are in the SITLA tract. Baseline data are scarce in the vicinity of the Dugout Canyon Mine, so these springs are to be monitored quarterly for 3 years and water samples analyzed for baseline parameters as specified in UDOGM directive Tech 004. After completion of baseline monitoring, these springs will be monitored quarterly for field parameters.

Surface-water monitoring is discussed in the Operation Plan section of this TA. PC-1a, PC-2, and RC-1 will be monitored for baseline parameters for 3 years prior to switching to operational parameters.

Findings:

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

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

Affected Area Boundary Maps

Plate 5-7 shows the boundaries of all areas proposed to be affected over the estimated total life of the coal mining and reclamation operations. The dates on Plate 5-7 indicate that the permittee hopes to operate the Dugout Canyon Mine until 2009. Plate 5-7 has been revised to include federal lease U07064-027821 and the SITLA tract and adjacent areas.

Archeological Site Maps

Maps showing cultural resource sites are in the reports discussing these sites. These maps meet regulatory requirements.

Coal Resource and Geologic Information Maps

Coal resource and geologic information maps have been revised to include federal lease U07064-027821 and the SITLA tract and adjacent areas.

Cultural Resource Maps

Maps showing cultural resource sites are in the reports discussing these sites. These maps meet regulatory requirements.

Existing Structures and Facilities Maps

Plate 4-1 has been revised to include federal lease U07064-027821 and the SITLA tract and adjacent areas.. The existing structures include a power line and the new county road to the Dugout Canyon Mine.

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Existing Surface Configuration Maps

Plate 5-4, which has not been revised, shows the topography of the disturbed area prior to the Dugout Canyon Mine permit being issued, and also older, pre-SMCRA disturbance.

Mine Workings Maps

Plate 5-1, which shows the Pre-SMCRA mine workings in the Rock Canyon and Gilson seams and the old mine openings, has not been revised. Plate 5-7, which shows the current and projected Dugout Canyon Mine workings, has been revised to include federal lease U07064-027821 and the SITLA tract and adjacent areas.

Monitoring Sampling Location Maps

Maps showing monitoring locations for vegetation, wildlife, and water and locations of bore holes have been revised to include federal lease U07064-027821 and the SITLA tract and adjacent areas.

Permit Area Boundary Maps

Maps showing boundaries of land upon which the permittee has the legal right to enter and begin underground mining activities have been revised to include federal lease U07064-027821 and the SITLA tract and adjacent areas.

Surface and Subsurface Manmade Features Maps

There are no buildings or other structures within 1,000 feet of the permit area except for roads. Roads are shown on several maps, including Plates 4-1 and 5-7, which have been revised to include federal lease U07064-027821 and the SITLA tract and adjacent areas.

Surface and Subsurface Ownership Maps

Surface and subsurface ownership maps have been revised to include federal lease U07064-027821 and the SITLA tract and adjacent areas.

Subsurface Water Resource Maps

Maps and cross-sections showing location and extent of subsurface water within the proposed permit or adjacent areas have been revised to include federal lease U07064-027821 and the SITLA tract and adjacent areas.

Surface Water Resource Maps

Surface water resource maps maps have been revised to include federal lease U07064-027821 and the SITLA tract and adjacent areas.

Vegetation Reference Area Maps

The reference areas have not been changed, but the map showing the reference areas has been altered to show vegetation communities in the areas proposed to be added to the permit area.

Well Maps

No oil or gas wells are known to exist within the permit area.

Contour Maps

Plate 5-4 shows the existing topography, Plate 5-2 shows the proposed topography during mining and Plate 5-5 shows the topography after reclamation. The Division has reviewed these plates and determined that they adequately showed the surface configurations. These three plates show the topography around the disturbed area and have not been revised because they are not affected by the significant revision.

Findings:

Information provided in the significant revision is adequate to meet the requirements of this section of the regulations.

OPERATION PLAN

OPERATION PLAN

MINING OPERATIONS AND FACILITIES

Regulatory Reference: 30 CFR Sec. 784.2, 784.11; R645-301-231, -301-526, -301-528.

