

BEAVER CREEK COAL COMPANY  
1986 ANNUAL REPORT  
GORDON CREEK NO. 2/7 MINES

BEAVER CREEK COAL COMPANY  
1986 ANNUAL REPORT  
GORDON CREEK NO. 2/7 MINES

**BEAVER CREEK Coal Company**

Post Office Box 1378  
Price, Utah 84501  
Telephone 801 637-5050



March 30, 1987

**RECEIVED**  
APR 02 1987

**DIVISION OF  
OIL, GAS & MINING**

Mr. Lowell Braxton  
Administrator  
Division of Oil, Gas & Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

Re: 1986 Annual Report  
Gordon Creek No. 2/7 Mines  
ACT/007/016  
Carbon County, Utah

Dear Mr. Braxton:

Enclosed is the Annual Report for Coal Mining and Reclamation Operations for 1986 for Gordon Creek No. 2/7 Mines.

If you have any questions or need any further information, please let me know.

Respectfully,

Dan W. Guy,  
Manager, Permitting & Compliance

DWG/rs

cc: R.J. Marshall  
File 4-P-5-1-1

**BEAVER CREEK Coal Company**

Post Office Box 1378  
Price, Utah 84501  
Telephone 801 637-5050



March 30, 1987

Mr. Lowell Braxton  
Administrator  
Division of Oil, Gas & Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

Re: 1986 Annual Report  
Gordon Creek No. 2/7 Mines  
ACT/007/016  
Carbon County, Utah

Dear Mr. Braxton:

Enclosed is the Annual Report for Coal Mining and Reclamation Operations for 1986 for Gordon Creek No. 2/7 Mines.

If you have any questions or need any further information, please let me know.

Respectfully,

Dan W. Guy,  
Manager, Permitting & Compliance

DWG/rs

cc: R.J. Marshall  
File 4-P-5-1-1

COAL MINING AND RECLAMATION OPERATIONS FOR 1986

State of Utah  
Department of Natural Resources  
Division of Oil, Gas and Mining  
3 Triad Center, Suite 350  
355 West North Temple  
Salt Lake City, Utah 84180-1203  
(801) 538-5340

Operator: Beaver Creek Coal Company  
Mine Name: Gordon Creek No. 277 Mines  
Mailing Address: P.O. Box 1378, Price, Utah 84501  
Company Representative: Dan W. Guy  
Permit No.: ACT/007/016  
Date of Permanent Program Permit: 8/27/84  
Quantity of Coal Mined (tonnage) 1986: #2 - 0 (sealed)  
#7 - 507,494 tons  
Attach most recent certificate of insurance. (Included)

Attach updated mine sequence map. (Included - See subsidence maps)

All monitoring activities during the report period must be submitted with this report: (including, but not limited to)

- A. Water Monitoring Data (Included)
- B. Precipitation Data (Included)
- C. Subsidence Monitoring (Included)
- D. Vegetation Data (test plots) or Revegetation Success Monitoring (includes interim and final) (Included)
- E. Permit Stipulation Status (Included)
- F. Modifications / Amendments (Included)
- G. Notifications (Included)

GORDON CREEK NO. 2/7 MINES

CERTIFICATES OF INSURANCE

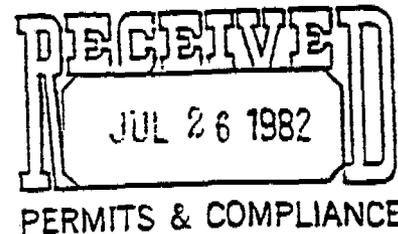


Coverage includes use of explosives and damage to water wells. It is hereby understood and agreed that the insurers notify the State of Utah, Division of Oil, Gas & Mining, whenever substantive changes are made in the policy, including any termination or failure to renew in accordance with UMC 806.14 (c).

Finance  
515 South Flower Street  
Los Angeles, California 90071  
Telephone 213 486 1374



H. A. Minehart  
Risk Manager



July 22, 1982

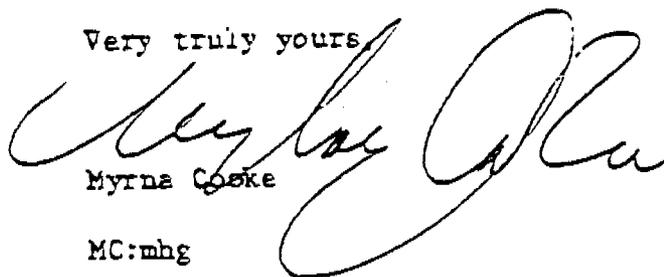
State of Utah  
Division of Oil, Gas and Mining  
Utah Department of Natural Resources  
4241 State Office Building  
Salt Lake City, UT 84114

Attention: Mr. James W. Smith, Jr.  
Coordinator, Mined Land Development

Gentlemen:

With respect to our Certificate of Insurance issued to your office on March 9, 1981, with an expiration date of January 1, 1984, please be advised that the General Liability Insurance will be renewed on January 1, 1984, for another three-year period, at which time a new Certificate will be furnished to the State of Utah, Division of Oil, Gas and Mining.

Very truly yours,



Myrna Cooke

MC:mhg

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

Land Office & Serial Number

Salt Lake City, Utah  
U-8319

STATEWIDE OR NATIONWIDE MINERAL LEASE BOND  
(EXCEPT OIL AND GAS)

KNOW ALL MEN BY THESE PRESENTS, That we,

**SWISHER COAL COMPANY, a Utah Corporation**

of the county of **Carbon**, in the State of **Utah**

as principal, and **AETNA CASUALTY & SURETY CO.**, of the county of **Hartford**

in the State of **Connecticut**, as surety, are held and firmly bound unto the United States

of America in the sum of **Twenty Five Thousand Dollars**

(**\$25,000.00**) lawful money of the United States, for which payment, well and truly to be made, we, by these presents, bind ourselves, and each of us, and each of our heirs, executors, administrators, successors, and assigns, jointly and severally, upon the following conditions, viz:

If the amount of this bond is \$75,000, or if it is raised by an attached rider to that amount, coverage shall extend to

all the principal's holdings involving deposits in the United States, including Alaska, under the Act or Acts cited in Schedule A.

If the amount of this bond is \$25,000, its coverage extends only to the principal's holdings involving **COAL** deposits in the State named in Schedule A. Furthermore, such coverage is confined to the holdings under the Public Domain Leasing Act of February 25, 1920 (41 Stat. 437) as amended.

SCHEDULE A

Public Domain Leasing Act of February 25, 1920 (41 Stat. 437) as amended and supplemented (30 U.S.C. 181-287)		Acquired Lands Leasing Act of August 7, 1947 (61 Stat. 913; 30 U.S.C. 251-359)	
NAME OF STATE	LEASE NUMBER	NAME OF STATE	LEASE NUMBER
Utah	U-8319		

and other federal leases now covered by individual bonds which coverage is in process of being transferred by rider or otherwise statewide bond.

The principal and surety both agree to "assume the liability for the necessary reclamation and abandonment work required as a result of operations on the lease lands prior to the date of the assignment" of U-8319.

The conditions of the foregoing obligations are such that, whereas the said principal, in one or more of the following ways, has an interest in mineral leases issued under the Act or Acts cited in Schedule A of this bond:

- 1. as the lessee of such leases;
- 2. as the approved holder of operating rights in all or part of the lands covered by such leases under operating agreements with the lessee; and
- 3. as designated operator or agent under such leases pending approval of an assignment or operating agreement; and

WHEREAS the principal is authorized to drill for, mine, extract, remove, and dispose of mineral deposits in or under the lands covered by the leases, operating

agreements or designations, and is obligated to comply with certain covenants and agreements set forth in such instruments; and

WHEREAS the principal agrees that the coverage of this bond, in addition to the present holdings of the principal shall extend to and include:

- 1. Any mineral lease hereafter issued to, or acquired by, the principal affecting mineral deposits in the State or States now named in Schedule A, or later named in a rider, the coverage to be confined in the principal's holdings under the Act or Acts cited at the head of the column in which the name(s) of the State or States appears and to become effective immediately upon such issuance or upon departmental approval of a transfer in favor of the principal.

2/15/83

2-22

2. Any operating agreement entered into or acquired by the principal, affecting mineral deposits in the States now named in Schedule A, or later named in a rider, relating to mineral leases issued under the Act or Acts cited in Schedule A at the head of the column in which the name of the State is placed. The coverage shall become effective immediately upon departmental approval of the agreement or of a transfer of an operating agreement to the principal.

3. Any designation subsequent hereto of the principal as operator or agent of a lessee under a lease issued pursuant to an Act or Acts cited in Schedule A and covering lands in a State named in Schedule A, either presently or by rider. This coverage shall become effective immediately upon the filing of such a designation under a lease.

4. Any extension of a lease covered by this bond, such coverage to continue without any interruption due to the expiration of the term set forth in the lease.

WHEREAS the principal hereby agrees that notwithstanding the termination of any lease or leases, operating agreements or designations as operator or agent, covered by this bond, whether the termination is by operation of law or otherwise, the bond shall remain in full force and effect as to any remaining leases, operating agreements, or designations covered by the bond; and

WHEREAS the principal as to any lease or part of a lease for lands as to which he has been designated as operator or agent, or approved as operator, in consideration of being permitted to furnish this bond in lieu of

the lessees, and by these presents does hereby bind himself to fulfill, on behalf of each lessee, all the obligations of each such lease for the entire leasehold in the same manner and to the same extent as though he were the lessor; and

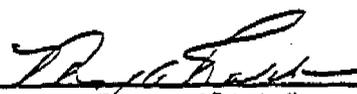
WHEREAS the principal agrees that notwithstanding any use of the security pledged herewith for the purpose for which it is pledged, the bond shall remain in full force and effect in the sum above set forth and the he will, whenever so required by the lessor, deposit additional security to bring the security up to the full amount; and

WHEREAS the principal agrees that the neglect or forbearance of said lessor in enforcing, as against the lessees of such lessor, the payment of rental or royalties or the performance of any other covenant, condition, or agreement of the lessee, shall not, in any way, release the principal from any liability under this bond; and

WHEREAS the principal agrees that in the event of any default under the lease, the lessor may commence and prosecute any claim, suit, action, or other proceeding against the principal without the necessity of joining the lessees.

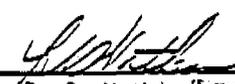
NOW, THEREFORE, if said principal shall in all respects faithfully comply with all of the provisions of the lease referred to hereinbefore, then the above obligations are to be void; otherwise to remain in full force and effect.

Signed on this 21st day of JANUARY, 1976, in the presence of:

  
\_\_\_\_\_  
(Signature of Principal)

607 Keams Building S.C. Utah 84101  
(Address of Principal, include zip code)

[SEAL]

  
\_\_\_\_\_  
R. C. Watkins (Signature of Surety) Attorney-in-Fact

The Aetna Casualty & Surety Company  
425 South Main, Salt Lake City, Utah 84143  
(Business Address of Surety, include zip code)

If this bond is executed by a corporation, it must bear the seal of such corporation



POWER OF ATTORNEY AND CERTIFICATE OF AUTHORITY OF ATTORNEY(S)-IN-FACT

KNOW ALL MEN BY THESE PRESENTS, THAT THE AETNA CASUALTY AND SURETY COMPANY, a corporation duly organized under the laws of the State of Connecticut, and having its principal office in the City of Hartford, County of Hartford, State of Connecticut, hath made, executed and assented, and sent by these presents, made, executed and assented **H. B. Cox, J. Keyser, R. C. Watkins or J. E. Breitwieser** - -

of Salt Lake City, Utah

in true and lawful Attorney-in-Fact, with full power and authority hereby conferred to sign, execute and acknowledge, at any place within the United States, or, if the following line be struck in, within the area then designated, the following instrument(s):  
by his sole signature and seal, any and all bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any and all documents incident thereto

and to bind THE AETNA CASUALTY AND SURETY COMPANY, thereby as fully and to the same extent as if the same were signed by the duly authorized officers of THE AETNA CASUALTY AND SURETY COMPANY, and all the acts of said Attorney-in-Fact, pursuant to the authority herein given, are hereby ratified and confirmed.

This appointment is made under and by authority of the following Standing Resolutions of said Company which Resolutions are now in full force and effect:

VOTED: That each of the following officers: Chairman, Vice Chairman, President, Any Executive Vice President, Any Senior Vice President, Any Vice President, Any Assistant Vice President, Any Secretary, Any Assistant Secretary, may from time to time appoint Assistant Vice Presidents, Resident Assistant Secretaries, Attorney-in-Fact, and Agents to act for and on behalf of the Company and may give any such appointee such authority in his certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors may at any time remove any such appointee and revoke the power and authority given him.

VOTED: That any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the Chairman, the Vice Chairman, the President, an Executive Vice President, a Senior Vice President, a Vice President, an Assistant Vice President or by a Resident Vice President, pursuant to the power prescribed in the certificate of authority of such Resident Vice President, and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary or by a Resident Assistant Secretary, pursuant to the power herein, or (b) signed in the certificate of authority of such Resident Assistant Secretary; or (b) duly executed under seal, if required by one or more Attorney-in-Fact pursuant to the power prescribed in his or their certificate or certificates of authority.

This Power of Attorney and Certificate of Authority is signed and sealed by facsimile under and by authority of the following Standing Resolution voted by the Board of Directors of THE AETNA CASUALTY AND SURETY COMPANY which Resolution is now in full force and effect:

VOTED: That the signature of each of the following officers: Chairman, Vice Chairman, President, Any Executive Vice President, Any Senior Vice President, Any Vice President, Any Assistant Vice President, Any Secretary, Any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any certificate of authority or to any contracts relating thereto according to the Resolutions of the Board of Directors, Resident Assistant Secretaries or Attorney-in-Fact for purposes of executing and attesting bonds and underwritings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company in the future with respect to any bond or underwriting to which it is attached.

IN WITNESS WHEREOF, THE AETNA CASUALTY AND SURETY COMPANY has caused this instrument to be signed by its Secretary and its corporate seal to be hereto affixed this 27th day of August, 1975



THE AETNA CASUALTY AND SURETY COMPANY

By B. I. Radding  
Secretary

State of Connecticut }  
County of Hartford }

On this 27th day of August, 1975, before me personally came **E. I. Radding** Secretary

to the known and being by the duly sworn and sworn and say: that he is THE AETNA CASUALTY AND SURETY COMPANY, the corporation described in and which executed the above instrument; that he knows the seal of said corporation, that the seal affixed to the said instrument is such corporate seal; and that he executed the said instrument on behalf of the corporation by authority of the Board of Directors of the said corporation.



E. I. Radding  
Notary Public

CERTIFICATE

I, the undersigned, Assistant Secretary of THE AETNA CASUALTY AND SURETY COMPANY, a stock corporation of the State of Connecticut, DO HEREBY CERTIFY that the foregoing and attached Power of Attorney and Certificate of Authority are now in full force and effect, and furthermore, that the Standing Resolutions of the Board of Directors, as set forth in the Certificate of Authority, are now in force.

Signed and Sealed at the Home Office of the Company, in the City of Hartford, State of Connecticut, Done this 27th day of August, 1975.

JANUARY

2/15/82

2-24



[Signature]



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Scott M. Matheson, Governor  
Temple A. Reynolds, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

1 State Office Building - Salt Lake City, UT 84114 - 801-533-5771

December 20, 1984

Mr. Dan W. Guy, Manager  
Permitting and Compliance  
Beaver Creek Coal Company  
P. O. Box 1378  
Price, Utah 84501

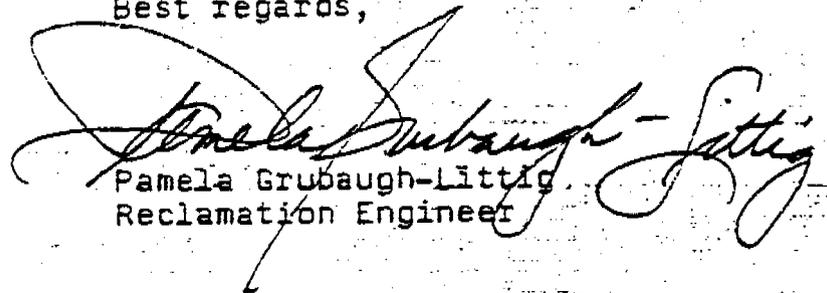
Dear Mr. Guy:

RE: Posted Bond in 1989 Dollars, Gordon Creek #2 and #7,  
ACT/007/016, #5, Carbon County, Utah

I enclosed a signed original bond for your files. -This bond represents posting of the reclamation surety in 1989 dollars for the Gordon Creek #2 and #7 operations.

If you have any comments, please let me know. Thank you for your cooperation.

Best regards,

  
Pamela Grubaugh-Littig  
Reclamation Engineer

btb  
Enclosure  
cc: Mary Humphrey  
Ron Daniels  
Mary Boucek  
8808R-33

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES AND ENERGY  
DIVISION OF OIL, GAS AND MINING  
4241 State Office Building  
Salt Lake City, Utah 84111

RECEIVED  
DEC 4 1984

THE MINED LANDS RECLAMATION ACT

BOND  
\*\*\*\*\*

DIVISION OF  
OIL, GAS & MINING

The undersigned Beaver Creek Coal Company  
as principal, and FEDERAL INSURANCE COMPANY as  
surety, hereby jointly and severally bind ourselves, our heirs, administrators,  
executors, successors and assigns unto the State of Utah, Division of Oil, Gas  
and Mining, and the U. S. Department of the Interior, Office of Surface Mining  
in the penal sum of Six hundred forty one thousand four hundred forty three and no/100  
dollars (\$ 641,443.00). Such sum shall be payable to  
one, but not both, of the above-named agencies.

The principal estimated in a "Notice of Intention to Commence Mining  
Operations and a Mining and Reclamation Plan," filed with the Division of Oil,  
Gas and Mining on the 2nd day of February,  
1983, that 2,286.05 acres of land will be affected by this mining  
operation in the State of Utah. A description of the affected land is attached  
hereto as Exhibit "A."

If the principal shall satisfactorily reclaim the above-mentioned lands  
affected by mining by the said principal in accordance with the Mining and  
Reclamation Plan and shall faithfully perform all requirements of the Mined  
Land Reclamation Act, and comply with the Rules and Regulations adopted in  
accordance therewith, then this obligation shall be void; otherwise it shall  
remain in full force and effect until the reclamation is completed as outlined  
in the approved Mining and Reclamation Plan.

If the approved plan provides for reclamation of the land affected on a  
piecemeal or cyclic basis, and the land is reclaimed in accordance with such  
plan, then this bond may be reduced periodically.

In the converse, if the plan provides for a gradual increase in the area  
of the land affected or increased reclamation work, then this bond may  
accordingly be increased with the written approval of the surety company.

NOTE: Where one signs by virtue of Power of Attorney for a surety company, such Power of Attorney must be filed with this bond. If the principal is a corporation, the bond shall be executed by its duly authorized officers with the seal of the corporation affixed.

BEAVER CREEK COAL COMPANY  
Principal (Company)

By *J. Merckhoff - President*  
Company Official - Position

Date: November 28, 1984

FEDERAL INSURANCE COMPANY  
Surety (Company)

By *N. D. Squires*  
Official of Surety - Position  
Norman D. Squires, Attorney-in-Fact  
447 East First South  
Salt Lake City, Utah 84111

DATE: November 28, 1984

APPROVED AS TO FORM:

*Barbara W. Roberts*  
Assistant Attorney General

STATE OF UTAH  
County of Salt Lake

} ss.:

On this 28th day of November, in the year nineteen hundred  
eighty-four, A. D., before me, Mary Cristaudo, a Notary Public in and for  
County of Salt Lake, State of Utah, residing therein, duly commissioned and

personally appeared Norman D. Squires  
known to me to be the Attorney(s) in Fact of Federal Insurance Company execut  
annexed instrument, and acknowledged to me that such Corporation executed t

IN WITNESS WHEREOF, I have hereunto set my hand and affixed by off  
in said county the day and year in this certificate first above written.

*Mary Cristaudo*  
Notary Public in and for the County of Salt Lake, State

My Commission expires July 4, 1987

POWER OF ATTORNEY

Know all Men by these Presents, That the FEDERAL INSURANCE COMPANY, 15 Mountain View Road, Warren, New Jersey, a New Jersey Corporation, has constituted and appointed, and does hereby constitute and appoint Norman D. Squires, Richard G. Taylor and George L. Williams, Salt Lake City, Utah

each true and lawful Attorney-in-Fact to execute under such designation in its name and to affix its corporate seal to and deliver for and on its behalf as surety person or otherwise, bonds of any of the following classes, to-wit:

- 1. Bonds and Undertakings filed in any suit, matter or proceeding in any Court, or filed with any Sheriff or Magistrate, for the doing or not doing of anything specified in such Bond or Undertaking.
2. Surety bonds to the United States of America or any agency thereof, including those required or permitted under the laws or regulations relating to Customs or Internal Revenue; License and Permit Bonds or other indemnity bonds under the laws, ordinances or regulations of any State, City, Town, Village, Board or other body or organization, public or private; bonds to Transportation Companies, Lost Instrument bonds; Lease bonds, Workers' Compensation bonds, Miscellaneous Surety bonds and bonds on behalf of Notaries Public, Sheriffs, Deputy Sheriffs and similar public officials.
3. Bonds on behalf of contractors in connection with bids, proposals or contracts.

In Witness Whereof, the said FEDERAL INSURANCE COMPANY has, pursuant to its By-Laws, caused these presents to be signed by its Assistant Vice-President and Assistant Secretary and its corporate seal to be hereto affixed this 12th day of December 19 83

Corporate Seal



Richard D. O'Connor

Assistant Secretary

FEDERAL INSURANCE COMPANY

By

George McClellan

Assistant Vice-President

STATE OF NEW JERSEY
County of Somerset

ss.

On this 12th day of December 19 83, before me personally came Richard D. O'Connor to me known and by me known to be Assistant Secretary of the FEDERAL INSURANCE COMPANY, the corporation described in and which executed the foregoing Power of Attorney, and the said Richard D. O'Connor being by me duly sworn, did depose and say that he is Assistant Secretary of the FEDERAL INSURANCE COMPANY and knows the corporate seal thereof; that the seal affixed to the foregoing Power of Attorney is such corporate seal and was thereto affixed by authority of the By-Laws of said Company, and that he signed said Power of Attorney as Assistant Secretary of said Company by like authority; and that he is acquainted with George McClellan and knows him to be the Assistant Vice-President of said Company, and that the signature of said George McClellan subscribed to said Power of Attorney is in the genuine handwriting of said George McClellan and was thereto subscribed by authority of said By-Laws and in respondent's presence.

Notarial Seal



Acknowledged and Sworn to before me on the date above written.

Alice Leonard (Signature)

Notary Public

CERTIFICATION

ALICE LEONARD
NOTARY PUBLIC OF NEW JERSEY.
My Commission Expires June 28, 1988

STATE OF NEW JERSEY
County of Somerset

ss.

I, the undersigned, Assistant Secretary of the FEDERAL INSURANCE COMPANY, do hereby certify that the following is a true excerpt from the By-Laws of the said Company as adopted by its Board of Directors on March 11, 1953 and most recently amended March 11, 1983 and that this By-Law is in full force and effect.

"ARTICLE XVIII.

Section 2. All bonds, undertakings, contracts and other instruments other than as above for and on behalf of the Company which it is authorized by law or its charter to execute, may and shall be executed in the name and on behalf of the Company either by the Chairman or the Vice-Chairman or the President or a Vice-President, jointly with the Secretary or an Assistant Secretary, under their respective designations, except that any one or more officers or attorneys-in-fact designated in any resolution of the Board of Directors or the Executive Committee, or in any power of attorney executed as provided for in Section 3 below, may execute any such bond, undertaking or other obligation as provided in such resolution or power of attorney.

Section 3. All powers of attorney for and on behalf of the Company may and shall be executed in the name and on behalf of the Company, either by the Chairman or the Vice-Chairman or the President or a Vice-President or an Assistant Vice-President, jointly with the Secretary or an Assistant Secretary, under their respective designations. The signature of such officers may be engraved, printed or lithographed."

I further certify that said FEDERAL INSURANCE COMPANY is duly licensed to transact fidelity and surety business in each of the States of the United States of America, District of Columbia, Puerto Rico, and each of the Provinces of Canada with the exception of Prince Edward Island, and is also duly licensed to become sole surety on bonds, undertakings, etc., permitted or required by law.

I, the undersigned Assistant Secretary of FEDERAL INSURANCE COMPANY, do hereby certify that the foregoing Power of Attorney is in full force and effect.

GIVEN under my hand and the seal of said Company at Warren, N.J., this 28th day of November 19 84

Corporate Seal



Norman D. Squires (Signature)
Assistant Secretary



# United States Department of the Interior

BUREAU OF LAND MANAGEMENT  
UTAH STATE OFFICE  
324 SOUTH STATE, SUITE 301  
SALT LAKE CITY, UTAH 84111-2303

IN REPLY REFER TO

3400  
U-8319  
(U-942)

JUN 25 1985

## DECISION

Beaver Creek Coal Company  
555 Seventeenth Street  
Denver, CO 80217

:  
:  
:

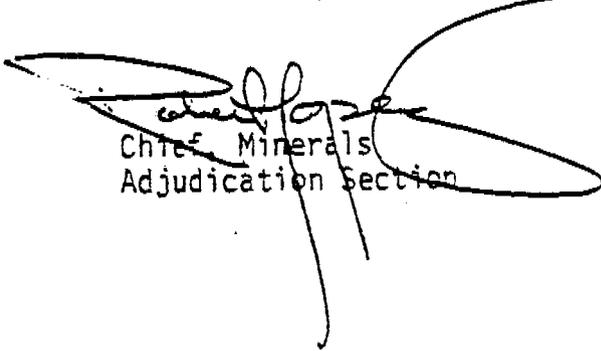
Coal  
U-53159



### Bond Accepted

On April 11, 1985, a coal lease bond (No. 8105 27 12) in the amount of \$123,000, with Beaver Creek Coal Company as principal and Federal Insurance Company as surety, was filed in this office to provide bond coverage for coal lease U-8319.

The bond has been examined, found to meet the requirements of the regulations in 43 CFR 3474.2(a), and is accepted effective as of the date filed.

  
Chief Minerals  
Adjudication Section



# United States Department of the Interior

BUREAU OF LAND MANAGEMENT  
UTAH STATE OFFICE  
324 SOUTH STATE, SUITE 301  
SALT LAKE CITY, UTAH 84111-2303

IN REPLY REFER TO

3400  
U-53159  
(U-942)

JUN 25 1985

## DECISION

Beaver Creek Coal Company  
555 Seventeenth Street  
Denver, CO 80217

: Coal  
: U-53159  
:



### Rider to Bond Accepted

On April 11, 1985, a rider to coal lease bond (No. 8094 25 99), with Beaver Creek Coal Company as principal and Federal Insurance Company as surety, covering coal lease U-53159 was filed.

The rider increases the coverage of this bond from \$10,000 to \$242,000. The rider has been examined, found to be satisfactory, and is hereby accepted effective the date of filing.

Chief, Minerals  
Adjudication Section

GORDON CREEK NO. 2/7 MINES

1986

WATER MONITORING DATA

Water Monitoring Data 1986

# 2 and 7 Mine



Client : Beaver Creek Coal Company  
Address : P.O. Box 1378  
Price, Utah 84501  
Attn. : Mr. Dan Guy; CC: Mr. Mel Coonrod  
P.O. No. :

Sample ID: SITE 2-10  
Sample Date Time: 04/04/86 15:50

Lab No.: 86-WI/01631  
Date Received: 04/07/86

Parameters

Chloride	7.	mg/l
Conductivity @ 25C	538.	umhos/cm
Nitrogen, nitrate	.91	mg/l
Oil and Grease	-1.	mg/l
pH (lab)	7.7	units
Sulfate	70.	mg/l
Solids, total dissolved	334.	mg/l
Solids, total suspended	2.	mg/l
Iron, total	-.02	mg/l
Manganese, total	.01	mg/l

Remarks:

Ralph V. Poulsen  
Ralph U. Poulsen, Director

Flow UK  
Temp 4°  
pH 7.7  
Cond 540  
D.O. NA

Client : Beaver Creek Coal Company  
Address : P.O. Box 1378  
Price, Utah 84501  
Attn. : Mr. Dan Guy; CC: Mr. Mel Conrad  
P.O. No.:

Sample ID: 2-10  
Sample Date Time: 03/20/86 14:10

Lab No.: 86 03/01329  
Date Received: 03/24/86

Parameters

Chloride	145.	mg/l
Conductivity @ 25C	940.	microhm/cm
Nitrogen, nitrate	2.31	mg/l
Oil and Grease	15.	mg/l
pH (lab)	8.8	unitless
Sulfate	288.	mg/l
Solids, total dissolved	696.	mg/l
Solids, total suspended	16.	mg/l
Iron, total	.34	mg/l
Manganese, total	.01	mg/l

Remarks:

Ralph U. Poulsen  
Ralph U. Poulsen, Director

Flow 31.6  
Temp 2°  
pH 8.7  
Cond 860  
D.O. NA

Client : Beaver Creek Coal Company  
 Address : P.O. Box 1378  
 Price, Utah 84501  
 Attn. : Mr. Dan Guy; CC: Mr. Mel Coonrod  
 .O. No.:

Sample ID: 2-1W  
 Sample Date Time: 02/17/86 10:30

Lab No.: 86-WI/00641  
 Date Received: 02/18/86

Parameters

Chloride	10.	mg/l
Conductivity @ 25C	667.	umhos/cm
Nitrogen, nitrate	.85	mg/l
Oil and Grease	-1.	mg/l
pH (lab)	7.6	units
Sulfate	91.	mg/l
Solids, total dissolved	374.	mg/l
Solids, total suspended	6.	mg/l
Iron, total	.04	mg/l
Manganese, total	.01	mg/l

Remarks:

*Ralph U. Poulsen*

Ralph U. Poulsen, Director

Flow 14.2  
 Temp 3°  
 pH 8  
 Cond 700  
 D.O. NA

Client : Beaver Creek Coal Company  
Address : P.O. Box 1378  
          Price, Utah 84501  
Attn. : Mr. Dan Guy; CC: Mr. Mel Coonrod  
P.O. No.:

Sample ID: 2-1W  
Sample Date Time: 01/16/86 11:15

Lab No.: 86-WI/00246  
Date Received: 01/20/86

Parameters

Chloride	133.	mg/l
Conductivity @ 25C	1070.	umhos/cm
Nitrogen, nitrate	.44	mg/l
Oil and Grease	-1.	mg/l
pH (lab)	8.0	units
Sulfate	181.	mg/l
Solids, total dissolved	640.	mg/l
Solids, total suspended	20.	mg/l
Iron, total	.52	mg/l
Manganese, total	.16	mg/l

Remarks:

*Ralph V. Poulsen*

Ralph U. Poulsen, Director

Flow .25 gpm  
Temp 2°  
pH 8.1  
Cond 890  
D.O. \_\_\_\_\_

Beaver Creek Coal Co.  
 P.O. Box 1378  
 Price, UT 84501

Date: July 9, 1986  
 Re: Water Analysis  
 Laboratory No: F2541

Sample Site: 2-1W  
 Date Sampled: 06/17/86 @ 1200  
 Date Received: 06/20/86

Lab pH:..... 8.1  
 Lab Conductivity, umhos/cm @ 25C..... 1160  
 Total Dissolved Solids (180), mg/l..... 968  
 Total Dissolved Solids (calc), mg/l..... 720  
 Total Suspended Solids, mg/l..... 3  
 Oil & Grease, mg/l..... <5  
 Nitrate + Nitrite as "N", mg/l..... 0.15  
 Sodium Adsorption Ratio..... 0.99  
 Total Alkalinity as CaCO<sub>3</sub>, mg/l..... 297  
 Total Hardness as CaCO<sub>3</sub>, mg/l..... 539

Flow 2.4  
 Temp 6°  
 pH 8.1  
 Cond 1100  
 D.O. NA

	mg/l	meq/l
Bicarbonate as HCO <sub>3</sub> .....	362	5.93
Carbonate as CO <sub>3</sub> .....	0	0.00
Chloride.....	111	3.13
Sulfate.....	200	4.17
Calcium.....	109	5.44
Magnesium.....	65	5.34
Potassium.....	5	0.14
Sodium.....	53	2.30

Major Cations..... 13.22  
 Major Anions..... 13.23  
 Cation/Anion Difference..... 0.04

Trace Metals (Total Concentrations), mg/l

Iron..... 0.16  
 Manganese..... 0.24

Beaver Creek Coal Co.  
 P.O. Box 1378  
 Price, UT 84501

Date: May 16, 1986  
 Re: Water Analysis  
 Laboratory No: F1990

Sample Site: 2-1W  
 Date Sampled: 4-23-86  
 Date Received: 4-28-86

Lab pH, s.u.....	8.4
Lab Conductivity, umhos/cm.....	1400
Total Dissolved Solids (180), mg/l.....	842
Total Dissolved Solids (calc), mg/l.....	729
Total Suspended Solids, mg/l.....	4
Oil & Grease, mg/l.....	<5
Nitrate + Nitrite as "N", mg/l.....	1.82
Sodium Adsorption Ratio.....	1.27
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	179
Total Hardness as CaCO <sub>3</sub> , mg/l.....	480

Flow	<u>1.2</u>
Temp	<u>2</u>
pH	<u>8</u>
Cond	<u>1490</u>
D.O.	<u>NA</u>

	MG/L	MEQ/L
Bicarbonate as HCO <sub>3</sub> .....	214	3.51
Carbonate as CO <sub>3</sub> .....	2.2	0.07
Chloride.....	139	3.91
Sulfate.....	249	5.20
Calcium.....	117	5.82
Magnesium.....	46	3.79
Potassium.....	6.8	0.17
Sodium.....	64	2.78

Major Cations.....	12.56
Major Anions.....	12.69
Cation/Anion Difference.....	0.51%

Trace Metals (Total Concentrations), mg/l

Iron.....	0.17
Manganese.....	0.36



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Tel. (505) 326-4737

Sample Site: 2-2W  
Date Sampled: 12/23/86 @ 1339  
Date Received: 12/30/86

Date: 9 January, 1987  
Mine: Gordon Creek  
Lab No: F4405

Lab pH:.....	8.1	Flow	<u>169 gpm</u>
Lab Conductivity, umhos/cm @ 25C.....	737	Temp	<u>2°</u>
Total Dissolved Solids (180), mg/l.....	486	pH	<u>8.1</u>
Total Dissolved Solids (calc), mg/l.....	425	Cond	<u>750</u>
Total Suspended Solids, mg/l.....	3.5	D.O.	<u>NA</u>
Nitrate + Nitrite as "N", mg/l.....	0.48		
Sodium Adsorption Ratio.....	0.16		
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	290		
Total Hardness as CaCO <sub>3</sub> , mg/l.....	398		

	mg/l	meq/l
Bicarbonate as HCO <sub>3</sub> .....	353	5.79
Carbonate as CO <sub>3</sub> .....	0	0.00
Chloride.....	11	0.32
Sulfate.....	106	2.21
Calcium.....	71	3.52
Magnesium.....	54	4.44
Potassium.....	3	0.06
Sodium.....	7	0.31

Major Cations.....	8.33
Major Anions.....	8.32
Cation/Anion Difference.....	0.06 %

Trace Metals (Total Concentrations), mg/l

Iron.....	0.17
Manganese.....	0.02

Sample Site: 2-2W  
Date Sampled: 11/20/86 @ 1030  
Date Received: 12/02/86

Date: 15 October, 1986  
Mine: Gordon Creek #2  
Lab No: F4154

Lab pH:.....	8.2
Lab Conductivity, umhos/cm @ 25C.....	663
Total Dissolved Solids (180), mg/l.....	396
Total Dissolved Solids (calc), mg/l.....	393
Total Suspended Solids, mg/l.....	9.0
Nitrate + Nitrite as "N", mg/l.....	0.50
Sodium Adsorption Ratio.....	0.14
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	276
Total Hardness as CaCO <sub>3</sub> , mg/l.....	369

	mg/l	meq/l		
Bicarbonate as HCO <sub>3</sub> .....	337	5.52		
Carbonate as CO <sub>3</sub> .....	0	0.00		
Chloride.....	11	0.31		
Sulfate.....	86	1.80		
Calcium.....	84	4.20		
Magnesium.....	39	3.17	Flow	<u>96.2</u>
Potassium.....	2	0.05	Temp	<u>2°</u>
Sodium.....	6	0.27		
Major Cations.....		7.69	pH	<u>8.0</u>
Major Anions.....		7.63	Cond	<u>490</u>
Cation/Anion Difference.....		0.39	D.O.	<u>NA</u>

Trace Metals (Total Concentrations), mg/l

Iron..... 0.13  
Manganese..... <0.02

Sample Site: 2-2W  
 Date Sampled: 10/08/86 @ 0932  
 Date Received: 10/14/86

Date: 29 October, 1986  
 Mine: Beaver Creek  
 Lab No: F3771

	Flow	<u>62.7 gpm</u>
	Temp	<u>4°</u>
Lab pH:.....	8.1	
Lab Conductivity, umhos/cm @ 25C.....	591	pH <u>8</u>
Total Dissolved Solids (180), mg/l.....	356	Cond <u>590</u>
Total Dissolved Solids (calc), mg/l.....	356	
Total Suspended Solids, mg/l.....	<1.0	D.O. <u>NA</u>
Nitrate + Nitrite as "N", mg/l.....	0.61	
Sodium Adsorption Ratio.....	0.14	
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	262	
Total Hardness as CaCO <sub>3</sub> , mg/l.....	330	

	mg/l	meq/l
Bicarbonate as HCO <sub>3</sub> .....	320	5.24
Carbonate as CO <sub>3</sub> .....	0	0.00
Chloride.....	9	0.26
Sulfate.....	75	1.56
Calcium.....	67	3.37
Magnesium.....	39	3.23
Potassium.....	2	0.06
Sodium.....	6	0.26
Major Cations.....		6.92
Major Anions.....		7.06
Cation/Anion Difference.....		1.00

Trace Metals (Total Concentrations), mg/l

Iron..... 0.10  
 Manganese..... <0.02

Beaver Creek Coal Co.  
 P.O. Box 1378  
 Price, UT 84501

Date: September 5, 1986  
 Re: Water Analysis  
 Laboratory No: F3328

Sample Site: 2-2W  
 Date Sampled: 08/12/86 @ 0940  
 Date Received: 08/15/86

Flow 160  
 Temp 10°  
 pH 8.1  
 Cond 610  
 D.O. NA

Lab pH:.....	7.9
Lab Conductivity, umhos/cm @ 25C.....	553
Total Dissolved Solids (180), mg/l.....	270
Total Dissolved Solids (calc), mg/l.....	327
Total Suspended Solids, mg/l.....	12
Nitrate + Nitrite as "N", mg/l.....	0.48
Sodium Adsorption Ratio.....	0.14
Total Alkalinity as CaCO3, mg/l.....	232
Total Hardness as CaCO3, mg/l.....	308

	mg/l	meq/l
Bicarbonate as HCO3.....	282	4.63
Carbonate as CO3.....	0	0.00
Chloride.....	9	0.24
Sulfate.....	70	1.46
Calcium.....	69	3.45
Magnesium.....	33	2.71
Potassium.....	2	0.05
Sodium.....	6	0.25

Major Cations.....	6.46
Major Anions.....	6.33
Cation/Anion Difference.....	1.02

Trace Metals (Total Concentrations), mg/l

Iron.....	0.46
Manganese.....	<0.02



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Tel. (505) 326-4737

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: August 15, 1986  
Re: Water Analysis  
Laboratory No: F3099

Sample Site: 2-2W  
Date Sampled: 7-24-86  
Date Received: 7-29-86

Lab pH, s.u.....	8.2	Flow	<u>640</u>
Lab Conductivity, umhos/cm.....	450	Temp	<u>14°</u>
Total Dissolved Solids (180), mg/l.....	316	pH	<u>8.1</u>
Total Dissolved Solids (calc), mg/l.....	279	Cond	<u>390</u>
Total Suspended Solids, mg/l.....	20	D.O.	<u>NA</u>
Nitrate + Nitrite as "N", mg/l.....	0.62		
Sodium Adsorption Ratio.....	0.15		
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	204		
Total Hardness as CaCO <sub>3</sub> , mg/l.....	262		

	MG/L	MEQ/L
Bicarbonate as HCO <sub>3</sub> .....	249	4.08
Carbonate as CO <sub>3</sub> .....	0.0	0.00
Chloride.....	7.4	0.21
Sulfate.....	55	1.14
Calcium.....	62	3.11
Magnesium.....	26	2.14
Potassium.....	1.3	0.03
Sodium.....	5.6	0.25
Major Cations.....		5.52
Major Anions.....		5.43
Cation/Anion Difference.....		0.82%

Trace Metals (Total Concentrations), mg/l

Iron..... 0.30  
Manganese..... <0.02

Beaver Creek Coal Co.  
 P.O. Box 1378  
 Price, UT 84501

Date: July 9, 1986  
 Re: Water Analysis  
 Laboratory No: F2542

Sample Site: 2-2W  
 Date Sampled: 06/17/86 @ 0910  
 Date Received: 06/20/86

Lab pH:.....	8.1	Flow	<u>390</u>
Lab Conductivity, umhos/cm @ 25C.....	467	Temp	<u>3</u>
Total Dissolved Solids (180), mg/l.....	388	pH	<u>8</u>
Total Dissolved Solids (calc), mg/l.....	265	Cond	<u>380</u>
Total Suspended Solids, mg/l.....	63	D.O.	<u>NA</u>
Nitrate + Nitrite as "N", mg/l.....	1.35		
Sodium Adsorption Ratio.....	0.13		
Total Alkalinity as CaCO3, mg/l.....	212		
Total Hardness as CaCO3, mg/l.....	249		

	mg/l	meq/l
Bicarbonate as HCO3.....	258	4.23
Carbonate as CO3.....	0	0.00
Chloride.....	6	0.18
Sulfate.....	36	0.75
Calcium.....	75	3.74
Magnesium.....	15	1.25
Potassium.....	1	0.03
Sodium.....	5	0.20

Major Cations.....	5.22
Major Anions.....	5.16
Cation/Anion Difference.....	0.58

Trace Metals (Total Concentrations), mg/l

Iron.....	0.80
Manganese.....	0.04

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: June 5, 1986  
Re: Water Analysis  
Laboratory No: F2178

Sample Site: 2-2W  
Date Sampled: 5-19-86  
Date Received: 5-22-86

Flow 3 cfs  
Temp 4°  
pH 8.2  
Cond 450  
D.O. NA

Lab pH, s.u.....	8.2
Lab Conductivity, umhos/cm.....	464
Total Dissolved Solids (180), mg/l.....	286
Total Dissolved Solids (calc), mg/l.....	253
Total Suspended Solids, mg/l.....	358
Nitrate + Nitrite as "N", mg/l.....	1.98
Sodium Adsorption Ratio.....	0.14
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	203
Total Hardness as CaCO <sub>3</sub> , mg/l.....	238

	MG/L	MEQ/L
Bicarbonate as HCO <sub>3</sub> .....	247	4.06
Carbonate as CO <sub>3</sub> .....	0.0	0.00
Chloride.....	9.2	0.26
Sulfate.....	29	0.61
Calcium.....	69	3.44
Magnesium.....	16	1.32
Potassium.....	1.4	0.04
Sodium.....	5.1	0.22

Major Cations.....	5.02
Major Anions.....	4.93
Cation/Anion Difference.....	0.90%

Trace Metals (Total Concentrations), mg/l

Iron.....	2.66
Manganese.....	0.10

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: May 16, 1986  
Re: Water Analysis  
Laboratory No: F1991

Sample Site: 2-2W  
Date Sampled: 4-23-86  
Date Received: 4-28-86

Lab pH, s.u.....	8.3
Lab Conductivity, umhos/cm.....	499
Total Dissolved Solids (180), mg/l.....	306
Total Dissolved Solids (calc), mg/l.....	279
Total Suspended Solids, mg/l.....	308
Nitrate + Nitrite as "N", mg/l.....	2.11
Sodium Adsorption Ratio.....	0.15
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	224
Total Hardness as CaCO <sub>3</sub> , mg/l.....	263

Flow	<u>600</u>
Temp	<u>3°</u>
pH	<u>8.1</u>
Cond	<u>500</u>
D.O.	<u>NA</u>

	MG/L	MEQ/L
Bicarbonate as HCO <sub>3</sub> .....	273	4.47
Carbonate as CO <sub>3</sub> .....	0	0.00
Chloride.....	7.2	0.20
Sulfate.....	40	0.82
Calcium.....	70	3.51
Magnesium.....	21	1.74
Potassium.....	1.6	0.04
Sodium.....	5.8	0.25

Major Cations.....	5.54
Major Anions.....	5.49
Cation/Anion Difference.....	0.45%

Trace Metals (Total Concentrations), mg/l

Iron.....	1.21
Manganese.....	0.12

Client : Beaver Creek Coal Company  
 Address : P.O. Box 1378  
           Price, Utah 84501  
 Attn. : Mr. Dan Guy; CC: Mr. Mel Coonrod  
 P.O. No.:

Sample ID: 2-2W  
 Sample Date Time: 01/16/86 10:10

Lab No.: 86-01/00244  
 Date Received: 01/20/86

Parameters

Alkalinity as CaCO3	254.	mg/l
Bicarbonate as CaCO3	254	mg/l
Calcium, dissolved	90.	mg/l
Carbonate as CaCO3	0	mg/l
Chloride	9.	mg/l
Conductivity @ 25C	600.	umhos/cm
Fluoride	.19	mg/l
Hardness as CaCO3	381.	mg/l
Hydroxide as CaCO3	0	mg/l
Magnesium, dissolved	38.	mg/l
Nitrogen, nitrate	.65	mg/l
pH (lab)	8.1	units
Potassium, dissolved	2.	mg/l
SAR in water	.02	
Sodium, dissolved	1.	mg/l
Sulfate	82.	mg/l
Cations (sum)	7.71	meq/l
Anions (sum)	7.05	meq/l
Cation-Anion Balance	4.47	%
Solids, total dissolved	372.	mg/l
Solids, total suspended	8.	mg/l
Iron, total	.02	mg/l
Manganese, total	.01	mg/l

Remarks:

*Ralph V. Poulsen*

Ralph U. Poulsen, Director

Flow 122  
 Temp 1°  
 pH 8.1  
 Cond 480  
 D.O. NA

Client : Beaver Creek Coal Company  
 Address : P.O. Box 1378  
 Price, Utah 84501  
 Attn. : Mr. Dan Guy; CC: Mr. Mel Conrad  
 P.O. No.:

Sample ID: 2-20  
 Sample Date Time: 03/20/86 13:25

Lab No.: 85 401430  
 Date Received: 03/20/86

Parameters

Alkalinity as CaCO3	246.	mg/l
Bicarbonate as CaCO3	246.	mg/l
Calcium, dissolved	84.	mg/l
Carbonate as CaCO3	0.	mg/l
Chloride	7.	mg/l
Conductivity @ 25C	560.	microhm/cm
Fluoride	.28	mg/l
Hardness as CaCO3	354.	mg/l
Hydroxide as CaCO3	0.	mg/l
Magnesium, dissolved	35.	mg/l
Nitrogen, nitrate	.56	mg/l
pH (lab)	8.1	unitless
Potassium, dissolved	2.	mg/l
SAR in water	.17	
Sodium, dissolved	5.	mg/l
Sulfate	82.	mg/l
Cations (sum)	7.34	mg/l
Anions (sum)	6.84	mg/l
Cation-Anion Balance	3.53	%
Solids, total dissolved	356.	mg/l
Solids, total suspended	10.	mg/l
Iron, total	.16	mg/l
Manganese, total	.01	mg/l

Remarks:

Ralph U. Poulsen  
 Ralph U. Poulsen, Director

Flow 146  
 Temp 1°  
 pH 8.1  
 Cond 360  
 D.O. NA



Inter-Mountain  
Laboratories, Inc.