Analysis:

General

The Gilson and Rock Canyon seams are sufficiently developed to allow for economic mining of one or the other in much of the proposed permit area; however, multiple seam mining will be limited to the vicinity of Dugout Canyon. The Gilson seam is generally not of mineable thickness west of Dugout Canyon. East of Dugout Canyon the sulfur content of the Rock Canyon coal increases and renders it unmarketable. In addition, interburden between the two seams thins east of the canyon, making multiple seam mining difficult, dangerous, and uneconomical. The mine entry is in the Rock Canyon Seam, and a rock-slope is planned for access down to the Gilson Seam (Plate 5-7).

Type and Method of Mining Operations

There are no changes in the type or method of mining other than expansion of mining to the east into the Gilson seam.

Facilities and Structures

There are no new facilities or structures associated with this significant revision.

Findings:

The requirements of this section are only marginally applicable to the significant revision. Information provided is adequate to meet the requirements of this section of the regulations.

EXISTING STRUCTURES

Regulatory Reference: 30 CFR Sec. 784.12; R645-301-526.

Analysis:

Plate 4-1 shows the two existing structures in the permit area: the main access road, owned by the county up to the Dugout Canyon Mine property line, and the power lines. Both structures have been modified since the Dugout Canyon Mine permit was issued. There are several dirt roads, trails, and wheel tracks in the area that are on lands owned by the permittee or the Thayn family and to which

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access is limited. The Division has not required the identification the dirt roads, trails, and wheel tracks that will not be used for mining activities except for monitoring and data collection. Plate 4-1 has been revised to include federal lease U07064-027821 and the SITLA tract and adjacent areas.

Findings:

Information provided in the significant revision is adequate to meet the requirements of this section of the regulations.

PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES

Regulatory Reference: 30 CFR Sec. 784.17; R645-301-411.

Analysis:

The proposed addition to the permit area contains no known significant cultural resources, including sites eligible for listing in the National Register of Historic Places, cemeteries, public parks, or units of the National System of Trails and Wild and Scenic Rivers System. Therefore, no protection plan is needed. The Division has received a letter from the State Historic Preservation Office giving clearance based on no surface disturbance and no significant sites being found.

Findings:

Information provided in the significant revision is adequate to meet the requirements of this section of the regulations. The Division has received concurrence from the State Historic Preservation Office..

RELOCATION OR USE OF PUBLIC ROADS

Regulatory Reference: 30 CFR Sec. 784.18; R645-301-521, -301-526.

Analysis:

Information on relocation or use of public roads is in Section 521 of the current MRP. There is to be no additional surface disturbance and no additional information on relocation or use of public roads is needed for approval of the significant revision.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

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AIR POLLUTION CONTROL PLAN

Regulatory Reference: 30 CFR Sec. 784.26, 817.95; R645-301-244.

Analysis:

The significant revision includes a statement that, as of January 1, 1999, the Dugout Canyon mine has a permit to operate at a production rate of five million tons annually. A copy of the revised Air Quality Approval Order is included in the significant revision.

Findings:

Information provided in the significant revision is adequate to meet the requirements of this section of the regulations.

COAL RECOVERY

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

Analysis:

The coal recovery will be in the Resources Recovery and Protection Plan (R2P2) required by the BLM. This plan requires BLM approval.

Findings:

Information provided in the proposed significant revision is considered adequate to meet the requirements of this section. The permittee must follow the R2P2 as approved by the BLM.

SUBSIDENCE CONTROL PLAN

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

Analysis:

Renewable Resources Survey

Renewable resource lands within the permit and adjacent areas are shown on Plate 4-1. This map shows the two existing structures in the permit area: the main access road, owned by the county up to the Dugout Canyon Mine property line, and the power lines. As shown on Plate 4-1, both structures have been modified since the Dugout Canyon Mine permit was issued. Plate 4-1 has also been revised to include federal lease U07064-027821 and the SITLA tract and adjacent areas.

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The area of potential subsidence is currently used for livestock grazing and wildlife habitat, with limited timber production (Section 411.130). Exhibit B in Appendix 4-2 shows areas where timber has been harvested in the past and areas to be potentially logged in the future: none of the areas for future logging are within the significant revision area.