2506 West Main Street  
Farmington, New Mexico 87401  
Tel. (505) 326-4737

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: July 9, 1986  
Re: Water Analysis  
Laboratory No: F2543

Sample Site: 2-3W  
Date Sampled: 06/17/86 @ 1030  
Date Received: 06/20/86

Lab pH:.....	8.2	Flow	<u>690</u>
Lab Conductivity, umhos/cm @ 25C.....	444	Temp	<u>3°</u>
✓ Total Dissolved Solids (180), mg/l.....	386	pH	<u>8</u>
✓ Total Dissolved Solids (calc), mg/l.....	243	Cond	<u>450</u>
✓ Total Suspended Solids, mg/l.....	24	D.O.	<u>NA</u>
✓ Nitrate + Nitrite as "N", mg/l.....	1.85		
Sodium Adsorption Ratio.....	0.11		
✓ Total Alkalinity as CaCO3, mg/l.....	218		
Total Hardness as CaCO3, mg/l.....	241		

	mg/l	meq/l
✓ Bicarbonate as HCO3.....	266	4.36
✓ Carbonate as CO3.....	0	0.00
✓ Chloride.....	4	0.10
✓ Sulfate.....	16	0.33
✓ Calcium.....	76	3.79
✓ Magnesium.....	12	1.02
✓ Potassium.....	1	0.03
✓ Sodium.....	4	0.17
Major Cations.....		5.01
Major Anions.....		4.92
Cation/Anion Difference.....		0.91

Trace Metals (Total Concentrations), mg/l

✓ Iron..... 0.56  
✓ Manganese..... 0.05



2506 West Main Street  
Farmington, New Mexico 87401  
Tel. (505) 326-4737

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: August 15, 1986  
Re: Water Analysis  
Laboratory No: F3100

Sample Site: 2-3W  
Date Sampled: 7-24-86  
Date Received: 7-29-86

Lab pH, s.u.....	8.1
Lab Conductivity, umhos/cm.....	426
Total Dissolved Solids (180), mg/l.....	276
Total Dissolved Solids (calc), mg/l.....	266
Total Suspended Solids, mg/l.....	12
Nitrate + Nitrite as "N", mg/l.....	1.38
Sodium Adsorption Ratio.....	0.12
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	240
Total Hardness as CaCO <sub>3</sub> , mg/l.....	259

Flow	<u>448</u>
Temp	<u>13°</u>
pH	<u>8</u>
Cond	<u>440</u>
D.O.	<u>NA</u>

	MG/L	MEQ/L
Bicarbonate as HCO <sub>3</sub> .....	292	4.79
Carbonate as CO <sub>3</sub> .....	0.0	0.00
Chloride.....	4.6	0.13
Sulfate.....	18	0.38
Calcium.....	81	4.06
Magnesium.....	14	1.12
Potassium.....	1.0	0.03
Sodium.....	4.6	0.20

Major Cations.....	5.41
Major Anions.....	5.30
Cation/Anion Difference.....	1.03%

Trace Metals (Total Concentrations), mg/l

Iron.....	1.21
Manganese.....	0.05



2506 West Main Street  
Farmington, New Mexico 87401  
Tel. (505) 326-4737

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: September 5, 1986  
Re: Water Analysis  
Laboratory No: F3329

Sample Site: 2-3W  
Date Sampled: 08/12/86 @ 1412  
Date Received: 08/15/86

Lab pH:.....	7.9
Lab Conductivity, umhos/cm @ 25C.....	501
Total Dissolved Solids (180), mg/l.....	254
Total Dissolved Solids (calc), mg/l.....	258
Total Suspended Solids, mg/l.....	3
Nitrate + Nitrite as "N", mg/l.....	1.26
Sodium Adsorption Ratio.....	0.12
Total Alkalinity as CaCO3, mg/l.....	244
Total Hardness as CaCO3, mg/l.....	248

Flow	<u>119</u>
Temp	<u>12°</u>
pH	<u>8</u>
Cond	<u>400</u>
D.O.	<u>NA</u>

	mg/l	meq/l
Bicarbonate as HCO3.....	297	4.87
Carbonate as CO3.....	0	0.00
Chloride.....	3	0.09
Sulfate.....	12	0.26
Calcium.....	78	3.89
Magnesium.....	13	1.08
Potassium.....	1	0.03
Sodium.....	4	0.19

Major Cations.....	5.19
Major Anions.....	5.22
Cation/Anion Difference.....	0.29

Trace Metals (Total Concentrations), mg/l

Iron.....	0.93
Manganese.....	0.04



Inter-Mountain  
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Tel. (505) 326-4737

Sample Site: 2-3W  
Date Sampled: 09/23/86 @ 1610  
Date Received: 09/30/86

Date: 28 October, 1986  
Mine: Beaver Creek  
Lab No: F-----

Flow 81.4  
Temp 11°  
pH 8.1  
Cond 500  
D.O. NA

Lab pH:..... 8.0  
Lab Conductivity, umhos/cm @ 25C..... 500  
Total Dissolved Solids (180), mg/l..... 294  
Total Dissolved Solids (calc), mg/l..... 275  
Total Suspended Solids, mg/l..... 8.0  
Nitrate + Nitrite as "N", mg/l..... 1.36  
Sodium Adsorption Ratio..... 0.15  
Total Alkalinity as CaCO3, mg/l..... 245  
Total Hardness as CaCO3, mg/l..... 272

	mg/l	meq/l
Bicarbonate as HCO3.....	299	4.90
Carbonate as CO3.....	0	0.00
Chloride.....	6	0.17
Sulfate.....	24	0.50
Calcium.....	65	3.24
Magnesium.....	27	2.20
Potassium.....	2	0.04
Sodium.....	6	0.24

Major Cations..... 5.72  
Major Anions..... 5.57  
Cation/Anion Difference..... 1.33 5

Trace Metals (Total Concentrations), mg/l

Iron..... 0.45  
Manganese..... 0.04



2506 West Main Street  
Farmington, New Mexico 87401  
Tel. (505) 326-4737

Sample Site: 2-3W  
Date Sampled: 10/08/86 @ 1445  
Date Received: 10/14/86

Date: 29 October, 1986  
Mine: Beaver Creek  
Lab No: F3772

		Flow	<u>47.5</u>
		Temp	<u>6°</u>
Lab pH:.....	8.1	pH	<u>8.1</u>
Lab Conductivity, umhos/cm @ 25C.....	497	Cond	<u>560</u>
Total Dissolved Solids (180), mg/l.....	232	D.O.	<u>NA</u>
Total Dissolved Solids (calc), mg/l.....	270		
Total Suspended Solids, mg/l.....	20		
Nitrate + Nitrite as "N", mg/l.....	1.57		
Sodium Adsorption Ratio.....	0.08		
Total Alkalinity as CaCO3, mg/l.....	262		
Total Hardness as CaCO3, mg/l.....	284		

	mg/l	meq/l
Bicarbonate as HCO3.....	320	5.24
Carbonate as CO3.....	0	0.00
Chloride.....	5	0.15
Sulfate.....	10	0.21
Calcium.....	65	3.23
Magnesium.....	30	2.45
Potassium.....	1	0.02
Sodium.....	3	0.13

Major Cations.....	5.83
Major Anions.....	5.60
Cation/Anion Difference.....	2.01

Trace Metals (Total Concentrations), mg/l

Iron.....	0.20
Manganese.....	<0.02



2506 West Main Street  
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Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: July 9, 1986  
Re: Water Analysis  
Laboratory No: F2544

Sample Site: 2-4W  
Date Sampled: 06/17/86 @ 1120  
Date Received: 06/20/86

Lab pH:.....	8.3	Flow	<u>580</u>
Lab Conductivity, umhos/cm @ 25C.....	398	Temp	<u>4°</u>
Total Dissolved Solids (180), mg/l.....	344	pH	<u>8.3</u>
Total Dissolved Solids (calc), mg/l.....	215	Cond	<u>400</u>
Total Suspended Solids, mg/l.....	15	D.O.	<u>NA</u>
Nitrate + Nitrite as "N", mg/l.....	2.30		
Sodium Adsorption Ratio.....	0.12		
Total Alkalinity as CaCO3, mg/l.....	194		
Total Hardness as CaCO3, mg/l.....	212		

	mg/l	meq/l
Bicarbonate as HCO3.....	236	3.87
Carbonate as CO3.....	0	0.00
Chloride.....	4	0.10
Sulfate.....	12	0.25
Calcium.....	68	3.39
Magnesium.....	10	0.85
Potassium.....	2	0.04
Sodium.....	4	0.17
Major Cations.....		4.45
Major Anions.....		4.38
Cation/Anion Difference.....		0.79

Trace Metals (Total Concentrations), mg/l

Iron.....	0.20
Manganese.....	0.02



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Tel. (505) 326-4737

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: August 15, 1986  
Re: Water Analysis  
Laboratory No: F3101

Sample Site: 2-4W  
Date Sampled: 7-24-86  
Date Received: 7-29-86

Lab pH, s.u.....	8.0
Lab Conductivity, umhos/cm.....	432
Total Dissolved Solids (180), mg/l.....	280
Total Dissolved Solids (calc), mg/l.....	274
Total Suspended Solids, mg/l.....	2
Nitrate + Nitrite as "N", mg/l.....	1.86
Sodium Adsorption Ratio.....	0.11
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	250
Total Hardness as CaCO <sub>3</sub> , mg/l.....	271

Flow	<u>380</u>
Temp	<u>12°</u>
pH	<u>8.1</u>
Cond	<u>480</u>
D.O.	<u>NA</u>

	MG/L	MEQ/L
Bicarbonate as HCO <sub>3</sub> .....	305	5.00
Carbonate as CO <sub>3</sub> .....	0.0	0.00
Chloride.....	3.2	0.09
Sulfate.....	16	0.33
Calcium.....	86	4.31
Magnesium.....	14	1.11
Potassium.....	1.1	0.03
Sodium.....	4.0	0.17
Major Cations.....		5.62
Major Anions.....		5.42
Cation/Anion Difference.....		1.81%

Trace Metals (Total Concentrations), mg/l

Iron.....	0.30
Manganese.....	0.02



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Tel. (505) 326-4737

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: September 5, 1986  
Re: Water Analysis  
Laboratory No: F3324

Sample Site: 2-4W  
Date Sampled: 08/11/86 @ 1314  
Date Received: 08/15/86

Flow 89.5

Lab pH:.....	7.8	Temp	<u>12°</u>
Lab Conductivity, umhos/cm @ 25C.....	604	pH	<u>8</u>
Total Dissolved Solids (180), mg/l.....	376	Cond	<u>550</u>
Total Dissolved Solids (calc), mg/l.....	350	D.O.	<u>NA</u>
Total Suspended Solids, mg/l.....	5		
Nitrate + Nitrite as "N", mg/l.....	<0.01		
Sodium Adsorption Ratio.....	0.27		
Total Alkalinity as CaCO3, mg/l.....	282		
Total Hardness as CaCO3, mg/l.....	331		

	mg/l	meq/l
Bicarbonate as HCO3.....	344	5.64
Carbonate as CO3.....	0	0.00
Chloride.....	9	0.24
Sulfate.....	56	1.17
Calcium.....	59	2.93
Magnesium.....	45	3.68
Potassium.....	2	0.04
Sodium.....	11	0.49

Major Cations.....	7.14
Major Anions.....	7.05
Cation/Anion Difference.....	0.63

Trace Metals (Total Concentrations), mg/l

Iron.....	0.62
Manganese.....	0.02

Sample Site: 2-4W  
 Date Sampled: 09/23/86 @ 1520  
 Date Received: 09/30/86

Date: 28 October, 1986  
 Mine: Beaver Creek  
 Lab No: F3591

Lab pH:..... 7.6  
 Lab Conductivity, umhos/cm @ 25C..... 513  
 Total Dissolved Solids (180), mg/l..... 328  
 Total Dissolved Solids (calc), mg/l..... 284  
 Boron, mg/l..... 0.04  
 Fluoride, mg/l..... 0.15  
 Hydrogen Sulfide, mg/l..... N/S\*  
 Ammonia Nitrogen as N, mg/l..... 0.09  
 Nitrate + Nitrite as N, mg/l..... 1.74  
 Ortho Phosphate, mg/l..... <0.04  
 Sodium Adsorption Ratio..... 0.14  
 Total Alkalinity as CaCO<sub>3</sub>, mg/l..... 253  
 Total Hardness as CaCO<sub>3</sub>, mg/l..... 277

Flow 68.7  
 Temp 14°  
 pH 8  
 Cond 460  
 D.O. NA

	mg/l	meq/l
Bicarbonate as HCO <sub>3</sub> .....	308	5.06
Carbonate as CO <sub>3</sub> .....	0	0.00
Chloride.....	13	0.37
Sulfate.....	20	0.41
Calcium.....	67	3.32
Magnesium.....	27	2.22
Potassium.....	2	0.04
Sodium.....	5	0.23
Major Cations.....		5.82
Major Anions.....		5.84
Cation/Anion Difference.....		0.17 %

Trace Metals (Dissolved Concentrations), mg/l

Aluminum.....	<0.1	Lead.....
Arsenic.....	<0.005	Manganese.....
Barium.....	<0.5	Mercury.....
Cadmium.....	<0.002	Molybdenum.....
Chromium.....	0.04	Nickel.....
Copper.....	<0.01	Selenium.....
Iron.....	<0.05	Zinc.....

\* No Sample Collected

Sample Site: 2-4W  
 Date Sampled: 10/08/86 @ 1230  
 Date Received: 10/14/86

Date: 29 October, 1986  
 Mine: Beaver Creek  
 Lab No: F3773

		Flow	<u>27.8</u>
		Temp	<u>6°</u>
Lab pH:.....	8.2	pH	<u>8.1</u>
Lab Conductivity, umhos/cm @ 25C.....	541	Cond	<u>390</u>
Total Dissolved Solids (180), mg/l.....	274	D.O.	<u>NA</u>
Total Dissolved Solids (calc), mg/l.....	301		
Total Suspended Solids, mg/l.....	10		
Nitrate + Nitrite as "N", mg/l.....	1.58		
Sodium Adsorption Ratio.....	0.11		
Total Alkalinity as CaCO3, mg/l.....	269		
Total Hardness as CaCO3, mg/l.....	305		

	mg/l	meq/l
Bicarbonate as HCO3.....	328	5.38
Carbonate as CO3.....	0	0.00
Chloride.....	6	0.16
Sulfate.....	28	0.58
Calcium.....	67	3.32
Magnesium.....	34	2.78
Potassium.....	1	0.03
Sodium.....	5	0.20

Major Cations.....	6.33
Major Anions.....	6.12
Cation/Anion Difference.....	1.69

Trace Metals (Total Concentrations), mg/l

Iron.....	0.34
Manganese.....	0.02



2506 West Main Street  
Farmington, New Mexico 87401  
Tel. (505) 326-4737

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: July 9, 1986  
Re: Water Analysis  
Laboratory No: F2545

Sample Site: 2-5W  
Date Sampled: 06/17/86 @ 1050  
Date Received: 06/20/86

Lab pH:.....	8.0	Flow	<u>62</u>
Lab Conductivity, umhos/cm @ 25C.....	433	Temp	<u>3°</u>
Total Dissolved Solids (180), mg/l.....	382	pH	<u>8</u>
Total Dissolved Solids (calc), mg/l.....	243	Cond	<u>420</u>
Total Suspended Solids, mg/l.....	12	D.O.	<u>NA</u>
Nitrate + Nitrite as "N", mg/l.....	1.81		
Sodium Adsorption Ratio.....	0.12		
Total Alkalinity as CaCO3, mg/l.....	219		
Total Hardness as CaCO3, mg/l.....	236		

	mg/l	meq/l
Bicarbonate as HCO3.....	267	4.38
Carbonate as CO3.....	0	0.00
Chloride.....	4	0.10
Sulfate.....	16	0.33
Calcium.....	76	3.79
Magnesium.....	11	0.93
Potassium.....	1	0.03
Sodium.....	4	0.18

Major Cations.....	4.93
Major Anions.....	4.94
Cation/Anion Difference.....	0.10

Trace Metals (Total Concentrations), mg/l

Iron.....	0.54
Manganese.....	0.04

Beaver Creek Coal Co.  
 P.O. Box 1378  
 Price, UT 84501

Date: July 9, 1986  
 Re: Water Analysis  
 Laboratory No: F2556

Sample Site: 4-5W  
 Date Sampled: 06/15/86 @ 1130  
 Date Received: 06/20/86

Lab pH:.....	8.2	Flow	<u>186</u>
Lab Conductivity, umhos/cm @ 25C.....	432	Temp	<u>4°</u>
Total Dissolved Solids (180), mg/l.....	318	pH	<u>8</u>
Total Dissolved Solids (calc), mg/l.....	251	Cond	<u>400</u>
Total Suspended Solids, mg/l.....	69	D.O.	<u>NA</u>
Nitrate + Nitrite as "N", mg/l.....	0.34		
Sodium Adsorption Ratio.....	0.16		
Total Alkalinity as CaCO3, mg/l.....	220		
Total Hardness as CaCO3, mg/l.....	234		

	mg/l	meq/l
Bicarbonate as HCO3.....	268	4.39
Carbonate as CO3.....	0	0.00
Chloride.....	2	0.07
Sulfate.....	21	0.44
Calcium.....	84	4.19
Magnesium.....	6	0.49
Potassium.....	1	0.02
Sodium.....	6	0.24

Major Cations.....	4.94
Major Anions.....	4.90
Cation/Anion Difference.....	0.41

Trace Metals (Total Concentrations), mg/l

Iron.....	1.93
Manganese.....	0.06



2506 West Main Street  
Farmington, New Mexico 87401  
Tel. (505) 326-4737

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: August 15, 1986  
Re: Water Analysis  
Laboratory No: F3102

Sample Site: 2-5W  
Date Sampled: 7-24-86  
Date Received: 7-29-86

Lab pH, s.u.....	8.0
Lab Conductivity, umhos/cm.....	424
Total Dissolved Solids (180), mg/l.....	280
Total Dissolved Solids (calc), mg/l.....	262
Total Suspended Solids, mg/l.....	10
Nitrate + Nitrite as "N", mg/l.....	1.29
Sodium Adsorption Ratio.....	0.11
Total Alkalinity as CaCO3, mg/l.....	239
Total Hardness as CaCO3, mg/l.....	259

Flow	<u>49.6</u>
Temp	<u>11°</u>
pH	<u>8</u>
Cond	<u>360</u>
D.O.	<u>NA</u>

	MG/L	MEQ/L
Bicarbonate as HCO3.....	291	4.77
Carbonate as CO3.....	0.0	0.00
Chloride.....	3.2	0.09
Sulfate.....	16	0.33
Calcium.....	82	4.11
Magnesium.....	13	1.07
Potassium.....	1.5	0.04
Sodium.....	4.0	0.17
Major Cations.....		5.39
Major Anions.....		5.19
Cation/Anion Difference.....		1.89%

Trace Metals (Total Concentrations), mg/l

Iron.....	0.33
Manganese.....	<0.02



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Farmington, New Mexico 87401  
Tel. (505) 326-4737

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: September 3, 1986  
Re: Water Analysis  
Laboratory No: F3325