No major transmission lines, pipelines, or agricultural drainage tile fields exist within the area of potential subsidence. Roads within the area of potential subsidence consist of private dirt roads, trails, and wheel tracks that are owned and maintained by the parent company of Soldier Canyon Mine and by private citizens, including the Thayn family. These unimproved roads, which may be used for access to the lease area, may be damaged by subsidence. Damage to roads not owned by the parent company of Soldier Canyon Mine will be repaired to a condition acceptable to both the private land owner and Soldier Canyon Mine. No other structures are known to exist within the area of potential subsidence (Section 525.100).

Hydrologic resources in the area are discussed in Chapter 7 of the MRP. Information regarding baseline groundwater conditions is provided in Section 724.100.

Anticipated Impacts

The current mining and reclamation plan contains a discussion of potential effects of subsidence on wildlife. In Section 332 is a reference to Section 521.100 that appears to be in error. The correct section is 525.100.

The significant revision discusses potential effects on perennial and intermittent streams and says flow interruptions are not anticipated. According to the current plan, it has been demonstrated that topographic lows, such as stream channels, tend to be protected by upwarping of adjacent slopes during subsidence. Therefore, mining-induced surface fracturing should be very limited within stream channel areas, and any fracturing that does occur in channels is likely to fill rapidly as a result of sedimentation.

As discussed in the current plan, it is anticipated that no substantial damage will occur to rangelands as a result of subsidence. Most wildlife will be unaffected. Potential effects on raptors are discussed in the "Fish and Wildlife Protection" portion of this review.

Subsidence Control Plan

The permittee has relocated several future monitoring stations that will gather data to determine the true angle of draw. This is particularly true with the longwall panels located on the westside of the main entries of the mine. This could optimize the recovery of coal.

Performance Standards for Subsidence Control

Subsidence damage to surface resources is not anticipated. No public buildings or facilities, churches, schools, hospitals, impoundments or other bodies of water with a capacity of 20 acre-feet or more, aquifers or bodies of water that serve as a significant water source for any public water supply system, urbanized areas, cities, towns, or communities are in the area of potential subsidence (Section 525.200).

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The permittee has revised Plate 3-2 to include the proposed addition to the permit area. This plate shows one eagle nest in the proposed addition, and the plate has been updated to include results from the 1998 raptor survey.

Should material damage occur, SOLDIER CANYON MINE will correct any material damage to the extent technologically and economically feasible. In addition, SOLDIER CANYON MINE will notify the Division of any slide, rock fall, or other disturbance caused by subsidence that will affect the environment.

The information provided in the proposed amendment is not considered adequate to determine subsidence that occurred outside the angle of draw. New submittal must justify and determine an accurate angle of draw for future coal leases. This potential information could increase the recoverable tons of coal in future leases.

Notification.

Each owner or resident of property that is above and adjacent to an underground mining block and may be affected by subsidence will be notified by mail at least 6 months prior to mining, or within that 6-month period if approved by the Division. The notification will contain:

- Identification of specific areas in which mining will take place;
- Dates the specific areas will be undermined; and
- The location or locations where the SOLDIER CANYON MINE subsidence control plan may be examined.

Findings:

The information provided in the proposed amendment is considered adequate to determine subsidence and the true angle of draw.

SLIDES AND OTHER DAMAGE

Regulatory Reference: 30 CFR Sec. 817.99; R645-301-515.

Analysis:

The significant revision does not change this section of the MRP. The information and commitments in the current MRP are adequate to meet the requirements of the Coal Mining Rules.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

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FISH AND WILDLIFE PROTECTION

Regulatory Reference: 30 CFR Sec. 784.21, 817.97; R645-301-322, -301-333, -301-342, -301-358.

Analysis:

The current mining and reclamation plan contains monitoring and protection commitments some of which apply to mining in the area proposed to be added. These commitments include consultation with various agencies and evaluation of mine plans at least nine months before undermining any nests to determine what protection, avoidance or mitigation options are available.

The Fish and Wildlife Service provided a list of proposed and listed threatened, endangered species for the nearby West Ridge Mine. The Division analyzed the potential for each species on this list to be affected by the proposed addition to the permit area, and, except for potential effects to the threatened and endangered fish of the upper Colorado River basin (see discussion below), there should be no effects. Species on the list are:

- | | |
|---------------------|---------------------|
| Graham Beardtongue | Razorback Sucker |
| Bald Eagle | Humpback Chub |
| Peregrine Falcon | Colorado Pikeminnow |
| Black-footed ferret | Bonytail Chub |

The peregrine falcon is no longer listed, but it is still protected. Raptor surveys have failed to locate peregrine falcon scrapes in the permit area or the proposed addition although they have been found nearby. Because no scrapes will be subsided and because nearby scrapes are more than one mile away from surface disturbances, there should be no effects.

According to Ben Franklin of the Utah Natural Heritage Program, there is a historical collection of Graham beardtongue from the extreme northeastern corner of Carbon County a few hundred feet from the county line. It is an endemic that occurs almost exclusively on the Green River Formation in Uintah and Duchesne counties. There is virtually no likelihood the mine would affect this species.

There have been no confirmed sightings of black-footed ferrets in Carbon County in several years, so there should be no effect on this species.

Although bald eagles are common winter residents, there are no nests or concentrated roosting sites within either the current permit area or the proposed addition.

Through water use, the mine could adversely affect threatened and endangered fish of the upper Colorado River basin. The Fish and Wildlife Service requires mitigation when annual water use exceeds 100 acre-feet. According to the revised Probable Hydrologic Consequences document, the increased acreage will not result in increased water use, which is currently estimated at 46.5 acre-feet per year. Therefore, no mitigation should be required.

The Division received a letter from the Fish and Wildlife Service dated March 28, 2000, concurring with the Division's findings on threatened and endangered species. Although water depletions are considered to jeopardize the continued existence of the threatened and endangered fish of

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the upper Colorado River basin, depletions are addressed by existing inter-agency Section 7 agreements. Therefore, no additional action or mitigation is required at this time. If the mine causes additional depletions, it will be necessary to reassess this determination.

Findings:

Information provided in the proposal is adequate to meet the requirements of this section of the regulations. The Fish and Wildlife Service has concurred with the Division's findings on threatened and endangered species, and the proposal can proceed with no mitigation required.

TOPSOIL AND SUBSOIL

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

Analysis:

Protection of topsoil and subsoil is discussed in the current MRP. The significant revision will not involve disturbance or removal of soils. No additional information on soils is required for approval of the significant revision.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

VEGETATION

Regulatory Reference: R645-301-330, -301-331, -301-332.

Analysis:

The existing mining and reclamation plan adequately addresses interim revegetation, and because no surface disturbance is proposed, no revisions are needed.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

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

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Analysis:

Road Systems

Road systems and other transportation facilities are discussed in Section 527 of the current MRP. No additional information on road systems and other transportation facilities is needed for approval of the significant revision.

Other Transportation Facilities

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Analysis:

Disposal of coal mining waste is discussed in Section 536 of the current MRP. No spoil or processing waste is produced by the Dugout Canyon Mine. No additional information on spoil and waste materials is needed for approval of the significant revision.

Findings:

No additional information on spoil and waste materials is needed for approval of the significant revision; therefore, information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

HYDROLOGIC INFORMATION

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

Analysis:

Underground mining and reclamation activities are planned to be conducted to minimize disturbance of the hydrologic balance within the permit and adjacent areas, to prevent material damage to the hydrologic balance outside the permit area, and to support approved postmining land uses in accordance with the terms and conditions of the approved permit and the performance standards of this

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part. The Division has not required additional preventive, remedial, or monitoring measures to assure that material damage to the hydrologic balance outside the permit area is prevented.

The monitoring plan at Dugout Canyon Mine conforms to the amended monitoring plan approved for the adjacent Soldier Canyon Mine, which is also operated by Canyon Fuel Company. The amended Soldier Canyon Mine monitoring plan is based on UDOGM Coal Regulatory Program Directive Tech-004 (Tech-004) and was approved in accordance with the procedure in section 5E of Tech-004. (By defining terms, stating objectives, and identifying responsibilities, Tech-004 is meant to clarify the Division's position on what constitutes an appropriate monitoring program and provides methodology for consistently amending these monitoring programs. Under Tech-004, amendments to monitoring programs will be approved or disapproved on a site specific basis.)

Ground-water Monitoring

Locations of wells and springs to be monitored are shown on Plate 7-1. Operational ground-water quality parameters to be monitored at the Dugout Canyon Mine are listed in Table 7-4 of the significant revision. The parameters correspond with the operational parameters in Table 4 of Tech-004 except that total alkalinity and hardness are not included. Operational ground-water monitoring protocols are given in Table 7-4 and discussed on pages 7-53 through 7-58.