Sample Site: 2-5W  
Date Sampled: 08/11/86 @ 1325  
Date Received: 08/15/86

Lab pH:.....	7.9	Flow	<u>69.2</u>
Lab Conductivity, umhos/cm @ 25C.....	650	Temp	<u>13°</u>
Total Dissolved Solids (180), mg/l.....	374	pH	<u>8.1</u>
Total Dissolved Solids (calc), mg/l.....	344	Cond	<u>590</u>
Total Suspended Solids, mg/l.....	<1	D.O.	<u>NA</u>
Nitrate + Nitrite as "N", mg/l.....	<0.01		
Sodium Adsorption Ratio.....	0.27		
Total Alkalinity as CaCO3, mg/l.....	281		
Total Hardness as CaCO3, mg/l.....	337		

	mg/l	meq/l
Bicarbonate as HCO3.....	343	5.62
Carbonate as CO3.....	0	0.00
Chloride.....	9	0.24
Sulfate.....	60	1.24
Calcium.....	55	2.72
Magnesium.....	49	4.01
Potassium.....	2	0.04
Sodium.....	11	0.49

Major Cations.....	7.26
Major Anions.....	7.10
Cation/Anion Difference.....	1.11 %

Trace Metals (Total Concentrations), mg/l

Iron.....	0.34
Manganese.....	<0.02

Sample Site: 2-5W  
 Date Sampled: 09/23/86 @ 1515  
 Date Received: 09/30/86

Date: 28 October, 1986  
 Mine: Beaver Creek  
 Lab No: F3605

Flow 18.5

Temp 10°

pH 8

Cond 500

D.O. NA

Lab pH:..... 7.9  
 Lab Conductivity, umhos/cm @ 25C..... 517  
 Total Dissolved Solids (180), mg/l..... 306  
 Total Dissolved Solids (calc), mg/l..... 301  
 Total Suspended Solids, mg/l..... 9.0  
 Nitrate + Nitrite as "N", mg/l..... 1.56  
 Sodium Adsorption Ratio..... 0.14  
 Total Alkalinity as CaCO<sub>3</sub>, mg/l..... 258  
 Total Hardness as CaCO<sub>3</sub>, mg/l..... 285

	mg/l	meq/l
Bicarbonate as HCO <sub>3</sub> .....	314	5.15
Carbonate as CO <sub>3</sub> .....	0	0.00
Chloride.....	5	0.15
Sulfate.....	32	0.66
Calcium.....	85	4.26
Magnesium.....	18	1.44
Potassium.....	2	0.04
Sodium.....	5	0.23

Major Cations..... 5.97  
 Major Anions..... 5.96  
 Cation/Anion Difference..... 0.08

Trace Metals (Total Concentrations), mg/l

Iron..... 0.15  
 Manganese..... <0.02



**Inter-Mountain  
Laboratories, Inc.**

2506 West Main Street  
Farmington, New Mexico 87401  
Tel. (505) 326-4737

Sample Site: 2-5W  
Date Sampled: 10/08/86 @ 1320  
Date Received: 10/14/86

Date: 29 October, 1986  
Mine: Beaver Creek  
Lab No: F3774

		Flow	<u>18.7</u>
		Temp	<u>6°</u>
Lab pH:.....	8.0	pH	<u>8.2</u>
Lab Conductivity, umhos/cm @ 25C.....	521	Cond	<u>640</u>
Total Dissolved Solids (180), mg/l.....	304	D.O.	<u>NA</u>
Total Dissolved Solids (calc), mg/l.....	294		
Total Suspended Solids, mg/l.....	86		
Nitrate + Nitrite as "N", mg/l.....	1.39		
Sodium Adsorption Ratio.....	0.12		
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	274		
Total Hardness as CaCO <sub>3</sub> , mg/l.....	298		

	mg/l	meq/l
Bicarbonate as HCO <sub>3</sub> .....	334	5.48
Carbonate as CO <sub>3</sub> .....	0	0.00
Chloride.....	5	0.14
Sulfate.....	21	0.44
Calcium.....	78	3.88
Magnesium.....	25	2.09
Potassium.....	2	0.04
Sodium.....	5	0.20

Major Cations.....	6.21
Major Anions.....	6.06
Cation/Anion Difference.....	1.22

Trace Metals (Total Concentrations), mg/l

Iron.....	1.32
Manganese.....	0.14

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: July 9, 1986  
Re: Water Analysis  
Laboratory No: F2546

Sample Site: 2-6W  
Date Sampled: 06/17/86 @ 1142  
Date Received: 06/20/86

Lab pH:.....	7.9	Flow	<u>18.6</u>
Lab Conductivity, umhos/cm @ 25C.....	477	Temp	<u>4<sup>o</sup></u>
Total Dissolved Solids (180), mg/l.....	402	pH	<u>8</u>
Total Dissolved Solids (calc), mg/l.....	265	Cond	<u>390</u>
Total Suspended Solids, mg/l.....	2	D.O.	<u>NA</u>
Nitrate + Nitrite as "N", mg/l.....	0.98		
Sodium Adsorption Ratio.....	0.13		
Total Alkalinity as CaCO3, mg/l.....	232		
Total Hardness as CaCO3, mg/l.....	251		

	mg/l	meq/l
Bicarbonate as HCO3.....	282	4.63
Carbonate as CO3.....	0	0.00
Chloride.....	8	0.22
Sulfate.....	19	0.39
Calcium.....	84	4.19
Magnesium.....	10	0.82
Potassium.....	1	0.02
Sodium.....	5	0.21
Major Cations.....		5.24
Major Anions.....		5.24
Cation/Anion Difference.....		0.00

Trace Metals (Total Concentrations), mg/l

Iron..... 0.17  
Manganese..... 0.02



2506 West Main Street  
Farmington, New Mexico 87401  
Tel. (505) 326-4737

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: August 15, 1986  
Re: Water Analysis  
Laboratory No: F3103

Sample Site: 2-6W  
Date Sampled: 7-24-86  
Date Received: 7-29-86

Lab pH, s.u.....	8.1
Lab Conductivity, umhos/cm.....	446
Total Dissolved Solids (180), mg/l.....	268
Total Dissolved Solids (calc), mg/l.....	290
Total Suspended Solids, mg/l.....	6
Nitrate + Nitrite as "N", mg/l.....	0.88
Sodium Adsorption Ratio.....	0.13
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	252
Total Hardness as CaCO <sub>3</sub> , mg/l.....	276

Flow	<u>7.2</u>
Temp	<u>8°</u>
pH	<u>8</u>
Cond	<u>380</u>
D.O.	<u>NA</u>

	MG/L	MEQ/L
Bicarbonate as HCO <sub>3</sub> .....	307	5.04
Carbonate as CO <sub>3</sub> .....	0.0	0.00
Chloride.....	7.1	0.20
Sulfate.....	23	0.49
Calcium.....	91	4.52
Magnesium.....	12	1.01
Potassium.....	0.9	0.02
Sodium.....	5.1	0.22

Major Cations.....	5.77
Major Anions.....	5.73
Cation/Anion Difference.....	0.35%

Trace Metals (Total Concentrations), mg/l

Iron.....	0.82
Manganese.....	0.02



2506 West Main Street  
Farmington, New Mexico 87401  
Tel. (505) 326-4737

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: September 5, 1986  
Re: Water Analysis  
Laboratory No: F3332

Sample Site: 2-6W  
Date Sampled: 08/12/86 @ 1222  
Date Received: 08/15/86

Flow 8.9

Temp 12°

Lab pH:.....	7.9	
Lab Conductivity, umhos/cm @ 25C.....	501	pH <u>8</u>
Total Dissolved Solids (180), mg/l.....	258	
Total Dissolved Solids (calc), mg/l.....	290	Cond <u>490</u>
Total Suspended Solids, mg/l.....	1	
Nitrate + Nitrite as "N", mg/l.....	0.80	D.O. <u>NA</u>
Sodium Adsorption Ratio.....	0.14	
Total Alkalinity as CaCO3, mg/l.....	244	
Total Hardness as CaCO3, mg/l.....	281	

	mg/l	meq/l
Bicarbonate as HCO3.....	297	4.87
Carbonate as CO3.....	0	0.00
Chloride.....	8	0.23
Sulfate.....	29	0.61
Calcium.....	82	4.07
Magnesium.....	19	1.54
Potassium.....	1	0.03
Sodium.....	6	0.24

Major Cations.....	5.88
Major Anions.....	5.71
Cation/Anion Difference.....	1.47 :

Trace Metals (Total Concentrations), mg/l

Iron.....	0.56
Manganese.....	0.02

Sample Site: 2-6W  
 Date Sampled: 09/23/86 @1450  
 Date Received: 09/30/86

Date: 28 October, 1986  
 Mine: Beaver Creek  
 Lab No: F3592

Lab pH:.....	7.9	
Lab Conductivity, umhos/cm @ 25C.....	548	
Total Dissolved Solids (180), mg/l.....	372	Flow <u>2.4</u>
Total Dissolved Solids (calc), mg/l.....	290	
Boron, mg/l.....	0.05	Temp <u>9°</u>
Fluoride, mg/l.....	0.14	
Hydrogen Sulfide, mg/l.....	N/S*	pH <u>8.1</u>
Ammonia Nitrogen as N, mg/l.....	0.10	
Nitrate + Nitrite as N, mg/l.....	0.91	Cond <u>610</u>
Ortho Phosphate, mg/l.....	<0.04	
Sodium Adsorption Ratio.....	0.16	D.O. <u>NA</u>
Total Alkalinity as CaCO3, mg/l.....	245	
Total Hardness as CaCO3, mg/l.....	289	

	mg/l	meq/l
Bicarbonate as HCO3.....	298	4.89
Carbonate as CO3.....	0	0.00
Chloride.....	9	0.25
Sulfate.....	28	0.58
Calcium.....	72	3.59
Magnesium.....	27	2.20
Potassium.....	2	0.06
Sodium.....	6	0.27
Major Cations.....		6.11
Major Anions.....		5.72
Cation/Anion Difference.....		3.30 %

Trace Metals (Dissolved Concentrations), mg/l

Aluminum.....	0.04	Lead.....	
Arsenic.....	<0.005	Manganese.....	
Barium.....	<0.5	Mercury.....	
Cadmium.....	0.003	Molybdenum.....	
Chromium.....	0.03	Nickel.....	
Copper.....	<0.01	Selenium.....	
Iron.....	0.21	Zinc.....	

\* No Sample Collected

Sample Site: 2-6W  
 Date Sampled: 10/08/86 @ 1510  
 Date Received: 10/14/86

Date: 29 October, 1986  
 Mine: Beaver Creek  
 Lab No: F3775

		Flow	<u>2.4</u>
		Temp	<u>4°</u>
Lab pH:.....	8.1		
Lab Conductivity, umhos/cm @ 25C.....	517	pH	<u>8.1</u>
Total Dissolved Solids (180), mg/l.....	300	Cond	<u>360</u>
Total Dissolved Solids (calc), mg/l.....	313	D.O.	<u>NA</u>
Total Suspended Solids, mg/l.....	293		
Nitrate + Nitrite as "N", mg/l.....	1.04		
Sodium Adsorption Ratio.....	0.13		
Total Alkalinity as CaCO3, mg/l.....	282		
Total Hardness as CaCO3, mg/l.....	298		

	mg/l	meq/l
Bicarbonate as HCO3.....	343	5.63
Carbonate as CO3.....	0	0.00
Chloride.....	8	0.23
Sulfate.....	27	0.57
Calcium.....	77	3.86
Magnesium.....	26	2.10
Potassium.....	2	0.04
Sodium.....	5	0.23

Major Cations.....	6.23
Major Anions.....	6.43
Cation/Anion Difference.....	1.58

Trace Metals (Total Concentrations), mg/l

Iron.....	1.63
Manganese.....	0.08

Sample Site: 2-7W  
Date Sampled: 11/20/86 @ 1140  
Date Received: 12/02/86

Date: 15 December, 1986  
Mine: Gordon Creek #2  
Lab No: F4155

Lab pH:.....	7.9
Lab Conductivity, umhos/cm @ 25C.....	1120
Total Dissolved Solids (180), mg/l.....	734
Total Dissolved Solids (calc), mg/l.....	731
Total Suspended Solids, mg/l.....	2.0
Nitrate + Nitrite as "N", mg/l.....	0.07
Sodium Adsorption Ratio.....	0.21
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	443
Total Hardness as CaCO <sub>3</sub> , mg/l.....	671

	mg/l	meq/l
Bicarbonate as HCO <sub>3</sub> .....	540	8.85
Carbonate as CO <sub>3</sub> .....	0	0.00
Chloride.....	21	0.58
Sulfate.....	220	4.58
Calcium.....	105	5.23
Magnesium.....	100	8.20
Potassium.....	9	0.24
Sodium.....	13	0.55

Major Cations.....	14.22
Major Anions.....	14.01
Cation/Anion Difference.....	0.74

Trace Metals (Total Concentrations), mg/l

Iron.....	0.08
Manganese.....	<0.02

Flow	<u>1.4 gpm</u>
Temp	<u>4°</u>
pH	<u>8.1</u>
Cond	<u>510</u>
D.O.	<u>NA</u>



2506 West Main Street  
Farmington, New Mexico 87401  
Tel. (505) 326-4737

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: September 5, 1986  
Re: Water Analysis  
Laboratory No: F3333

Sample Site: 2-7W  
Date Sampled: 08/12/86 @ 1110  
Date Received: 08/15/86

Flow 4.9  
Temp 9°  
pH 8.1  
Cond 1360  
D.O. NA

Lab pH:.....	7.6
Lab Conductivity, umhos/cm @ 25C.....	1070
Total Dissolved Solids (180), mg/l.....	620
Total Dissolved Solids (calc), mg/l.....	687
Total Suspended Solids, mg/l.....	7
Nitrate + Nitrite as "N", mg/l.....	<0.01
Sodium Adsorption Ratio.....	0.21
Total Alkalinity as CaCO3, mg/l.....	428
Total Hardness as CaCO3, mg/l.....	637

	mg/l	meq/l
Bicarbonate as HCO3.....	522	8.55
Carbonate as CO3.....	0	0.00
Chloride.....	19	0.55
Sulfate.....	199	4.14
Calcium.....	94	4.67
Magnesium.....	98	8.07
Potassium.....	9	0.24
Sodium.....	12	0.53

Major Cations.....	13.51
Major Anions.....	13.24
Cation/Anion Difference.....	1.01

Trace Metals (Total Concentrations), mg/l

Iron.....	0.3
Manganese.....	<0.02



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Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: July 9, 1986  
Re: Water Analysis  
Laboratory No: F2547

Sample Site: 2-7W  
Date Sampled: 06/17/86 @ 1410  
Date Received: 06/20/86

Lab pH:.....	7.9	Flow	<u>6.4</u>
Lab Conductivity, umhos/cm @ 25C.....	1050	Temp	<u>5°</u>
Total Dissolved Solids (180), mg/l.....	862	pH	<u>8</u>
Total Dissolved Solids (calc), mg/l.....	695	Cond	<u>1000</u>
Total Suspended Solids, mg/l.....	201	D.O.	<u>NA</u>
Nitrate + Nitrite as "N", mg/l.....	0.34		
Sodium Adsorption Ratio.....	0.26		
Total Alkalinity as CaCO3, mg/l.....	428		
Total Hardness as CaCO3, mg/l.....	616		

	mg/l	meq/l
Bicarbonate as HCO3.....	522	8.55
Carbonate as CO3.....	0	0.00
Chloride.....	24	0.68
Sulfate.....	194	4.05
Calcium.....	122	6.09
Magnesium.....	76	6.23
Potassium.....	9	0.22
Sodium.....	15	0.65
Major Cations.....		13.19
Major Anions.....		13.28
Cation/Anion Difference.....		0.34

Trace Metals (Total Concentrations), mg/l

Iron..... 1.62  
Manganese..... 0.04



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Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: June 5, 1986  
Re: Water Analysis  
Laboratory No: F2179

Sample Site: 2-7W  
Date Sampled: 5-19-86  
Date Received: 5-22-86

Flow	9.6
Temp	4°
pH	8
Cond	1000
D.O.	NA

Lab pH, s.u.....	7.7
Lab Conductivity, umhos/cm.....	1050
Total Dissolved Solids (180), mg/l.....	678
Total Dissolved Solids (calc), mg/l.....	680
Total Suspended Solids, mg/l.....	82
Nitrate + Nitrite as "N", mg/l.....	0.23
Sodium Adsorption Ratio.....	0.29
Total Alkalinity as CaCO3, mg/l.....	404
Total Hardness as CaCO3, mg/l.....	597

	MG/L	MEQ/L
Bicarbonate as HCO3.....	493	8.09
Carbonate as CO3.....	0.0	0.00
Chloride.....	28	0.78
Sulfate.....	204	4.26
Calcium.....	92	4.60
Magnesium.....	89	7.34
Potassium.....	9.0	0.23
Sodium.....	16	0.70
Major Cations.....		12.87
Major Anions.....		13.13
Cation/Anion Difference.....		1.00%

Trace Metals (Total Concentrations), mg/l

Iron.....	0.96
Manganese.....	0.03

Sample Site: 2-8W  
 Date Sampled: 11/20/86 @ 1115  
 Date Received: 12/02/86

Date: 15 October, 1986  
 Mine: Gordon Creek #2  
 Lab No: F4156

Lab pH:..... 8.3  
 Lab Conductivity, umhos/cm @ 25C..... 612  
 Total Dissolved Solids (180), mg/l..... 358  
 Total Dissolved Solids (calc), mg/l..... 359  
 Total Suspended Solids, mg/l..... 94  
 Nitrate + Nitrite as "N", mg/l..... 0.01  
 Sodium Adsorption Ratio..... 0.15  
 Total Alkalinity as CaCO3, mg/l..... 304  
 Total Hardness as CaCO3, mg/l..... 346

	mg/l	meq/l
Bicarbonate as HCO3.....	365	5.99
Carbonate as CO3.....	2	0.08
Chloride.....	5	0.15
Sulfate.....	49	1.02
Calcium.....	75	3.72
Magnesium.....	39	3.20
Potassium.....	3	0.09
Sodium.....	6	0.27

Major Cations..... 7.28  
 Major Anions..... 7.24  
 Cation/Anion Difference..... 0.28

Flow 2.6 gpm  
 Temp 1°  
 pH 8.0  
 Cond 600  
 D.O. NA

Trace Metals (Total Concentrations), mg/l

Iron..... 0.88  
 Manganese..... 0.03

Sample Site: 2-8W  
Date Sampled: 10/08/86 @ 1145  
Date Received: 10/14/86

Date: 29 October, 1986  
Mine: Beaver Creek  
Lab No: F3776

	Flow	<u>2.4</u>
	Temp	<u>6°</u>
Lab pH:.....	8.1	
Lab Conductivity, umhos/cm @ 25C.....	594	pH <u>8</u>
Total Dissolved Solids (180), mg/l.....	364	Cond <u>600</u>
Total Dissolved Solids (calc), mg/l.....	364	D.O. <u>NA</u>
Total Suspended Solids, mg/l.....	488	
Nitrate + Nitrite as "N", mg/l.....	0.04	
Sodium Adsorption Ratio.....	0.17	
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	310	
Total Hardness as CaCO <sub>3</sub> , mg/l.....	347	

	mg/l	meq/l
Bicarbonate as HCO <sub>3</sub> .....	378	6.19
Carbonate as CO <sub>3</sub> .....	0	0.00
Chloride.....	6	0.18
Sulfate.....	49	1.03
Calcium.....	65	3.26
Magnesium.....	45	3.67
Potassium.....	6	0.14
Sodium.....	7	0.32
Major Cations.....		7.39
Major Anions.....		7.40
Cation/Anion Difference.....		0.07

Trace Metals (Total Concentrations), mg/l

Iron..... 5.48  
Manganese..... 0.14



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Sample Site: 2-8W  
Date Sampled: 09/23/86 @ 1320  
Date Received: 09/30/86

Date: 28 October, 1986  
Mine: Beaver Creek  
Lab No: F0000

Flow .9  
Temp 10<sup>o</sup>  
pH 8.2  
Cond 600  
D.O. NA

Lab pH:..... 8.2  
Lab Conductivity, umhos/cm @ 25C..... 580  
Total Dissolved Solids (180), mg/l..... 374  
Total Dissolved Solids (calc), mg/l..... 318  
Total Suspended Solids, mg/l..... 126  
Nitrate + Nitrite as "N", mg/l..... 0.10  
Sodium Adsorption Ratio..... 0.19  
Total Alkalinity as CaCO3, mg/l..... 264  
Total Hardness as CaCO3, mg/l..... 308

	mg/l	meq/l
Bicarbonate as HCO3.....	321	5.27
Carbonate as CO3.....	0	0.00
Chloride.....	8	0.22
Sulfate.....	41	0.86
Calcium.....	59	2.96
Magnesium.....	39	3.19
Potassium.....	5	0.14
Sodium.....	8	0.33

Major Cations..... 6.62  
Major Anions..... 6.35  
Cation/Anion Difference..... 2.08

Trace Metals (Total Concentrations), mg/l

Iron..... 0.17  
Manganese..... <0.02



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Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: September 5, 1986  
Re: Water Analysis  
Laboratory No: F3334

Sample Site: 2-8W  
Date Sampled: 08/12/86 @ 1020  
Date Received: 08/15/86

Flow .32  
Temp 9°  
pH 8.1  
Cond 590  
D.O. NA

Lab pH:.....	8.0
Lab Conductivity, umhos/cm @ 25C.....	564
Total Dissolved Solids (180), mg/l.....	340
Total Dissolved Solids (calc), mg/l.....	326
Total Suspended Solids, mg/l.....	46
Nitrate + Nitrite as "N", mg/l.....	0.30
Sodium Adsorption Ratio.....	0.18
Total Alkalinity as CaCO3, mg/l.....	271
Total Hardness as CaCO3, mg/l.....	313

	mg/l	meq/l
Bicarbonate as HCO3.....	331	5.42
Carbonate as CO3.....	0	0.00
Chloride.....	5	0.14
Sulfate.....	54	1.12
Calcium.....	58	2.89
Magnesium.....	41	3.36
Potassium.....	4	0.10
Sodium.....	7	0.32

Major Cations.....	6.67
Major Anions.....	6.68
Cation/Anion Difference.....	0.07

Trace Metals (Total Concentrations), mg/l

Iron.....	1.13
Manganese.....	0.04



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Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: August 15, 1986  
Re: Water Analysis  
Laboratory No: F3104