For the initial Dugout Canyon Mine MRP, the permittee selected springs SC-65, SP-20 (same as S-30), SC-14, and SC-100 for operational monitoring because they were considered reasonably accessible and representative of conditions within their respective formations (page 7-54); however, there was actually little historic data for these springs and it was necessary to rely on data from the Soldier Canyon Mine and surrounding springs to determine baseline conditions. Because of the dearth of baseline water-quality and -quantity data, the operator was asked to commit to 2 years of quarterly water-quality and -quantity monitoring at these four springs rather than measuring field parameters only (UDOGM TA dated October 16, 1998).

Springs SC-65, SP-20, SC-14, and SC-100 were to have been monitored for operational water quality and quantity beginning the third-quarter of 1998; however, due to the lack of clarity in the monitoring plan, only field parameters were collected. Table 7-4 of the significant revision clarifies that monitoring for operational water-quality parameters was begun in the 3rd quarter of 1999 and will continue for 2 years, after which monitoring will be for the field measurements (flow, pH, specific conductance, and temperature) listed in Table 7-4. This varies from the recommended schedule in Tech-004 but conforms with the amended (amended following the procedure of Tech-004) monitoring plan that was approved for the adjacent Soldier Canyon Mine. Third quarter 1999 data have been received by DOGM.

The significant revision adds springs SC-116, 200, 203, 227, 259, and 260 to the operational monitoring list: 200, 203, 259, and 260 are in the SITLA tract. Baseline data are scarce in the vicinity of the Dugout Canyon Mine, so quarterly water samples from these springs are to be analyzed for the baseline parameters specified in Tech 004 for 3 years: this 3-year monitoring period began with the 1st quarter 1999. After the initial 3-year period, these springs will be monitored quarterly for field parameters only. Data for March and June 1999 are tabulated with the ground-water information in Appendix 7-2 (the table does not include spaces for Cu, NH₃, and cations and anions, and it is not clear whether Mn is total or dissolved), and data for the 3rd quarter 1999 have been received by DOGM (all

baseline parameters).

In addition to the monitoring just described, tritium and operational water-quality parameters will be determined for all 10 springs at high flow and low flow during the first "wet" year and during the first "dry" year. Also during these "wet" and "dry" years, spring flows will be measured weekly between April 1 and August 31, as conditions permit, with the intent of preparing baseflow hydrographs from the data. "Wet" and "dry" years will be defined based on snow-pack measurements as of March 1 for the Price-San Rafael area, a "wet" year being the first year after permit issuance when the snow pack water content is greater than 110% of normal and a "dry" year being the first year following permit issuance when the snow pack is less than 70% of normal. These "wet" and "dry" years might occur during the initial 2 years of regular quarterly operational monitoring (pages 7-58 and 7-59, Table 7-4).

Tech-004 recommends that for springs, water-quality samples be analyzed for baseline parameters every fifth year. Page 7-57 includes a commitment to collect one water sample from each monitored spring, at low flow every fifth year, during the year preceding re-permitting, that will be analyzed for baseline parameters.

Water depth in wells GW-10-A, GW-11-2, and GW-24-1 will be monitored quarterly. Well GW-24-1, completed in the Castlegate Sandstone, is currently monitoring ground-water levels in federal lease U07064-027821.

In September 1998, during Phase I construction of the mine, ground water was discovered discharging from the old Gilson coal-seam workings on the east side of Dugout Canyon. This water had been seeping undetected through the alluvium and into the stream channel. Beginning in the fourth quarter of 1998, this water was to be monitored for operational ground-water parameters at point MD-1 (Table 7-4). Data for October and December 1998 and March and June 1999 are tabulated with the surface-water information in Appendix 7-7 (the table does not include spaces for anions and cations, and it is not clear whether Mn is total or dissolved), and data for the 3rd quarter 1999 have been received by DOGM (all operational parameters).

Surface-water Monitoring

Locations of monitoring points are shown on Plate 7-1. Surface-water monitoring protocols are given in Table 7-5 and on pages 7-58 through 7-62 of the significant revision. Operational surface water quality parameters to be monitored at the Dugout Canyon Mine are also listed in Table 7-5. The parameters correspond with the operational parameters in Table 5 of Tech-004 except that total alkalinity and hardness are not included.

Surface-water monitoring site DC-1 is below the disturbed area and discharge points of the Dugout Canyon Mine, and DC-2, DC-3, DC-4, and DC-5 are above. DC-1, DC-2, and DC-3 are monitored quarterly for operational field and laboratory parameters (Table 7-5). Data are tabulated in Appendix 7-7, baseline data from 1979 to 1981 for DC-1, and operational data from August 1997 for all 3 sites (the table does not include spaces for Cu, NH₃, and cations and anions, and it is not clear whether Mn is total or dissolved). Operational data for the 3rd quarter 1999 have been received by DOGM.

Under the proposed significant revision, additional monitoring will be done at PC-1a and PC-2 on Pace Creek to evaluate surface-water conditions upgradient and downgradient of the significant

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revision area and the SITLA tract, and at RC-1 in Rock Canyon to obtain baseline data for future mine expansion into the SITLA tract. Baseline data will be obtained for 3 years, beginning 1st quarter 1999, prior to initiating operational monitoring (page 7-58). Data for March and June 1999 are tabulated with the surface-water information in Appendix 7-7 of the significant revision (the table does not include spaces for Cu, NH₃, and cations and anions, and it is not clear whether Mn is total or dissolved). Baseline data for the 3rd quarter 1999 have been received by DOGM.

During the first "wet" and "dry" years (defined above), flows at DC-2, DC-3, DC-4, DC-5, PC-1a, PC-2, and RC-1 will be measured weekly between April 1 and August 31, as conditions permit. Also, tritium and operational water quality will be measured for samples collected at DC-4 and DC-5 at high flow and low flow during each year (pages 7-58 and 7-59, Table 7-5). Tritium content will not be determined at DC-2, DC-3, PC-1a, PC-2, and RC-1.

For surface water, Tech-004 recommends one water-quality sample at low flow every fifth year, either during the year preceding re-permitting or at midterm review, to be analyzed for baseline parameters. The MRP contains a commitment to collect one water sample at each sampling point during low flow period every fifth year, during the year preceding re-permitting, to be analyzed for baseline parameters (p. 7-59).

Acid and Toxic-forming Materials

Acid- and toxic-forming materials are discussed in Chapter 6. No new information on acid- and toxic-forming materials is in the revised Chapter 6 in the significant revision submittal. No additional information on acid- and toxic-forming materials is needed for approval of the significant revision.

Disposal of coal mining waste is discussed in Section 536 of the current MRP. No spoil or processing waste is produced by the Dugout Canyon Mine. There is to be no additional surface disturbance because of the significant revision and no additional information on spoil and waste materials is needed for approval of the significant revision.

Transfer of Wells

The significant revision contains no plans for boring or construction of wells. Well GW-24-1 (completed in the Castlegate Sandstone) is currently monitoring ground-water levels in federal lease U07064-027821. Before final release of bond, exploration or monitoring wells will be sealed in a safe and environmentally sound manner. Ownership of wells will be transferred only with prior approval of the Division, and conditions of such a transfer will comply with State and local laws. Canyon Fuel Company will remain responsible for the management of transferred wells until bond release (Section 731.400).

Casing and Sealing of Wells

The significant revision contains no plans for boring or construction of wells. Well GW-24-1 (completed in the Castlegate Sandstone) is currently monitoring ground water levels in federal lease U07064-027821. When no longer needed for monitoring or other use approved by the Division and upon a finding of no adverse environmental or health and safety effects, or unless approved for transfer as a water well, each well will be capped, sealed, backfilled, or otherwise properly managed as required

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by the Division. Permanent closure measures will be designed to prevent access to the mine workings by people, livestock, fish and wildlife, machinery and to keep acid or other toxic drainage from entering ground or surface waters (Section 765).

Water Quality Standards and Effluent Limitations

There will be no additional surface disturbance from this significant revision. Discharges of water from disturbed areas will be in compliance with all Utah and federal water-quality laws and regulations and with effluent limitations for coal mining contained in 40 CFR Part 434 (Section 751).