Sample Site: 2-8W  
Date Sampled: 7-24-86  
Date Received: 7-29-86

Lab pH, s.u.....	8.3
Lab Conductivity, umhos/cm.....	496
Total Dissolved Solids (180), mg/l.....	306
Total Dissolved Solids (calc), mg/l.....	302
Total Suspended Solids, mg/l.....	32
Nitrate + Nitrite as "N", mg/l.....	0.13
Sodium Adsorption Ratio.....	0.19
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	240
Total Hardness as CaCO <sub>3</sub> , mg/l.....	285

Flow	<u>12.3</u>
Temp	<u>11<sup>o</sup></u>
pH	<u>8.1</u>
Cond	<u>460</u>
D.O.	<u>NA</u>

	MG/L	MEQ/L
Bicarbonate as HCO <sub>3</sub> .....	292	4.79
Carbonate as CO <sub>3</sub> .....	0.0	0.00
Chloride.....	7.1	0.20
Sulfate.....	51	1.07
Calcium.....	52	2.60
Magnesium.....	38	3.10
Potassium.....	3.6	0.09
Sodium.....	7.5	0.33

Major Cations.....	6.12
Major Anions.....	6.06
Cation/Anion Difference.....	0.49%

Trace Metals (Total Concentrations), mg/l

Iron.....	0.68
Manganese.....	0.02



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Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: July 9, 1986  
Re: Water Analysis  
Laboratory No: F2548

Sample Site: 2-8W  
Date Sampled: 06/17/86 @ 1220  
Date Received: 06/20/86

Lab pH:.....	8.2	Flow	<u>4.6</u>
Lab Conductivity, umhos/cm @ 25C.....	627	Temp	<u>6°</u>
Total Dissolved Solids (180), mg/l.....	472		
Total Dissolved Solids (calc), mg/l.....	387	pH	<u>8.1</u>
Total Suspended Solids, mg/l.....	41		
Nitrate + Nitrite as "N", mg/l.....	0.41	Cond	<u>600</u>
Sodium Adsorption Ratio.....	0.17		
Total Alkalinity as CaCO3, mg/l.....	290	D.O.	<u>NA</u>
Total Hardness as CaCO3, mg/l.....	364		

	mg/l	meq/l
Bicarbonate as HCO3.....	353	5.79
Carbonate as CO3.....	0	0.00
Chloride.....	8	0.22
Sulfate.....	74	1.53
Calcium.....	85	4.24
Magnesium.....	37	3.03
Potassium.....	3	0.09
Sodium.....	7	0.32
Major Cations:.....		7.68
Major Anions.....		7.54
Cation/Anion Difference.....		0.92

Trace Metals (Total Concentrations), mg/l

Iron..... 0.65  
Manganese..... 0.03



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Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: June 5, 1986  
Re: Water Analysis  
Laboratory No: F2180

Sample Site: 2-8W  
Date Sampled: 5-19-86  
Date Received: 5-22-86

Flow 16.7  
Temp 40  
pH 8  
Cond 600  
D.O. \_\_\_\_\_

Lab pH, s.u.....	7.9
Lab Conductivity, umhos/cm.....	633
Total Dissolved Solids (180), mg/l.....	420
Total Dissolved Solids (calc), mg/l.....	402
Total Suspended Solids, mg/l.....	68
Nitrate + Nitrite as "N", mg/l.....	1.45
Sodium Adsorption Ratio.....	0.16
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	300
Total Hardness as CaCO <sub>3</sub> , mg/l.....	379

	MG/L	MEQ/L
Bicarbonate as HCO <sub>3</sub> .....	366	5.99
Carbonate as CO <sub>3</sub> .....	0.0	0.00
Chloride.....	12	0.34
Sulfate.....	74	1.53
Calcium.....	82	4.08
Magnesium.....	42	3.50
Potassium.....	3.5	0.09
Sodium.....	7.3	0.32
Major Cations.....		7.99
Major Anions.....		7.86
Cation/Anion Difference.....		0.82%

Trace Metals (Total Concentrations), mg/l

Iron..... 1.22  
Manganese..... 0.04



2506 West Main Street  
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Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: May 16, 1986  
Re: Water Analysis  
Laboratory No: F1992

Sample Site: 2-8W  
Date Sampled: 4-23-86  
Date Received: 4-28-86

Lab pH, s.u.....	8.1
Lab Conductivity, umhos/cm.....	610
Total Dissolved Solids (180), mg/l.....	362
Total Dissolved Solids (calc), mg/l.....	355
Total Suspended Solids, mg/l.....	301
Nitrate + Nitrite as "N", mg/l.....	0.55
Sodium Adsorption Ratio.....	0.18
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	274
Total Hardness as CaCO <sub>3</sub> , mg/l.....	330

Flow	<u>196</u>
Temp	<u>12°</u>
pH	<u>8</u>
Cond	<u>560</u>
D.O.	<u>NA</u>

	MG/L	NEQ/L
Bicarbonate as HCO <sub>3</sub> .....	334	5.48
Carbonate as CO <sub>3</sub> .....	0	0.00
Chloride.....	7.7	0.22
Sulfate.....	65	1.35
Calcium.....	70	3.48
Magnesium.....	38	3.11
Potassium.....	3.1	0.08
Sodium.....	7.3	0.32

Major Cations.....	6.99
Major Anions.....	7.05
Cation/Anion Difference.....	0.43%

Trace Metals (Total Concentrations), mg/l

Iron.....	1.40
Manganese.....	0.14



2506 West Main Street  
Farmington, New Mexico 87401  
Tel. (505) 326-4737

Sample Site: 2-9W  
Date Sampled: 09/23/86 @ 1350  
Date Received: 09/30/86

Date: 28 October, 1986  
Mine: Beaver Creek  
Lab No: F

Flow 196

Temp 12°

Lab pH:.....	8.2	pH	<u>8</u>
Lab Conductivity, umhos/cm @ 25C.....	580	Cond	<u>560</u>
Total Dissolved Solids (180), mg/l.....	430	D.O.	<u>NA</u>
Total Dissolved Solids (calc), mg/l.....	322		
Total Suspended Solids, mg/l.....	10		
Nitrate + Nitrite as "N", mg/l.....	0.18		
Sodium Adsorption Ratio.....	0.17		
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	236		
Total Hardness as CaCO <sub>3</sub> , mg/l.....	312		

	mg/l	meq/l
Bicarbonate as HCO <sub>3</sub> .....	287	4.71
Carbonate as CO <sub>3</sub> .....	0	0.00
Chloride.....	10	0.29
Sulfate.....	73	1.53
Calcium.....	58	2.92
Magnesium.....	41	3.33
Potassium.....	2	0.05
Sodium.....	7	0.30

Major Cations.....	6.60
Major Anions.....	6.53
Cation/Anion Difference.....	0.53 :

Trace Metals (Total Concentrations), mg/l

Iron.....	0.12
Manganese.....	<0.02



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Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: July 9, 1986  
Re: Water Analysis  
Laboratory No: F2549

Sample Site: 2-9W  
Date Sampled: 06/16/86 @ 0940  
Date Received: 06/20/86

Lab pH:.....	8.1	Flow	<u>4.6</u>
Lab Conductivity, umhos/cm @ 25C.....	843	Temp	<u>4°</u>
Total Dissolved Solids (180), mg/l.....	616	pH	<u>8</u>
Total Dissolved Solids (calc), mg/l.....	548	Cond	<u>840</u>
Total Suspended Solids, mg/l.....	3	D.O.	<u>NA</u>
Nitrate + Nitrite as "N", mg/l.....	0.62		
Sodium Adsorption Ratio.....	0.33		
Total Alkalinity as CaCO3, mg/l.....	327		
Total Hardness as CaCO3, mg/l.....	494		

	mg/l	meq/l
Bicarbonate as HCO3.....	399	6.54
Carbonate as CO3.....	0	0.00
Chloride.....	32	0.89
Sulfate.....	135	2.82
Calcium.....	112	5.59
Magnesium.....	52	4.30
Potassium.....	5	0.12
Sodium.....	17	0.74
Major Cations.....		10.75
Major Anions.....		10.25
Cation/Anion Difference.....		2.38

Trace Metals (Total Concentrations), mg/l

Iron..... 0.19  
Manganese..... <0.02



2506 West Main Street  
Farmington, New Mexico 87401  
Tel. (505) 326-4737

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: June 5, 1986  
Re: Water Analysis  
Laboratory No: F2181

Sample Site: 2-9W  
Date Sampled: 5-19-86  
Date Received: 5-22-86

Flow 39  
Temp 5°  
pH 8  
Cond 800  
D.O. NA

Lab pH, s.u.....	7.9
Lab Conductivity, umhos/cm.....	791
Total Dissolved Solids (180), mg/l.....	548
Total Dissolved Solids (calc), mg/l.....	524
Total Suspended Solids, mg/l.....	96
Nitrate + Nitrite as "N", mg/l.....	1.03
Sodium Adsorption Ratio.....	0.25
Total Alkalinity as CaCO3, mg/l.....	332
Total Hardness as CaCO3, mg/l.....	477

	MG/L	MEQ/L
Bicarbonate as HCO3.....	405	6.65
Carbonate as CO3.....	0.0	0.00
Chloride.....	27	0.77
Sulfate.....	127	2.64
Calcium.....	95	4.72
Magnesium.....	59	4.82
Potassium.....	4.3	0.11
Sodium.....	12	0.54

Major Cations.....	10.19
Major Anions.....	10.06
Cation/Anion Difference.....	0.64%

Trace Metals (Total Concentrations), mg/l

Iron.....	1.17
Manganese.....	0.12



2506 West Main Street  
Farmington, New Mexico 87401  
Tel. (505) 326-4737

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: May 16, 1986  
Re: Water Analysis  
Laboratory No: F1993

Sample Site: 2-9W  
Date Sampled: 4-23-86  
Date Received: 4-28-86

Lab pH, s.u.....	5.1
Lab Conductivity, umhos/cm.....	791
Total Dissolved Solids (180), mg/l.....	496
Total Dissolved Solids (calc), mg/l.....	464
Total Suspended Solids, mg/l.....	49
Nitrate + Nitrite as "N", mg/l.....	1.65
Sodium Adsorption Ratio.....	0.35
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	246
Total Hardness as CaCO <sub>3</sub> , mg/l.....	400

Flow	<u>3.6</u>
Temp	<u>2<sup>o</sup></u>
pH	<u>8.1</u>
Cond	<u>800</u>
D.O.	<u>NA</u>

	MG/L	MEQ/L
Bicarbonate as HCO <sub>3</sub> .....	300	4.92
Carbonate as CO <sub>3</sub> .....	0	0.00
Chloride.....	40	1.12
Sulfate.....	133	2.78
Calcium.....	68	3.40
Magnesium.....	56	4.59
Potassium.....	4.4	0.11
Sodium.....	16	0.70

Major Cations.....	8.30
Major Anions.....	8.82
Cation/Anion Difference.....	0.11%

Trace Metals (Total Concentrations), mg/l

Iron.....	0.26
Manganese.....	0.04



2506 West Main Street  
Farmington, New Mexico 87401  
Tel. (505) 326-4737

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: July 9, 1986  
Re: Water Analysis  
Laboratory No: F2550

Sample Site: 2-10W  
Date Sampled: 06/17/86 @ 1340  
Date Received: 06/20/86

Lab pH:.....	8.5	Flow	<u>4.7</u>
Lab Conductivity, umhos/cm @ 25C.....	1300	Temp	<u>5°</u>
Total Dissolved Solids (180), mg/l.....	944	pH	<u>8.4</u>
Total Dissolved Solids (calc), mg/l.....	863	Cond	<u>1300</u>
Total Suspended Solids, mg/l.....	20	D.O.	<u>NA</u>
Nitrate + Nitrite as "N", mg/l.....	0.59		
Sodium Adsorption Ratio.....	0.76		
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	405		
Total Hardness as CaCO <sub>3</sub> , mg/l.....	693		

	mg/l	meq/l
Bicarbonate as HCO <sub>3</sub> .....	465	7.62
Carbonate as CO <sub>3</sub> .....	14	0.47
Chloride.....	61	1.73
Sulfate.....	299	6.22
Calcium.....	104	5.19
Magnesium.....	105	8.66
Potassium.....	6	0.15
Sodium.....	46	2.01
Major Cations.....		16.01
Major Anions.....		16.04
Cation/Anion Difference.....		0.09

Trace Metals (Total Concentrations), mg/l

Iron..... 0.29  
Manganese..... 0.03



2506 West Main Street  
Farmington, New Mexico 87401  
Tel. (505) 326-4737

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: June 5, 1986  
Re: Water Analysis  
Laboratory No: F2182

Sample Site: 2-10W  
Date Sampled: 5-19-86  
Date Received: 5-22-86

Flow 2.6  
Temp 3<sup>o</sup>  
pH 8.1  
Cond 1460  
D.O. \_\_\_\_\_

Lab pH, s.u.....	7.9
Lab Conductivity, umhos/cm.....	1200
Total Dissolved Solids (180), mg/l.....	780
Total Dissolved Solids (calc), mg/l.....	732
Total Suspended Solids, mg/l.....	83
Nitrate + Nitrite as "N", mg/l.....	1.06
Sodium Adsorption Ratio.....	0.60
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	395
Total Hardness as CaCO <sub>3</sub> , mg/l.....	615

	MG/L	MEQ/L
Bicarbonate as HCO <sub>3</sub> .....	482	7.90
Carbonate as CO <sub>3</sub> .....	0.0	0.00
Chloride.....	48	1.35
Sulfate.....	227	4.72
Calcium.....	80	4.00
Magnesium.....	101	8.31
Potassium.....	5.3	0.14
Sodium.....	34	1.48
Major Cations.....		13.93
Major Anions.....		13.97
Cation/Anion Difference.....		0.14%

Trace Metals (Total Concentrations), mg/l

Iron.....	0.75
Manganese.....	0.03

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: May 16, 1986  
Re: Water Analysis  
Laboratory No: F1994

Sample Site: 2-10W  
Date Sampled: 4-23-86  
Date Received: 4-28-86

Lab pH, s.u.....	7.0	Flow	<u>1.6</u>
Lab Conductivity, umhos/cm.....	41	Temp	<u>1°</u>
Total Dissolved Solids (180), mg/l.....	25	pH	<u>7.6</u>
Total Dissolved Solids (calc), mg/l.....	22	Cond	<u>61</u>
Total Suspended Solids, mg/l.....	19	D.O.	<u>NA</u>
Nitrate + Nitrite as "N", mg/l.....	0.10		
Sodium Adsorption Ratio.....	0.02		
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	16		
Total Hardness as CaCO <sub>3</sub> , mg/l.....	17		

	MG/L	MEQ/L
Bicarbonate as HCO <sub>3</sub> .....	19	0.31
Carbonate as CO <sub>3</sub> .....	0	0.00
Chloride.....	1.4	0.04
Sulfate.....	3.3	0.07
Calcium.....	6.4	0.32
Magnesium.....	0.2	0.02
Potassium.....	1.1	0.03
Sodium.....	0.3	0.01
Major Cations.....		0.40
Major Anions.....		0.42
Cation/Anion Difference.....		2.44%

Trace Metals (Total Concentrations), mg/l

Iron..... 0.20  
Manganese..... <0.02



2506 West Main Street  
Farmington, New Mexico 87401  
Tel. (505) 326-4737

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: September 5, 1986  
Re: Water Analysis  
Laboratory No: F3335

Sample Site: 2-11W  
Date Sampled: 08/12/86 @ 1040  
Date Received: 08/15/86

Flow 1  
Temp 12°  
pH 8.6  
Cond 860  
D.O. NA

Lab pH:.....	8.6
Lab Conductivity, umhos/cm @ 25C.....	883
Total Dissolved Solids (180), mg/l.....	630
Total Dissolved Solids (calc), mg/l.....	586
Total Suspended Solids, mg/l.....	5
Nitrate + Nitrite as "N", mg/l.....	1.78
Sodium Adsorption Ratio.....	0.34
Total Alkalinity as CaCO3, mg/l.....	264
Total Hardness as CaCO3, mg/l.....	501

	mg/l	meq/l
Bicarbonate as HCO3.....	302	4.96
Carbonate as CO3.....	10	0.32
Chloride.....	30	0.85
Sulfate.....	226	4.70
Calcium.....	72	3.61
Magnesium.....	78	6.41
Potassium.....	5	0.12
Sodium.....	18	0.77

Major Cations.....	10.91
Major Anions.....	10.83
Cation/Anion Difference.....	0.37 *

Trace Metals (Total Concentrations), mg/l

Iron.....	0.36
Manganese.....	<0.02



2506 West Main Street  
Farmington, New Mexico 87401  
Tel. (505) 326-4737

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: August 15, 1986  
Re: Water Analysis  
Laboratory No: P3105

Sample Site: 2-11W  
Date Sampled: 7-24-86  
Date Received: 7-29-86

Lab pH, s.u.....	8.2
Lab Conductivity, umhos/cm.....	815
Total Dissolved Solids (180), mg/l.....	569
Total Dissolved Solids (calc), mg/l.....	538
Total Suspended Solids, mg/l.....	10
Nitrate + Nitrite as "N", mg/l.....	1.50
Sodium Adsorption Ratio.....	0.35
Total Alkalinity as CaCO <sub>3</sub> , mg/l.....	246
Total Hardness as CaCO <sub>3</sub> , mg/l.....	460

Flow	<u>.27</u>
Temp	<u>74°</u>
pH	<u>8.1</u>
Cond	<u>8.60</u>
D.O.	<u>NA</u>

	MG/L	MEQ/L
Bicarbonate as HCO <sub>3</sub> .....	300	4.91
Carbonate as CO <sub>3</sub> .....	0.0	0.00
Chloride.....	30	0.86
Sulfate.....	200	4.16
Calcium.....	69	3.43
Magnesium.....	70	5.77
Potassium.....	4.1	0.10
Sodium.....	18	0.76
Major Cations.....		10.06
Major Anions.....		9.93
Cation/Anion Difference.....		0.65%

Trace Metals (Total Concentrations), mg/l

Iron.....	0.52
Manganese.....	<0.02



2506 West Main Street  
Farmington, New Mexico 87401  
Tel. (505) 326-4737

Beaver Creek Coal Co.  
P.O. Box 1378  
Price, UT 84501

Date: July 9, 1986  
Re: Water Analysis  
Laboratory No: F2551

Sample Site: 2-11W  
Date Sampled: 06/17/86 @ 1300  
Date Received: 06/20/86

Lab pH:.....  
Lab Conductivity, umhos/cm @ 25C.....  
Total Dissolved Solids (180), mg/l.....  
Total Dissolved Solids (calc), mg/l.....  
Total Suspended Solids, mg/l.....  
Nitrate + Nitrite as "N", mg/l.....  
Sodium Adsorption Ratio.....  
Total Alkalinity as CaCO<sub>3</sub>, mg/l.....  
Total Hardness as CaCO<sub>3</sub>, mg/l.....

Flow 7.6  
8.0  
889 Temp 4°  
658  
580 pH 8  
97  
0.61 Cond 900  
0.31  
332 D.O. NA  
522

	mg/l	meq/l
Bicarbonate as HCO <sub>3</sub> .....	404	6.63
Carbonate as CO <sub>3</sub> .....	0	0.00
Chloride.....	30	0.85
Sulfate.....	158	3.29
Calcium.....	122	6.09
Magnesium.....	53	4.34
Potassium.....	3	0.07
Sodium.....	16	0.70

Major Cations..... 11.20  
Major Anions..... 10.77  
Cation/Anion Difference..... 1.96

Trace Metals (Total Concentrations), mg/l

Iron..... 1.02  
Manganese..... 0.04



2506 West Main Street  
 Farmington, New Mexico 87401  
 Tel. (505) 326-4737

Beaver Creek Coal Co.  
 P.O. Box -1378  
 Price, UT 84501

Date: June 5, 1986  
 Re: Water Analysis  
 Laboratory No: F2183

Sample Site: 2-11W  
 Date Sampled: 5-19-86  
 Date Received: 5-22-86

Flow 6.7  
 Temp 30  
 pH 8.1  
 Cond 840  
 D.O. NA

Lab pH, s.u.....	7.9
Lab Conductivity, umhos/cm.....	923
Total Dissolved Solids (180), mg/l.....	584
Total Dissolved Solids (calc), mg/l.....	566
Total Suspended Solids, mg/l.....	96
Nitrate + Nitrite as "N", mg/l.....	0.93
Sodium Adsorption Ratio.....	0.25
Total Alkalinity as CaCO3, mg/l.....	393
Total Hardness as CaCO3, mg/l.....	506

	MG/L	MEQ/L
Bicarbonate as HCO3.....	480	7.87
Carbonate as CO3.....	0.0	0.00
Chloride.....	23	0.66
Sulfate.....	118	2.45
Calcium.....	126	6.26
Magnesium.....	47	3.85
Potassium.....	2.6	0.07
Sodium.....	12.9	0.56

Major Cations.....	10.74
Major Anions.....	10.98
Cation/Anion Difference.....	1.10%

Trace Metals (Total Concentrations), mg/l

Iron.....	1.14
Manganese.....	0.04

2-3W  
CFS

MONTH June, July, August, September & October YEAR 1986

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	
1 4.100	2 3.800	3 3.600	4 3.400	5 3.200	6 3.000	7 2.700	June
1.990	1.863	1.755	1.728	1.701	1.701	1.620	July
.300	.294	.280	.266	.266	.294	.364	August
.299	.266	.234	.221	.195	.221	.221	September
8 2.600	9 2.500	10 2.400	11 2.200	12 2.000	13 1.900	14 1.700	June
1.674	1.593	1.404	1.323	1.269	1.134	1.107	July
.294	.322	.280	.252	.252	.340	.280	August
.169	.182	.221	.234	.195	.221	.234	September
15 1.700	16 1.500	17 1.500	18 1.500	19 1.400	20 1.300	21 1.300	June
1.242	1.566	1.215	1.161	.999	.972	.945	July
.266	.252	.224	.196	.196	.280	.294	August
.208	.221	.169	.169	.169	.156	.156	September
22 1.200	23 1.100	24 1.100	25 1.100	26 1.100	27 .950	28 .890	June
.999	1.134	1.161	.891	.864	.837	.756	July
.364	.476	.300	.294	.266	.238	.224	August
.143	.169	1.300	.611	.507	.429	.442	September
29 .860	30 .800	31 _____					June
.702	.675	.621					July
.308	.364	.364					August
.390	.351	_____					September