Findings:

Operations hydrologic information provided in the significant revision is considered adequate to meet the requirements of this section.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Analysis:

Affected Area Maps

Plate 5-7 shows the boundaries of all areas proposed to be affected over the estimated total life of the coal mining and reclamation operations. The dates on Plate 5-7 indicate that the permittee hopes to operate the Dugout Canyon Mine until 2009. Plate 5-7 has been revised to include federal lease U07064-027821 and the SITLA tract and adjacent areas.

Mining Facilities Maps

The current surface facility map is considered accurate.

Surface Facilities

The current surface facility map is not accurate with additions that have been made. A review of the map was made during the August complete inspection.

On page 5-16, the two areas will not be disturbed as stated in the original MRP. These areas will need to be identified on plate 5-2, because the disturbed area has changed. A new calculation of "totaled" disturbed area is needed.

Mine Workings Maps

See the section on Maps, Plans, and Cross Sections of Resource Information

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Monitoring and Sample Location Maps

Maps showing monitoring locations for vegetation, wildlife, and water and locations of bore holes have been revised to include federal lease U07064-027821 and the SITLA tract and adjacent areas.

Findings:

Maps, plans, and cross sections of mining operations in the significant revision are adequate to meet the requirements of this section of the regulations.

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HYLOGIC INFORMATION

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

Analysis:

Ground-water Monitoring

Reclamation ground-water monitoring protocols are given along with the operational monitoring protocols in Section 731.200 p. 7-52 through 7-57). Locations of wells and springs to be monitored are on Plate 7-1. Groundwater monitoring of wells and springs will continue during the post-mining period until bond release (p. 7-56).

During the post-mining period, field data and water samples will be collected once each year in September or October, during low-flow season but while the sites are still accessible, at springs SP-20, SC-14, SC-65, SC-100, SC-116, 200, 203, 227, 259, and 260 (p.7-53).

The significant revision contains no change to the reclamation well-monitoring plan. Water levels will be measured in wells GW-10-2, GW-11-2, and GW-24-1, all completed in the Price River Formation or the underlying Castlegate Sandstone, once each year (p.7-56).

Surface-water Monitoring

The surface-water monitoring plan is in Section 731.200, pages 7-57 through 7-59. Surface-water data will be collected under the surface-water monitoring program every year until bond release (p. 7-59). Locations of reclamation monitoring sites DC-1, DC-2, DC-3, PC-1a, and PC-2 are on Plate 7-1.

Transfer of Wells

The significant revision contains no plans for boring or construction of wells. Well GW-24-1 (completed in the Castlegate Sandstone) is currently monitoring ground-water levels in federal lease U07064-027821. Before final release of bond, exploration or monitoring wells will be sealed in a safe and environmentally sound manner. Ownership of wells will be transferred only with prior approval of the Division, and conditions of such a transfer will comply with State and local laws. Canyon Fuel Company will remain responsible for the management of transferred wells until bond release (Section 731.400).

Casing and Sealing of Wells

The significant revision contains no plans for boring or construction of wells. Well GW-24-1 (completed in the Castlegate Sandstone) is currently monitoring ground water levels in federal lease U07064-027821. When no longer needed for monitoring or other use approved by the Division and

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upon a finding of no adverse environmental or health and safety effects, or unless approved for transfer as a water well, each well will be capped, sealed, backfilled, or otherwise properly managed as required by the Division. Permanent closure measures will be designed to prevent access to the mine workings by people, livestock, fish and wildlife, machinery and to keep acid or other toxic drainage from entering ground or surface waters (Section 765).

Findings:

Reclamation hydrologic information provided in the significant revision is considered adequate to meet the requirements of this section.

CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT

Regulatory Reference: 30 CFR Sec. 784.14; R645-301-730.

A Cumulative Hydrologic Impact Assessment (CHIA) has previously been prepared for the Soldier Canyon and Dugout Canyon Mines. The Cumulative Impact Area (CIA) for that CHIA included federal lease U07064-027821 and the surrounding area. Two small corners of the subsidence buffer zone around the federal lease were not included in that CIA because those two remote areas would not be impacted by mining nor contribute to cumulative impacts outside the proposed Dugout Canyon Mine permit area. With the addition of the SITLA tract and the possible waste-rock disposal site, the CIA has been expanded into the Cow Canyon drainage to include all of the Dugout permit area and SITLA tract, and also expanded to the south to include the waste-rock disposal site. No additional hydrologic and geologic information is needed from the permittee for the CHIA.

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