2-3W  
CFS

MONTH June, July, August, September, & October

YEAR 1985

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1 2.40 .132 .220 .028 .110	2 2.46 .116 .210 .035 .110	3 2.46 .116 .200 .036 .110	4 2.46 .112 .190 .036 .10	5 2.24 .108 .170 .038 .10	6 2.08 .092 .150 .036 .10	7 1.92 .092 .150 .039 .230
8 1.76 .10 .140 .05 .29	9 1.60 .096 .130 .045 .220	10 1.58 .092 .120 .040 .210	11 1.50 .100 .110 .085 .190	12 1.47 .096 .110 .21 .18	13 1.37 .092 .110 .085 .180	14 1.28 .096 .110 .065 .170
15 1.20 .096 .110 .06 .150	16 1.12 .092 .100 .055 .140	17 1.05 .084 .980 .050 .130	18 .97 .096 .100 .055 .130	19 .91 .14 .110 .435 .130	20 .83 .136 .97 .145 .130	21 .78 .196 .940 .055 .130
22 .76 .20 .88 .080 .130	23 .730 .276 .720 .070 .130	24 .70 .152 .72 .065 .130	25 .80 .116 .89 .060 .130	26 .89 .096 .770 .060 .130	27 .72 .092 .720 .060 .130	28 .62 .116 .710 .055 .120
29 .59 .108 .630 .055 .120	30 .56 .108 .590 .055 .120	31 .092 .57 .120				

June  
July  
August  
September  
October  
  
June  
July  
August  
September  
October

2-3W  
CFS

MONTH June, July, August, September, & October YEAR 1984

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1 2.47 .96 .390 .250	2 2.28 .81 .390 .530	3 2.09 .969 .87 .650	4 2.09 .825 .945 .430	5 1.90 .780 .435 .310	6 1.843 .720 .405 .280	7 1.767 .528 .375 .270
8 1.767 .615 .375 .260	9 1.634 .570 .390 .260	10 1.577 .540 .375 .250	11 1.482 .540 .240 .250	12 1.406 .585 .225 .250	13 1.425 .585 .195 .240	14 1.444 .600 .210 .250
15 1.425 .585 .240 .250	16 1.368 .675 .255 .250	17 1.292 .570 .330 .290	18 1.178 .525 .720 .310	19 1.140 .555 .675 .320	20 1.121 .675 .615 .300	21 1.140 .600 .540 .310
22 1.216 .525 .435 .320	23 1.254 .510 .255 .400	24 1.197 .555 .240 .530	25 1.178 .570 .255 .560	26 1.216 .585 .255 .490	27 1.482 .480 .345 .310	28 1.311 .435 .225 .320
29 1.387 .405 .195 .310	30 1.824 .405 .300 .300	31 1.615 .390				

June (Inaccessible)  
July  
August  
September  
October

2-4W  
CFS

MONTH June, July, August & September

YEAR 1986

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	
1 3.690	2 3.420	3 3.240	4 3.060	5 2.880	6 2.700	7 2.430	June
1.702	1.587	1.495	1.472	1.449	1.449	1.380	July
.220	.210	.200	.190	.190	.210	.260	August
.253	.211	.198	.187	.165	.154	.154	September
8 2.340	9 2.250	10 2.160	11 1.980	12 1.800	13 1.710	14 1.530	June
1.426	1.357	1.196	1.127	1.081	.966	.943	July
.210	.230	.200	.180	.180	.250	.200	August
.143	.154	.187	.198	.165	.154	.198	September
15 1.530	16 1.350	17 1.350	18 1.350	19 1.260	20 1.170	21 1.170	June
1.058	1.334	1.035	.989	.851	.828	.805	July
.190	.180	.160	.140	.140	.200	.210	August
.176	.154	.143	.143	.143	.132	.132	September
22 1.080	23 .990	24 .990	25 .990	26 .990	27 .855	28 .801	June
.851	.966	.828	.759	.736	.713	.644	July
.260	.340	.220	.210	.190	.170	.160	August
.121	.143	1.100	.517	.429	.363	.374	September
29 .774	30 .620	31 _____					June
.598	.575	.529					July
.220	.260	.260					August
.330	.297	_____					

2-4W  
CFS

MONTH June, July, August, September, & October YEAR 1985

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1 2.40 .33 .33 .034 .132	2 2.46 .29 .32 .0366 .132	3 2.46 .29 .30 .0366 .120	4 2.46 .28 .29 .0426 .120	5 2.24 .27 .26 .0468 .120	6 2.08 .23 .24 .0426 .120	7 1.92 .23 .24 .0468 .276
8 1.76 .25 .21 .060 .348	9 1.60 .24 .20 .05 .264	10 1.58 .23 .18 .0468 .252	11 1.5 .25 .15 .104 .228	12 1.47 .24 .15 .25 .216	13 1.37 .25 .15 .102 .216	14 1.28 .24 .15 .078 .204
15 1.20 .24 .15 .072 .180	16 1.12 .23 .15 .066 .168	17 1.05 .21 .15 .060 .156	18 .97 .24 .15 .066 .156	19 .91 .35 .15 .52 .156	20 .83 .34 .15 .174 .156	21 .78 .49 .14 .114 .156
22 .76 .50 .13 .096 .156	23 .73 .69 .11 .096 .156	24 .70 .38 .11 .078 .156	25 .80 .29 .13 .072 .156	26 .89 .24 .12 .072 .156	27 .72 .23 .11 .072 .144	28 .62 .29 .11 .066 .144
29 .59 .27 .10 .066 .144	30 .56 .27 .09	31 .25 .08				

June  
July  
August  
September  
October  
  
June  
July  
August  
September  
October

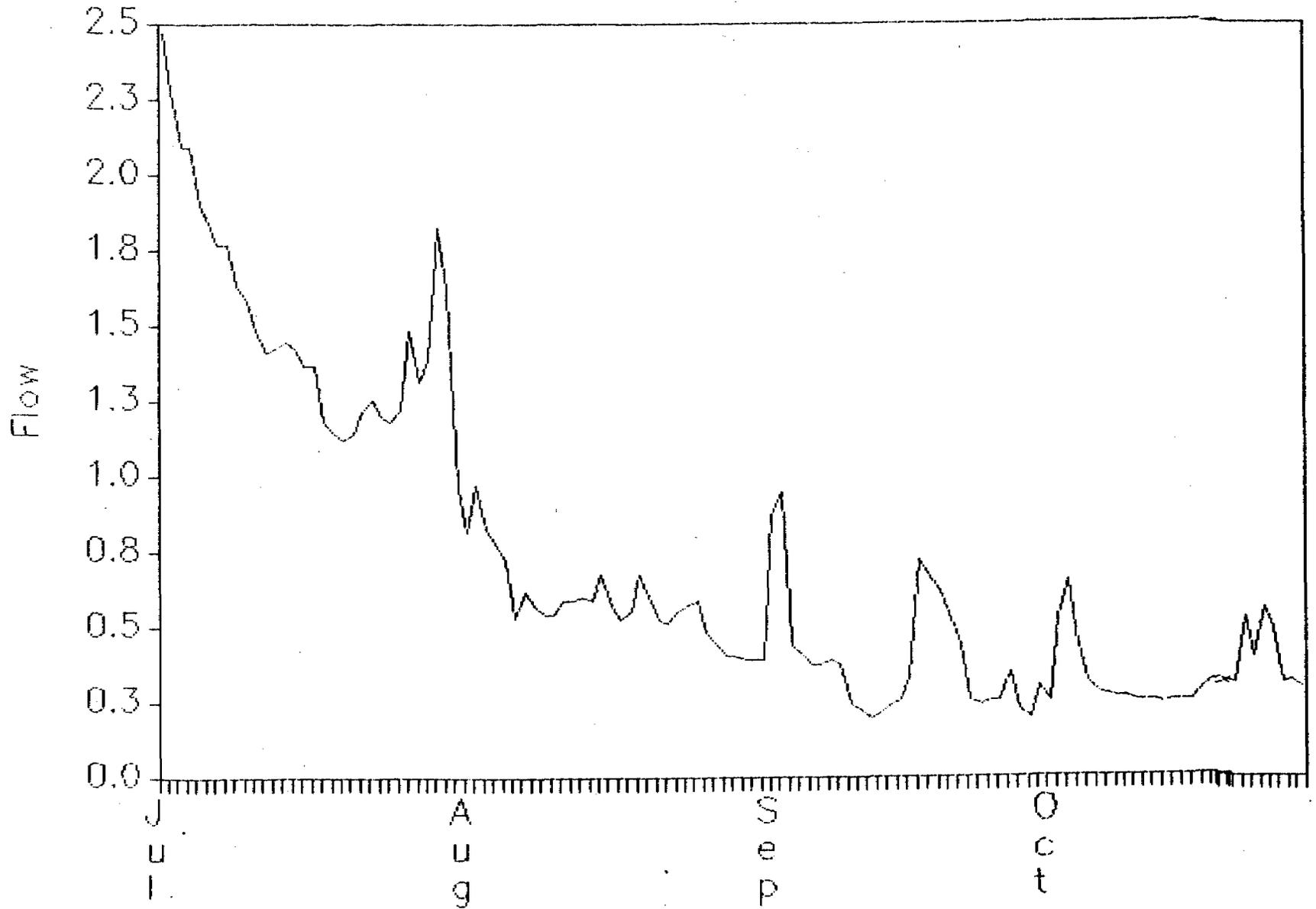
2.4W  
CES

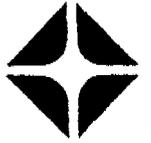
MONTH June, July, August, September & October YEAR 1984

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1 2.21 .89 .312 .150	2 2.04 .756 .312 .318	3 1.87 .71 .696 .390	4 1.87 .77 .756 .258	5 1.70 .728 .348 .186	6 1.65 .672 .324 .168	7 1.58 .616 .312 .162
8 1.46 .574 .312 .156	9 1.41 .532 .312 .156	10 1.33 .504 .312 .150	11 1.26 .504 .312 .150	12 1.27 .546 .192 .150	13 1.29 .546 .192 .144	14 1.27 .56 .156 .150
15 1.22 .546 .168 .150	16 1.16 .630 .192 .150	17 1.11 .532 .204 .174	18 1.05 .490 .264 .186	19 1.02 .518 .576 .192	20 1.00 .630 .540 .180	21 1.02 .560 .492 .186
22 1.08 .490 .432 .192	23 1.12 .476 .348 .240	24 1.07 .518 .204 .318	25 1.05 .532 .192 .336	26 1.08 .546 .204 .294	27 1.33 .448 .204 .186	28 1.17 .406 .276 .192
29 1.24 .378 .180 .186	30 1.63 .378 .156 .180	31 1.45 .364 .240 .180				

June (Inaccessible)  
July  
August  
September  
October

Flow Rates 2-3W  
1984

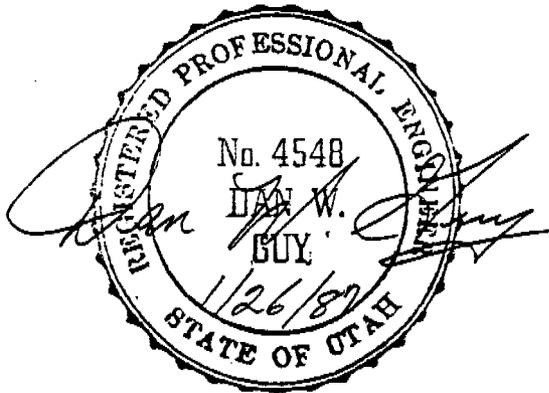




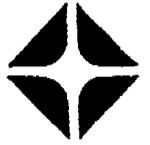
Date: January 26, 1987  
Subject: Certification of Sediment Ponds

From/Location: D.W. Guy  
To/Location: File

I, Dan W. Guy, a registered professional engineer State of Utah No. 4548, do hereby certify that the sediment control pond at the Gordon Creek No. 2 Mine (designated Pond No. 2) has been constructed in accordance with the plan and design criteria set forth in the approved Mining and Reclamation Plan.

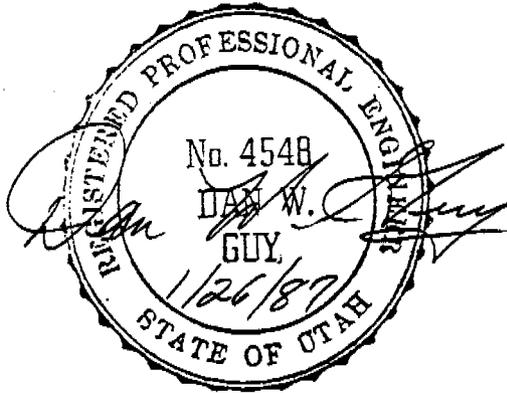


Utah Registration Number  
(Seal) Signature/Date



Date: January 26, 1987  
Subject: Certification of Sediment Ponds  
  
From/Location: D.W. Guy  
To/Location: File

I, Dan W. Guy, a registered professional engineer State of Utah No. 4548, do hereby certify that the sediment control pond at the Gordon Creek No. 2/7 Mine (designated Pond No. 7A) has been constructed in accordance with the plan and design criteria set forth in the approved Mining and Reclamation Plan.

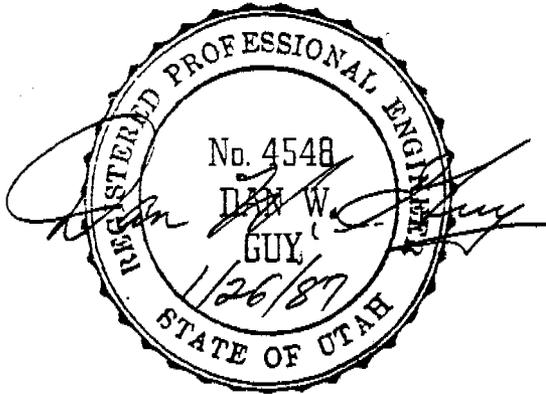


Utah Registration Number  
(Seal) Signature/Date



**Date:** January 26, 1987  
**Subject:** Certification of Sediment Ponds  
  
**From/Location:** D.W. Guy  
**To/Location:** File

I, Dan W. Guy, a registered professional engineer State of Utah No. 4548, do hereby certify that the water storage pond at the Sweets Canyon Water Truck Fill Area has been constructed in accordance with the plan and design criteria set forth in the approved Mining and Reclamation Plan.



Utah Registration Number  
(Seal) Signature/Date

GORDON CREEK NO. 2/7 MINES

1986

PRECIPITATION DATA

BEAVER CREEK COAL COMPANY

RAIN-GAUGE CHART

LOCATION #2 Mine

DATE	GAUGE READING	TIME INTERVAL	MEASURED BY	REMARKS
7/16/86	1.26	7:00 AM	Shila	
7/17	0.04	7:36 AM	P.A.	
7-21	no rain		P.A.	
7-22	0.28	5:24	Pat	
7-23	0.03	3:40 P.M.	Pat	
7-24	0.06	5:10 P.M.	Pat	
7-28	0.07	3:40 P.M.	Pat	
7-29	no rain		Pat	
7-30	no rain		Pat	
7-31	no rain		Pat	
8-4	"		Pat	
8-5	"		Pat	
8-6	"		Pat	
8-7	0.04	9:10 A.M.	Pat	
8-11	0.06	2:15 P.M.	Pat	
8-12	0.09	10:30 A.M.	Pat	
8-13	0.05	2:15 P.M.	Pat	
8-18	no rain		Pat	
8-19	0.28	5:25	Pat	
8-20	0.20	5:10	Pat	
8-21	0.46	5:50	Pat	
8-22 to 9-2	1.01	8:05	Pat	
9-3	no rain	1:37	Pat	
9-4	no rain	2:10	Pat	
9-15	.45	1:25 pm	Butch	
9/16	0	1:10 P.M.	Butch	
9/17	0	7: P.M.	Butch	



BEAVER CREEK COAL COMPANY

RAIN GAUGE CHART

LOCATION #7 Mine

DATE	GAUGE READING	TIME INTERVAL	MEASURED BY	REMARKS
7/16/86	2.70	7:08 AM	Alba	
7/17	0.03	7:45 AM	P.A.	
7-21	no rain	<del>7:00 AM</del>	P.A.	
7-22	0.35	5:18 PM	Pat	
7-23	0.02	3:30 PM	Pat	
7-24	0.05	5:15 PM	Pat	
7-28	0.06	3:30 PM	Pat	
7-27	no rain		Pat	
7-30	11		Pat	
7-31	12		Pat	
8-4	11		Pat	
8-5	11		Pat	
8-6	11			
8-7	0.03	9 AM	Pat	
8-11	0.08	2 P.M.	Pat	
8-12	0.09	10:25 A.M.	Pat	
8-13	0.06	2:10 P.M.	Pat	
8-18	no rain		Pat	
8-19	0.27	5:17 PM	Pat	
8-20	0.13	5:00 P.M.	Pat	
8-21	0.45	5:40 P.M.	Pat	
8-22/9-2	0.95	8:00 A.M.	Pat	
9-3	no rain	1:53	Pat	
9-4	no rain	2:05	Pat	
9/15	11	1:30 PM	Butch	
9/16	0	1:00 PM	Butch	
9/17	0	7:00 PM	R. H. L.	



GORDON CREEK NO. 2/7 MINES

1986

SUBSIDENCE MONITORING

Subsidence Monitoring  
For  
Gordon Creek #2 Mine / Beaver Creek

<u>Station</u>	<u>Orig. Elev.</u>	<u>Survey Elev.</u>	<u>*Changes</u>		<u>Remarks</u>
	<u>7/29/86</u>	<u>10/27/86</u>	<u>Latest</u>	<u>Acc.</u>	
Sweets	9174.513	9174.513	-	-	Control
"H"	8849.120	8849.120	-	-	"
"B"	8241.927	8242.048	+0.121	+0.121	
"A"	8653.167	8653.510	+0.343	+0.343	
B-9	8409.744	8409.870	+0.126	+0.126	
B-10	8792.567	8792.619	-	-	
B-8	8893.432	8893.356	-	-	
B-7	8635.952	8635.884	-	-	
B-6	8652.996	8652.852	-0.144	-0.144	
B-5	8590.990	8590.851	-0.139	-0.139	
B-4	8594.970	8594.822	-0.148	-0.148	
B-3	8571.868	8571.696	-0.172	-0.172	
B-2	8557.768	8557.610	-0.158	-0.158	
B-1	8542.205	8542.053	-0.152	-0.152	

Note: No visible subsidence effects were noted during the field survey.

\* Change shown only if greater than 0.1'.

Subsidence Monitoring  
For  
Gordon Creek #7 Mine

Station	Orig. Elev.	Survey Elev.		*Changes		Remarks
	9/24/86	6/12/86	10/14/86	Latest	Acc.	
Sweets	9174.513	9174.513	9174.513	-	-	Control
"H"	8849.120	8849.120	8849.120	-	-	Control
"I"	9040.049	9039.714	9039.697	-0.017	-0.352	
Sub -1	8295.284	8295.278	8295.312	-	-	
Sub -2	8416.227	8416.194	8416.206	-	-	
Sub -4	9042.727	9042.740	9042.712	-	-	
Sub -5	9220.773	9221.004	9221.044	+0.040	+0.271	
Sub -6	8649.193	8646.524	8646.472	-0.052	-2.721	Minor Slump
Sub -7	8724.159	8723.478	8723.318	-0.160	-0.841	
Sub -8	8967.402	8966.790	8966.676	-0.114	-0.726	
Sub -9	8901.147	8900.433	8900.008	-0.425	-1.139	
Sub -10	8864.970	8864.087	8863.691	-0.396	-1.279	Visible cracks along road by point 6/12/86
Sub -11	9050.850	9050.872	9050.720	-0.152	-0.130	
Sub -12	8977.577	8977.526	8977.341	-0.185	-0.236	
Sub -13	8887.506	8887.528	8887.329	-0.199	-0.177	
Sub -14	9059.611	9059.614	9059.575	-	-	
Sub -15	9000.420	9000.449	9000.371	-	-	
Syb -17	8905.849	8905.630	8905.590	-0.040	-0.259	
Sub -18	8622.317	8662.097	8662.031	-0.066	-0.286	
Sub -19	9098.256	9097.999	9097.747	-0.252	-0.509	
Sub -20	8908.330	8908.057	8908.060	+0.003	-0.270	
Sub -21	8755.014	8754.819	8754.730	-0.089	-0.284	
Sub -22	8757.128	8756.914	8756.907	-0.007	-0.221	
Sub -23	8788.448	8788.409	8788.426	-	-	
Sub -24	8762.659	8762.729	8762.599	-	-	

Note: Visible subsidence effects noted during the field survey are noted above. Locations are shown on the attached map.

\* Change shown only if greater than 0.1'.

GORDON CREEK NO. 2/7 MINES

1986

REVEGETATION DATA

RECEIVED MAY 12 1986

May 6, 1986

TO: Files

FROM: Kathryn M. Mutz, Reclamation Biologist *Kmm*

RE: Supplemental Tree Plantings at Huntington #4  
Reclamation, INA/D15/D04, Folder #13 and Gordon Creek  
#2 Mine, ACT/D07/D16, Folder #13

During the week of April 28, 1986 I discussed planting trees at the Huntington #4 and Gordon Creek #2 mines with Dan Guy of Beaver Creek Coal Company and Tom Wright, the Inspector assigned to both projects. Dan suggested, and Tom and I agreed, that the following would be beneficial additions to the vegetation of the sites:

1. Huntington #4: Approximately 100 Ponderosa Pine seedlings should be planted immediately, including about 75 on the lower pad area and 25 on the upper road.
2. Gordon Creek #2: Approximately 200 Aspen and 30 Douglas Fir seedlings would be planted when weather permits on a revegetated terraced area adjacent to the road at #2 Mine. The terraced area may be disturbed during final reclamation of the site but the trees should contribute to stability of the terraces in the mean time. It may be possible to transplant some of the survivors during reclamation.

Care will be taken at both sites to avoid unnecessary disturbance of these seeded areas.

Both Tom and I appreciate Beaver Creek's interest in and efforts to enhance the environment at these two mines.

cc: D. Guy, Beaver Creek Coal Co.  
J. Whitehead  
T. Wright

GORDON CREEK NO. 2/7 MINES

PERMIT STIPULATION STATUS



August 27, 1984

Mr. J. A. Herickhoff  
General Manager  
Beaver Creek Coal Company  
P. O. Box 1378  
Price, Utah 84501

Dear Mr. Herickhoff:

RE: State Permit Approval, Beaver Creek Coal Company, Gordon  
Creek #2 Mine, ACT/007/016, #2, #4 and #6, Carbon County,  
Utah

The Division has received a signed copy of the Office of Surface Mining's permit with conditions for the above referenced mine, thereby indicating that Beaver Creek Coal Company accepts and will comply with all conditions and time frames set forth in the permit. A signed and executed bond in the amount of \$461,638.50 and payable to both the State of Utah and the United States of America has also been received.

Therefore, the State of Utah hereby issues Final Permit Approval for the Gordon Creek #2 Mine at this time. Consider this letter to be the Permanent Coal Regulatory Program Permit for the above referenced mine. This permit is issued in conjunction with the special conditions contained in Attachment A of the Federal Permit UT-0010, 8/84 and the additional permit conditions required by the Utah Coal Mining and Reclamation Permanent Program, Chapter I (UCA 40-10-1 et seq.), Section UMC 766.29 (appended to this letter). Please assure that all conditions with time deadlines for completion are fulfilled utilizing the August 27, 1984 as the permit approval date.

Page Two

Mr. J. A. Herickhoff

ACT/D07/016

August 27, 1984

The Division greatly appreciates the cooperation and enthusiasm your staff has shown in working with us during the permitting process, and we look forward to dealing with your company in the future.

Best regards,



Dianne R. Nielson  
Director

MMB:btb

cc: Dan Guy  
Robert Hagen  
Allen Klein  
Steve Manger  
Ron Daniels  
Jim Smith  
Mary Boucek  
Joe Helfrich  
Steve Cox

88130-50 & 51

UMC 786.29 Conditions Of Permits: Environment, Public Health, And Safety

Each permit issued by the Division shall ensure and contain specific conditions requiring that the-

(a) Permittee shall take all possible steps to minimize any adverse impact to the environment or public health and safety resulting from non-compliance with any term or conditions of the permit, including, but not limited to:

(1) Any accelerated or additional monitoring necessary to determine the nature and extent of noncompliance and the results of the noncompliance;

(2) Immediate implementation of measures necessary to comply; and

(3) Warning, as soon as possible after learning of such noncompliance, any person whose health and safety is in imminent danger due to the non-compliance.

(b) The permittee shall dispose of solids, sludge, filter backwash, or pollutants removed in the course of treatment or control of waters or emissions to the air in the manner required by Subchapter K of this Chapter, the regulatory program, and which prevents violation of any other applicable State or Federal law.

(c) The permittee shall conduct its operations-

(1) In accordance with any measures specified in the permit as necessary to prevent significant, imminent environmental harm to the health or safety of the public; and,

(2) Utilizing any methods specified in the permit by the Division in approving alternative methods of compliance with the performance standards of the Act and the regulatory program, in accordance with the provisions of the Act, UMC 786.19(d), and Subchapter K.



United States Department of the Interior

OFFICE OF SURFACE MINING

Reclamation and Enforcement

BROOKS TOWERS

1020 15TH STREET

DENVER, COLORADO 80202

Aug 27, 1984

Mr. Herickhoff  
Beaver Creek Coal Company  
P.O. Box AU  
Price, Utah 84501

Dear Mr. Herickhoff:

Enclosed is the Gordon Creek No. 2 Mine permit with conditions. This permit will become effective only when the Office of Surface Mining (OSM) has received a copy of the bond in the amount of \$461,638.00 payable to both the State of Utah and the United States of America and OSM has received a copy of this permit signed and dated by the permittee.

Please read the permit to be sure you understand the requirements and conditions. Pursuant to 30 CFR 775.11, Beaver Creek Coal Company will have 30 days from the date of official notification to appeal the Director's decision on the application.

Also enclosed is a copy of the newspaper notice we are sending to the The Sun-Advocate, Carbon County, Utah to be published as soon as possible. When published, this notice will constitute official notification of our action. Any person with an interest which is or may be adversely affected may request a hearing on the reasons for the final decision within 30 days from the date that notice is published.

The permit has been provided in duplicate, so you can retain one copy with original signatures and return one copy with original signatures to us as an expressed acknowledgement that you have read and understood it. The complete decision package is available upon request.

The Assistant Secretary for Land and Minerals Management approved the mining plan on August 24, 1984. The enclosed permit has been determined to be consistent with this plan.

If you have any questions, please feel free to call either me at (303) 844-5656 or Mark Humphrey at (303) 844-3806.

Sincerely,



Allen D. Klein  
Administrator  
Western Technical Center

Enclosures

cc: Mr. Jackson Moffitt  
Bureau of Land Management, (MMS)

Mr. Gene Nodine  
Bureau of Land Management

Dr. Dianne Nielson  
Utah Division Of Oil Gas and Mining

Mr. Robert Hagen  
Albuquerque Field Office  
Office of Surface Mining

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
OFFICE OF SURFACE MINING

This permit, UT-0010, 8/84 which incorporates Utah Permit ACT/007/016, is issued for the United States of America by the Office of Surface Mining (OSM) to:

Beaver Creek Coal Company  
P.O. Box AU  
Price, Utah 84501

for the Gordon Creek No.2 Mine. Beaver Creek Coal Company is the lessee of Federal coal lease U8319 and U-47975. The permit is not valid until a performance bond is filed with the OSM in the amount of \$461,638.00, payable to the United States of America and the State of Utah, and the OSM has received a copy of this permit signed and dated by the permittee.

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

Sec. 2 The permittee is authorized to conduct surface coal mining and reclamation operations on Federal lands (as shown on ownership map) within the permit area at the Gordon Creek No. 2 Mine situated in the State of Utah, Carbon County, and located:

T. 13 S., R. 7 E., S.L.M.; sec. 12, E1/2, E1/2W1/2; sec. 13, E1/2, E1/2W1/2, sec. 24, N1/2NE1/4, NE1/4NW1/4;

T. 13 S., R. 8 E., S.L.M.; sec. 7, lots 3 and 4, SE1/4SW1/4; sec. 17, SW1/4SW1/4, Portions of NW1/4SW1/4, Portions of SE1/4SW1/4, Portions of NW1/4SW1/4; sec. 18 lots 1, 2, 3, and 4, E1/2W1/2, W1/2E1/2, E1/2SE1/4, SE1/4NE1/4; sec. 19, lots 1, 2, and 3, NE1/4, E1/2NW1/4, NE1/4SW1/4, NW1/4SE1/4;

and to conduct surface coal mining and reclamation operations on the foregoing described property subject to the conditions of the leases, the approved mining plan, and Utah State permit ACT/007/016, issued concurrently with this permit (UT-0010, 8/84), including all conditions, and all other applicable conditions, laws and regulations.

- Sec. 3 This permit is issued for a term of 5 years commencing on the date the permit is signed by the permittee, except that this permit will terminate if the permittee has not begun the surface coal mining and reclamation operations covered herein within 3 years of the effective date.
- Sec. 4 The permit rights may not be transferred, assigned, or sold without the approval of the Director, OSM. Request for transfer, assignment, or sale of permit rights must be done in accordance with 30 CFR 740.13(e).
- Sec. 5 The permittee shall allow the authorized representatives of the Secretary, including, but not limited to, inspectors, fee compliance officers, and the Utah Division of Oil, Gas, and Mining without advance notice or a search warrant, upon presentation of appropriate credentials, and without delay to:
- a. Have the rights of entry provided for in 30 CFR 842.13 and UMC 842.13; and,
  - b. Be accompanied by private persons for the purpose of conducting an inspection in accordance with 30 CFR 842 and UMC 842 when the inspection is in response to an alleged violation reported by the private person.
- Sec. 6 The permittee shall conduct surface coal mining and reclamation operations only on those lands specifically designated as within the permit area on the maps submitted in the mining plan and permit application and approved for the term of the permit and which are subject to the bond.
- Sec. 7 The permittee shall take all possible steps to minimize any adverse impact to the environment or public health and safety resulting from noncompliance with any term or condition of this permit, including, but not limited to:
- a. Any accelerated or additional monitoring necessary to determine the nature and extent of noncompliance and the results of the noncompliance;
  - b. Immediate implementation of measures necessary to comply; and
  - c. Warning, as soon as possible after learning of such noncompliance, any person whose health and safety is in imminent danger due to the noncompliance.

- Sec. 8 The permittee shall dispose of solids, sludge, filter backwash, or pollutants removed in the course of treatment or control of waters or emissions to the air in the manner required by the approved Utah State Program and the Federal Lands Program and which prevents violation of any other applicable State or Federal law.
- Sec. 9 The permittee shall conduct its operations:
- a. In accordance with any measures specified in the permit as necessary to prevent significant, imminent environmental harm to the health or safety of the public; and
  - b. Utilizing any methods specified within the permit by Utah Division of Oil, Gas, and Mining and OSM in approving alternative methods of compliance with the performance standards of the Act, the approved Utah State Program, the Federal Lands Program, UMC 786.19(m), and Subchapter K.
- Sec. 10 The permittee shall provide the names, addresses, and telephone numbers of persons responsible for operations under the permit to whom notices and orders are to be delivered.
- Sec. 11 The permittee shall comply with the provisions of the Water Pollution Control Act (33 U.S.C. 1151 et seq.) and the Clean Air Act (42 U.S.C. 7401 et seq.).
- Sec. 12 Upon expiration, this permit may be renewed for areas within the boundaries of the existing permit in accordance with the Act, the approved Utah State Program and the Federal Lands Program.
- Sec. 13 If during the course of mining operations previously unidentified cultural resources are discovered, the applicant shall ensure that the site(s) is not disturbed and shall notify OSM. The operator shall ensure that the resource(s) is properly evaluated in terms of National Register Eligibility Criteria (36 CFR 60.6). Should a resource be found eligible for listing in consultation with the OSM, the land managing agency (if the site is located on Federal Lands), and the State Historic Preservation Officer (SHPO), the operator shall confer with and obtain the approval of these agencies concerning the development and implementation of mitigation measures.

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

Sec. 15 SPECIAL CONDITIONS - In addition to the general obligations and of performance set out in the leases, Utah State permit (ACT/007/016) and this permit, the permittee shall comply with the special conditions of Utah State permit (ACT/007/016) and the conditions appended hereto as Attachment A.

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

THE UNITED STATES OF AMERICA

By: Allen D. Klein

8/27/84  
Date

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

John H. Henschel  
Authorized Representative of  
the Permittee

S. 27-84

Attachment A

Special Conditions

- ✓ 1. The permittee shall, within 30 days of the effective date of this permit, provide acceptable measures (accompanied by supporting calculations) which will be used for erosion protection for undisturbed ditch DU-3. If the regulatory authority notifies the permittee that these measures are not acceptable, the permittee must submit revised plans within 30 days of notification, and adequate protection measures for DU-3 must be in place within 90 days of approval.
- ✓ 2. Based on the results of the bedrock study the permittee has performed, the permittee will submit design and installation measures, within 30 days of the effective date of this permit, for the erosion protection measures in the Bryner Canyon bypass ditch and the disturbed area ditch which parallels it at the points identified in the compliance section of UMC 817.47. The design and installation measures submitted will contain flow velocity calculations, riprap sizing and depth of placement, channel bedding or lining materials to be used under the riprap and drawings showing configuration, location and size of gabions if used. If the regulatory authority notifies the permittee that the design and installation measures submitted are not adequate, the permittee shall submit revised plans within 30 days of notification and within 120 days of such notification shall achieve compliance with the applicable standards.
- ✓ 3. The permittee shall monitor all inflows of 1 gpm or greater in the "in-mine" water monitoring program. If more than 1 gpm or larger inflow occurs within 100 feet in any direction from the source of the flow, the permittee will forward to the regulatory authority information outlining the number, source area, flow rate and locations of such inflows. The number and location of sampling points at the multiple inflow areas will then be determined by the regulatory authority.
- ✓ 4. The permittee shall quarterly monitor sampling sites 2-10-W and 2-11-W and utilize the field measurements and chemical parameters on page 7-83 of the Gordon Creek PAP.

5. The permittee shall establish a riparian area at the Gordon Creek #3 Minesite not only under BLM, USFS and DWR permits, but also as part of the wildlife mitigation plan for the Gordon Creek #2 Mine, and shall abide by the provisions of the October 13, 1983, Division of Wildlife Resources Certificate of Registration.
6. The permittee shall amend the statement on page 10-18 of the Southwest Lease PAP to show that Beaver Creek Coal Company had permits from U.S. Fish and Wildlife Service and Division of Wildlife Resources for removal of one nest in the area of exploration.
7. If there is mass movement of material in the mine permit area, the permittee will notify the Division immediately and within 30 days of such notice submit mitigation plans for the slide area. Within 60 days of such notice, the permittee shall achieve compliance with the applicable standards.
8. Before further secondary mining takes place inside of a 20 degree angle of draw measured from vertical on each bank of the Beaver Creek, the permittee must demonstrate through submittal of sufficient technical information and analysis, subject to regulatory authority approval, that Beaver Creek is not likely to be affected by subsidence.  
  
In addition, prior to September 1, 1984, the permittee shall submit to the regulatory authority for approval, a plan to mitigate adverse subsidence effects to Beaver Creek in the event subsidence effects do occur.  
  
At such time that the permittee or the regulatory authority determines that subsidence within the permit area has adversely affected Beaver Creek, the permittee shall notify the regulatory authority in writing, concerning the kind and extent of the damage, and begin implementation of the approved mitigation plan as directed by the regulatory authority.
9. The permittee shall contribute, based upon one year's net water depletion to the Colorado River due to the permittee's operation, to the U.S. Fish and Wildlife Service's (Endangered Species Office) study of endangered fish species in the Colorado River.

10. The permittee shall, in consultation with the U.S. Fish and Wildlife Service, modify the existing power poles and lines servicing the Southwest Lease area within 30 days of the effective date of this permit, to the raptor proof design standards specified by the Fish and Wildlife Service.
11. Before any site redisturbance occurs, the permittee must conduct a survey, under the supervision of the regulatory authority, of the areas to be redisturbed. The survey shall identify and record locations of individuals and populations of Hedysarum occidentale var. canone (canyon sweet-vetch). If canyon sweet-vetch is found in portions of the permit area to be redisturbed, the permittee must develop and submit a mitigation plan for regulatory authority approval and after approval implement this plan before redisturbance occurs.
12. The permittee shall use all spoil material available in the permit area and any other reasonably available spoil material to cover all highwalls to the maximum extent possible. The permittee shall cover all coal seams and any toxic or acid-forming material with no less than four feet of non toxic, and non acid-forming material.

U.S. DEPARTMENT OF THE INTERIOR  
OFFICE OF SURFACE MINING  
RECLAMATION AND ENFORCEMENT  
NOTICE OF A DECISION AND AVAILABILITY  
OF BOTH A TECHNICAL ANALYSIS AND AN  
ENVIRONMENTAL ASSESSMENT FOR  
BEAVER CREEK COAL COMPANY  
PERMANENT PROGRAM PERMIT  
GORDON CREEK NO. 2 MINE  
CARBON COUNTY, UTAH

The United States Department of the Interior, Office of Surface Mining Reclamation and Enforcement (OSM), has approved, with conditions, a 5-year permit for Beaver Creek Coal Company to mine coal at its Gordon Creek No. 2 Mine.

The Gordon Creek No. 2 underground coal mine is located in Carbon County, Utah, located approximately 20 miles northwest of Price, Utah. The mine has been in operation since 1969. The proposed permit area will cover approximately 2300 acres, approximately 20.81 acres of which have been disturbed to date. Maximum mine production is at a rate of 10.58 million tons of coal over 14 years.

Any person with an interest which is or may be adversely affected by this Federal permit approval action may request an adjudicatory hearing on the final decision within 30 days after publication of this notice, in accordance with Section 514(c) of the Surface Mining Control and Reclamation Act (SMCRA). Any hearing will be governed by provisions of 5 U.S.C. Section 554. A petition for review of the OSM decision should be submitted to:

Hearings Division  
Office of Hearings and Appeals  
U.S. Department of the Interior  
4015 Wilson Boulevard  
Arlington, Virginia 22203

Pursuant to 40 C.F.R. Sections 1501.4(c) and 1506.6, notice is hereby given that Utah Division of Oil, Gas, and Mining has completed a technical analysis (TA) for the mining and reclamation plan (mining plan) for the Gordon Creek No. 2 Mine, Carbon, Utah. OSM has supplemented this TA with its own environmental assessment (EA). OSM's recommendation to approve Beaver Creek Coal Company mining plan and the permit application with conditions is in accordance with Sections 510 and 523 of SMCRA. OSM's analysis is that no significant environmental impacts would result from such approval. For information or clarification concerning the approval of the Gordon Creek No. 2 Mine plan, please contact Mark Humphrey or Walter Swain at (303) 844-3806, Office of Surface Mining, Denver, Colorado.

Both the TA and the EA are available for public review at the following locations:

Office of Surface Mining Reclamation and Enforcement  
Western Technical Center  
1020 15th Street  
Denver, Colorado 80202

Office of Surface Mining Reclamation and Enforcement  
Enforcement and Inspection  
219 Central Avenue, NW., Room 216  
Albuquerque, New Mexico 87102

Utah Division of Oil, Gas and Mining  
4241 State Office Building  
Salt Lake City, Utah 84114



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Norman H. Bangerter, Governor  
Dee C. Hansen, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

5 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

March 11, 1985

CERTIFIED RETURN RECEIPT REQUESTED  
P-396-996-948

Mr. Dan Guy, Manager  
Permitting and Compliance  
Beaver Creek Coal Company  
P. O. Box 1378  
Price, Utah 84501

Dear Mr. Guy,

Re: Review of February 13, 1985, submittal for Special  
Conditions 1 and 2, Gordon Creek No. 2, ACT/007/016,  
Folder No. 2 and 4, Carbon County, Utah

The material you submitted in response to the Division's deficiency letter of January 18, 1985 is complete and adequate to respond to Special Conditions 1 and 2 contained in the Gordon Creek No. 2 permit.

Thank you for your cooperation in this matter.

Sincerely,

L. P. Braxton  
Administrator  
Mineral Resource Development  
and Reclamation Program

JW:jvb

cc: A. Klein  
M. Humphrey  
S. Cox  
J. Whitehead  
T. Wright

9294R-6



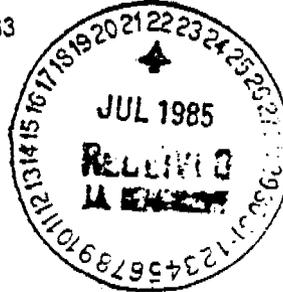
STATE OF UTAH  
NATURAL RESOURCES  
Wildlife Resources

copy to: Dan Guy  
Mike Watson

Norman H. Bongarter, Governor  
Dee C. Hansen, Executive Director  
William H. Geer, Division Director

1596 West North Temple - Salt Lake City, UT 84116-3154 • 801-533-9333

file:



July 17, 1985

Mr. James A. Herickhoff  
Beaver Creek Coal Company  
P. O. Box AU  
Price, UT 84501

Attention: Dan Guy

Dear Jim:

In regard to the 3-1/2 acres of mitigation that Beaver Creek Coal Company has funded at Shoemaker Wash on the Desert Lake Waterfowl Management Area, the project is completed. This project was inspected by Division personnel on February 20, 1985, and deemed to be complete. There has been some settling in the dike since that inspection, and the Division will correct this situation when settling is complete, as well as follow through with routine maintenance.

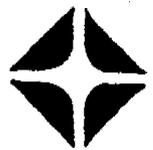
I would like to take this opportunity to express the Division's appreciation to Beaver Creek Coal Company for their participation in this project. An abundant avian resource made use of the new wetland unit during this spring. I understand that you and Mr. Dan Guy have already visited the Desert Lake Waterfowl Management Area and inspected this mitigation project. During late September, Larry Dalton in our Southeastern Region will again contact you to participate in "showing off" this accomplishment through a local and statewide news release at a time when waterfowl hunters are especially interested in wetlands.

Again, thanks. Utah's sportsmen and wildlife enthusiasts, as well as the animals, have benefited from your Company's efforts.

Sincerely,

Acting Director

William H. Geer  
Director



November 15, 1984

Mr. William H. Geer  
Acting Director  
Utah Division of Wildlife Resources  
1596 West North Temple  
Salt Lake City, Utah 84116

RE: Certificate of Registration/  
Wetland Mitigation

Dear Mr. Geer:

Beaver Creek Coal Company is pleased to present the Division of Wildlife Resources with a check in the amount of \$8,260.00 for participation in the Shoemaker Wash mitigation unit at the Desert Lake Waterfowl Management Area. It is our understanding that this contribution will be used to establish approximately 3.5 acres of wetland habitat as mitigation for the loss of wildlife habitat resulting from the development of our Gordon Creek No. 7 Mine.

Since the Certificate of Registration stipulated mitigation through development of 4 acres of wetland habitat, an additional 0.5 acres will be established at the Gordon Creek No. 3/6 Mine area. This area will be addressed in the forthcoming Reclamation Plan approval.

I would appreciate the opportunity to see the Shoemaker Wash unit upon completion. Please let me know when a visit can be arranged.

Respectfully,

Dan W. Guy  
Manager of Permitting and Compliance

DWG/sb

Enclosure

cc: Larry Dalton (DWR)  
Mary Boucek (DOGM)  
J.A. Herickhoff (BCCC)  
File 4-P-5-6-1  
File 4-P-7-1-1

INVOICE NOS.	GROSS	DISCOUNT	NET AMOUNT
Participation in Shoemaker Wash Mitigation Unit	\$8,260.00		
APPROVAL	8,260.00		
PLEASE DETACH BEFORE DEPOSITING CHECK	TOTAL GROSS	TOTAL DISCOUNT	TOTAL NET

THIS CHECK IS VOID IF COLORED BACKGROUND IS ABSENT

Beaver Creek Coal Company

88-1  
3252

CHECK NUMBER  
205622

MO. DAY YEAR

11/12/84

PAY TO THE ORDER OF

PAY EXACTLY

UTAH DIVISION OF WILDLIFE RESOURCES

\$ 8,260.00 \*\*\*\*\*

*Allen S. Whitehead*

*[Signature]*  
AUTHORIZED SIGNATURE

NATIONAL BANK OF ALASKA ANCHORAGE AK

⑈00205622⑈ 1: 25 2000571: 37⑈ 723820⑈



Date: November 8, 1984

Subject: Participation in DWR Desert Lake Project

From/Location: Dan W. Guy *Dan*

To/Location: J.A. Herickhoff

The attached letter is a request by D.W.R. for our participation in a wetlands establishment project at Desert Lake, near Elmo, Utah. This request allows us to meet most of our obligations to re-establish 4 acres of riparian habitat as committed to in the #7 Mine Plan.

The original plan was for us to establish 4 acres of riparian habitat at #3 Mine; however, this will not only be very costly, but it has a very slim chance of success due to the normal dry condition of the canyon. I have requested that we be allowed to meet our obligation entirely at Desert Lake, and although D.W.R. is in favor of this, D.O.G. & M. insists that we try to establish at least one-half acre of riparian habitat at #3 Mine. I have discussed this with D.O.G. & M. and they pointed out that regulations require mitigation near the impacted area, if possible. They feel this is a compromise that will allow us a better change of meeting our obligation. Since there is a minor amount of riparian area above and below the #3 Mine drainage, I believe it may be possible to re-establish a half-acre in the drainage without excessive cost, but certainly not 4 acres.

I therefore recommend we at least take advantage of the opportunity to establish the 3.5 acres at Desert Lake. The total cost of this is \$8,260.00.

Please let me know if you approve.

DWG/sb

*OK*  
*J.A. Herickhoff*  
*11-8-84*



1596 West North Temple • Salt Lake City, UT 84116 • 801-533-9333

September 12, 1984

Mr. Dan Guy  
Beaver Creek Coal Company  
P. O. Box AU  
Price, UT 84501

Subject: Certificate of Registration/Wetland Mitigation

Dear Dan:

The coal mining industry in Utah has, at one time or another, caused loss of high valued (critical and high-priority) wildlife habitats. As you are aware, state and federal coal mining regulations specify mitigation for loss of these high valued habitats. Wetland habitat, of which the riparian community is a component, typically is the most impacted high valued type because surface mining facilities and roads are often developed in and along drainage bottoms. Wildlife species intensively utilize local wetlands. To a lesser extent, aspen forests have been impacted by mining developments. Aspen forests are the most productive habitat type in terms of forage within the montane ecological association.

Wetland and aspen forest habitats in Utah are ranked as being of critical and high priority value to all wildlife, respectively. Thus, loss of these high valued habitat types due to coal mining necessitates mitigation.

The Division, in cooperation with the Division of Oil, Gas and Mining, as well as state and federal land management agencies, has made great strides at reducing impacts to wildlife resulting from industry. But, there are situations where small tracts of high valued habitat are lost due to coal mining activity and no suitable mitigation is practical on or near the mine plan area. Such situations do not relieve a company from their obligation to mitigate. Such was the case when Beaver Creek Coal Company was issued a Certificate of Registration for taking of a raptor nest at the Gordon Creek No. 2 coal mine. The certificate stipulated that the company would mitigate through development of 4 acres of wetland habitat during final reclamation at their Gordon Creek No. 3 and 6 mines. It now seems that only 0.5 acres of such habitat can be developed at the No. 3-6 mines. And, no suitable areas exist proximal to the Gordon Creek mines where the remaining 3.5 acres of wetland habitat could be created and maintained.

Mr. Dan Guy  
September 12, 1984  
Page Two

The Division proposes that, within Shoemaker Wash (Section 15, T17S, R10E, Emery County, Utah) at Desert Lake Waterfowl Management Area, a new wetland unit be developed for mitigation purposes. By impounding water with a dike, 5 acres of wetland habitat would result; 60 percent (3 acres) of this would represent new wetlands, as compared to the status quo. Another 9 acres of wetland habitat would be established from the outflow of the unit; 44 percent (4 acres) of this would represent new wetlands. Therefore, creation of the Shoemaker Wash Unit would result in a net gain of 7 acres of Palustrine Emergent Permanent Wetland.

Cost for such a development is estimated at \$16,520. This estimate resulted from consultation with Lowdermilk Construction Company of Helper, Utah. The Division's waterfowl section selected the location, as well as surveyed and designed the proposed wetland unit. The dike would be 500 feet long, 5 feet high, with a 12 foot wide travelway on top, and standard 3-to-1 slopes on either side. The dike would also be covered with 1 foot of 6 inch or smaller riprap. Two 60-inch-tall-by-48-inch-wide water control structures, discharging through 30-foot-long-by-24-inch-diameter, poly-coated outlet pipes would also be needed.

Fill Dirt (2,500 yds <sup>3</sup> )	\$10,000
Riprap (280 yds <sup>3</sup> )	4,200
Water Control Structures (2)	<u>2,320</u>
Total	\$16,520

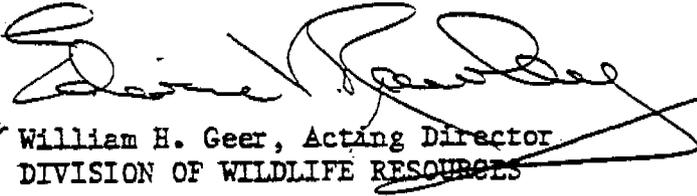
The cost estimate for fill dirt is based upon a contractor securing the 2,500 cubic yards of material on Desert Lake Waterfowl Management Area, and compacting it as a dike. The cost for 280 cubic yards of 6-inch-minus riprap is based upon hauling it from the Price area and installing it at Desert Lake Waterfowl Management Area. The cost of water control structures is just acquisition costs. Based upon the aforementioned estimates, each acre of new wetland habitat that could be developed in the Shoemaker Wash Unit would cost \$2,360.

Dan, it is recommended that Beaver Creek Coal Company participate financially in the Shoemaker Wash mitigation unit that will be developed at the Desert Lake Waterfowl Management Area. Considering that Beaver Creek would need to invest in 3.5 acres of wetland development at a cost of \$2,360 per acre, a total remittance of \$8,260 would satisfy the mitigation stipulation for the company's Certificate of Registration.

Mr. Dan Guy  
September 12, 1984  
Page Three

We anticipate initiation of construction at the Shoemaker Wash Unit during October, 1984. Therefore, an immediate letter of intent from Beaver Creek Coal Company is needed and remittance for the above-referenced amount must be received prior to October 10, 1984.

Sincerely,



William H. Geer, Acting Director  
DIVISION OF WILDLIFE RESOURCES

Acting For



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Scott M. Matheson, Governor  
Temple A. Reynolds, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

41 State Office Building - Salt Lake City, UT 84114 • 801-533-5771

February 1, 1985

Mr. Dan Guy, Manager  
Permitting and Compliance  
Beaver Creek Coal Company  
P. O. Box 1378  
Price, Utah 84501

*Dan*  
Dear Mr. Guy:

6  
Re: Special Condition No. 2, Beaver Creek Coal Company, Gordon Creek  
No. 2 Mine, ACT/007/016, #2, Carbon County, Utah

During the Division's comparison of the updated Mining and Reclamation Plan copies with the old copies on file, it was noted that Special Condition No. 2 to the Gordon Creek #2 permit has not been addressed. As you will recall, this condition required that the statement on page 10-18 of the Southwest Lease MRP be amended to show that Beaver Creek Coal Company had permits from the USFWS and DWR for removal of one nest in the area of exploration.

The Division has completed its comparison of the new MRP copies and no longer has a need for the old copies. These may be picked up the next time you are in the office or the old copies can be sent to your office in Price. Please notify the Division if you want these old volumes sent to you.

Your prompt correction of page 10-18 of the Southwest Lease MRP will be most appreciated. Eleven (11) copies of the amended page will suffice.

Sincerely,

*Mary M. Boucek*

Mary M. Boucek  
Permit Supervisor/  
Reclamation Biologist

jvb  
cc: S. Cox  
0119R-3

10.5 Mitigation and Management Plans (continued)

Lease that may be in a location that will inhibit wildlife migration will follow specifications that will accommodate wildlife passage. Also, the overland conveyor from the proposed portal to the No. 2 Mine load-out area is designed to accommodate the passage of deer.

Minimizing disturbance to the Aspen Woodland habitat is the proposed mitigation for impacts to the Williamson Sapsucker. Beaver Creek estimates that 1.7 acres out of a total 534 acres of Aspen Woodland which occurs within the permit area will be disturbed. This corresponds to 0.3 percent of the total habitat type that will be disturbed.

Ultimately, permanent reclamation to return the area of disturbance to its pre-mining land use is the most important mitigative effort. Section 10.5.1 of the Gordon Creek No. 2 Mine Permanent Program Application discusses specific wildlife enhancement alternatives to be used. The permanent revegetation plan provides a variety of species that will increase habitat diversity providing nutritional and cover benefits for wildlife.

Two additional mitigation measures are being implemented under the BLM exploration permit (3400, U-8319, U-066) that preceded this application as well as permits from DWR (Beaver Creek Coal Company Certificate of Registration) and Special Condition FWS (83-12) for removal of one nest in the area of No. 6 exploration (discussed in Section 10.4). These procedures are discussed in the paragraphs below.

Two artificial nests will also be established up Bryner Canyon from the proposed disturbance. The nests will be

APPENDIX 6

SPECIAL CONDITION NO. 8

MINING BENEATH BEAVER CREEK

Beaver Creek Coal Company

P.O. Box 1378  
Price, Utah 84601  
Telephone 801 637-5050



August 1, 1985

Mr. Lowell Braxton  
Administrator  
Utah Division of Oil, Gas, & Mining

CERTIFIED MAIL

355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, UT 84180-1203

RE: Stipulation Response on  
Approval for Mining beneath Beaver Creek  
Gordon Creek No. 2 Mine  
ACT/007/016  
Carbon County, Utah

Dear Mr. Braxton:

Enclosed are 14 copies of the consolidated submittals on the proposal to mine beneath Beaver Creek as required by Stipulations No. 3 and 4 of your April 1, 1985 approval. The material consists of the following:

- (1) A revised Appendix Index;
- (2) Revised pages 3-50b and 10-85 with references to the Appendices;
- (3) Added Appendices No. 6 and 7. The revised pages should replace corresponding pages in the M.R.P. and the new Appendices should be added at the end of Volume 2 of the plan.

If you have any questions, or need any further information, please let me know.

Respectfully,

Dan W. Guy  
Manager of Permitting and Compliance

DWG/sb

Enclosures

cc: M.P. Watson  
File 4-P-5-1-1  
File 4-P-5-1-6-1

Beaver Creek Coal Company  
P.O. Box 1378  
Price, Utah 84501  
Telephone 801 637-5050



April 17, 1985

Mr. Lowell P. Braxton  
Adminstrator  
Utah Division of Oil, Gas, & Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, UT 84180-12-3

RE: Proposed Second Mining  
Gordon Creek No. 2 Mine  
ACT/007/016, #2  
Carbon County, Utah

Dear Mr. Braxton:

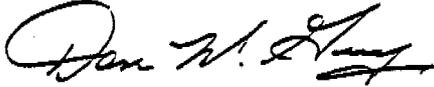
Pursuant to your approval letter of April 1, 1985, Beaver Creek Coal Company will hereby commit to the following mitigation measures:

- 1) Stream flow data from the two continuous gage stations on Beaver Creek will be compiled and portrayed in a graphical format for flow seasons of 1984 and all subsequent years for a period of 10 years, or until mining is completed if more than 10 years. This information will be submitted to the Division annually beginning January 31, 1986 and January 31 of each year after until completion.
- 2) B.C.C.C. shall not mine the Hiawatha Seam beneath Beaver Creek without specific Division approval to do so.
- 3) As discussed with Mr. Steve Cox, the aquatic baseline data in the approved M.R.P. will serve to meet this condition for the invertebrate population in the proposed mining area. The baseline information on the fishery populations present will be obtained through the Division of Wildlife, compiled and submitted as an Appendix to the approved M.R.P., by August 1, 1985.
- 4) B.C.C.C. will compile the material submitted March 7, March 20, and March 28 and submit 14 copies to the Division for inclusion as an Appendix to the approved M.R.P. by August 1, 1985.

April 17, 1985

Thank you for your cooperation, If you have any questions, or need any further information, please let me know.

Respectfully,



Dan W. Guy  
Manager of Permitting and Compliance

DWG/sb

cc: J.A. Herickhoff (w/out attachments)  
M.P. Watson (w/out attachments)  
D.R. Meadors (w/out attachments)  
File 4-P-5-1-1  
File 4-P-5-6-2  
IBM Di



April 1, 1985

Mr. Dan W. Guy, Manager  
Permitting and Compliance  
Beaver Creek Coal Company  
P. O. Box 1378  
Price, Utah 84501

Dear Mr. Guy:

RE: Proposed Second Mining, Gordon Creek #2 Mine, ACT/007/016,  
#2, Carbon County, Utah

The Division has reviewed the material submitted on March 28, 1985 regarding Beaver Creek Coal Company's (BCCC) proposal to reduce the pillar size in the area currently being mined under Beaver Creek.

Based on the detailed subsurface information provided, the Division has determined it is extremely unlikely that subsidence impacts would cause any material damage to Beaver Creek. The Division's finding is based on the following.

Borehole lithologic data derived from the #7 Mine and #2 Mine were correlated and projected to the area of proposed second mining in the #2 Mine, a distance of approximately 3,500 feet. Minor lithologic variation along the correlated section indicate a similar roof and floor lithologies occur in the #2 Mine. Accordingly, the uniaxial strength of roof and floor lithologies in the #2 Mine are assumed to be similar.

Safety factors of 2.4 and 17.36 were calculated for pillars and roof rock, respectively. These values incorporate uniaxial strength data that were correlated from the #7 Mine as described above and are considered conservative for mining.

A maximum subsidence value of 3.85 feet based on complete pillar recovery, was calculated for the entire area of proposed second mining. This value is considered excessive because complete pillar recovery is not proposed.

Page 2

Mr. Dan W. Guy, Manager  
April 1, 1985

BCCC's proposal is hereby approved subject to the conditions noted below.

Pursuant to UMC 817.126(a), BCCC is hereby directed to undertake and commit in writing to the following mitigation measures in addition to those proposed to date by BCCC which include the Gordon Creek #2 Mining and Reclamation Plan (MRP) and submittals dated March 20 and 28.

1. Streamflow data from the two continuous gage stations on Beaver Creek will be compiled and portrayed in a graphical format for flow seasons of 1984 and all subsequent years and submitted to the Division annually beginning January 31, 1985 and January 31 of each year after.
2. BCCC shall not mine the Hiawatha seam underneath Beaver Creek without specific Division approval to do so.
3. BCCC shall perform an aquatic baseline study of the stretch of creek where pillar sizes are to be reduced during the summer of 1984. This will assess the diversity and size of the benthic invertebrate and fishery populations present.
4. BCCC shall compile material submitted March 7, March 20 and March 28 and include the three preceding directives of this letter and submit 14 copies of this to the Division for inclusion as Appendix to the approved MRP.

Thank you for your cooperation on this matter. It is my hope that in any future request, appropriate lead time for data gathering and Division review can be observed by BCCC to avoid the crises approach to review which has characterized this issue.

Sincerely,



Lowell P. Braxton  
Administrator  
Mineral Resource Development  
and Reclamation Program

JW/btb

cc: Allen Klein  
Walt Swain  
9294R-12 & 13

Wayne Hedberg  
John Whitehead

3.4.8.2 Renewable Resources (continued)

exist above the mining (or mined) area. Portions of Beaver Creek and the springs were undermined as much as five years ago by the existing operation. Flow data has been collected on all of these points over the past four years, and there are no indications of any significant flow depletions other than through normal seasonal variations. The charts in Section 7 will indicate the flow measurements on these points. As mentioned earlier, the #2 Mine has never encountered significant amounts of underground water. Drilling in this area has not indicated any major ground water aquifers. Based on past experience and monitoring results from this area, it is not expected that mining will affect any hydrologic resource through subsidence.

Special Condition No. 8

Mitigation measures, should a substantial water inflow occur, may include: attempts to seal off the inflow, increased monitoring efforts, pumping and cleaning of inflow water, lining of the streambed through the affected area, replacement of lost water if indicated by monitoring. The first step will be to try and seal off the inflow by grouting, first from the underground and then from the surface. If this is unsuccessful, the other measures mentioned above will be employed.

The vegetation resource above the mining area consists of some rangeland for grazing of stock and wildlife and limited potential for timbering. Again, past mining in the area has indicated no surface effects upon this resource. If subsidence should occur, the effects would be minimal, possibly resulting in some fractures or slight depressions. The effect upon the vegetation resource would also be minimal, since subsidence (should it occur) is not likely to destroy vegetation, but merely displace it. It is not expected that subsidence will have any negative effect upon the plant communities.

## Mining and Reclamation Plan

### Gordon Creek No. 2 Mine Permit Application

#### 3.4.8.2 Renewable Resources (continued)

or even become evident on the surface. Should this happen, mitigation measures may include: filling of fractures, regrading of broken areas, replanting degraded areas, intensified monitoring.

#### 3.4.8.3 Geologic Hazards

Geologic hazards in the mine area exist in the form of steep slopes and numerous inactive normal faults as shown on the mine maps. The geologic hazards from the faults are normally confined to the underground entries crossing or approaching the fault. Roof conditions will typically worsen in these areas due to fracturing and slickensides; however, no surface movement or new effects have been noted to date from mining through fault zones in this area.

The steep slopes in the Gordon Creek area do present a hazard if movement should occur from mining. This could result in rock falls from exposed outcrops; however, no evidence of such falls or movement have been noted in this area from recent mining. There are no potential landslide or slump areas known to exist in the vicinity of this permit area.

#### 3.4.8.4 Subsidence

Subsidence can normally be expected to occur over areas where second mining has taken place (pillaring). Based on the geologic interruptions within this mine, subsi-

3.4.8.4 Subsidence (continued)

dence becomes very difficult to predict, due to the variable nature of the mining panels. However, the attached Figure 3-6 will give an estimate of the maximum subsidence that may be expected in mines studied in the the Western U.S. Maximum subsidence for an average panel in the #2 Mine has been estimated from Figure 3-6, using the following criteria:

Panel Width - 400'  
Average Depth - 600'  
Width/Depth Ratio - 0.67  
Seam Thickness - 7.0'

Based on this criteria and the graph, subsidence could reach a maximum of 3.85' directly over a pillared panel. However, since past pillaring has been performed in this area as much as 40 years ago, and there are no obvious surface expressions of resulting subsidence, it is expected that this figure will be substantially less, if even measurable.

If both the upper and lower seams are extracted, maximum subsidence has been estimated from Figure 3-6 for the lower seam as follows:

Panel Width - 400'  
Average Depth - 800'  
Width/Depth Ratio - 0.50  
Seam Thickness - 7.0'

Based on the graph, subsidence for the lower seam could reach 2.33' directly over a pillared panel, and 6.18' if both seams are pillared. Again, past experience in this area shows no indication that subsidence would be this drastic.

Special Condition No. 8

Further pillaring is not expected to take place beneath Beaver Creek in either the Castle Gate "A" or Hiawatha Seams; however, little, if any, subsidence effects would be expected, based on the following:

3.4.8.4 Subsidence (continued)

- (1) Pillaring in the upper (Castlegate "A") seam has already taken place nearly 5 years ago. Specifically, the northernmost west panel was pillared beneath Beaver Creek by Swisher in January, 1978 where the cover was about 650', and in Sept. 1981, Beaver Creek Coal Co. pillared the "A" Panel area beneath Beaver Creek with a cover of approximately 425'. Neither of these areas show any measurable effect on Beaver Creek. Recent mining has taken place in an area with a minimum of 450' - 500' of cover, which is comparable with the cover in the previously mined areas;
- (2) The Gordon Creek No. 2 Mine overlies areas pillared up to 40 years ago in the lower seam (Sweet's Mine) with no noticeable subsidence effects;
- (3) The 600' - 800' cover in the Beaver Creek area above the upper seam contains massive sandstone units which are unlikely to allow caving effects to reach the surface (the seams are separated by 160' - 200' of similar interburden with no noticeable effects from pillaring);
- (4) Subsidence, should it occur, is not likely to affect the Beaver Creek flow due to the numerous beds of swelling shales within the interburden. Fractures within these sedimentary deposits have a strong tendency to heal due to the swelling of the shales and sandy shales contained therein.

Special Condition No. 8

Before further secondary mining takes place inside of a 20 degree angle of draw measured from vertical on each bank of the Beaver creek, the permittee will demonstrate through

#### 3.4.8.4 Subsidence (continued)

submittal of sufficient technical information and analysis, subject to regulatory authority approval, that Beaver Creek is not likely to be affected by subsidence. (See Appendix 7).

In addition, the permittee has submitted to the regulatory authority for approval, a plan to mitigate adverse subsidence effects to Beaver Creek in the event subsidence effects do occur. (See page 3-48)

At such time that the permittee or the regulatory authority determines that subsidence within the permit area has adversely affected Beaver Creek, the permittee shall notify the regulatory authority in writing, concerning the kind and extent of the damage, and begin implementation of the approved mitigation plan as directed by the regulatory authority.

Since subsidence may occur over any underground extraction, it is proposed to set up and maintain a monitoring network as described below.

The subsidence monitoring network will consist of permanent survey monuments located outside of the anticipated area of influence of subsidence and a series of monitoring stations within the potential subsidence zone. The monitoring stations will be steel re-bar with aluminum caps set so that weather, frost heave, or livestock will not disturb them.



4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

September 5, 1984

Mr. Dan W. Guy, Manager  
Permitting and Compliance  
Beaver Creek Coal Company  
P. O. Box 1378  
Price, Utah 84501

Dear Dan Guy:

RE: Special Condition No. 8, Beaver Creek Coal Company, Gordon  
Creek #2 Mine, ACT/007/016, #2, Carbon County, Utah

The Division of Oil, Gas and Mining hereby extends the  
deadline for the above referenced special condition from  
September 1, 1984 to October 1, 1984 to allow for the  
previously intended time frame to develop the plan required by  
the condition.

Best regards,

Dianne R. Nielson  
Director

MMB/btd

cc: Allen Klein  
Steve Manger  
Jim Smith  
Mary Boucek  
Steve Cox

88130-61



United States Department of the Interior  
OFFICE OF SURFACE MINING  
Reclamation and Enforcement  
BROOKS TOWERS  
1020 15TH STREET  
DENVER, COLORADO 80202

JUN 13 1985

CERTIFIED MAIL: RETURN RECEIPT REQUESTED

Mr. Dan Guy  
Beaver Creek Coal Company  
P.O. Box AU  
Price, Utah 84501

Dear Mr. Guy:

The Office of Surface Mining (OSM) has received a check for \$1,125.00 from Beaver Creek Coal Company (BCCC) payable to OSM in response to Federal permit UT-010 condition No. 9. The check should have been made payable to the U.S. Fish and Wildlife Service (FWS). OSM does not have the facilities to process contributions for the FWS conservation fund for endangered fish in the Colorado River. We are returning the check and requesting that a new check be reissued payable to the U.S. Fish and Wildlife Service and sent to the following individual:

Mr. G.L. Buterbaugh  
Regional Director  
U.S. Fish and Wildlife Service  
P.O. Box 35486, DFC  
Denver, Colorado 80225

Copies of BCCC's transmittal letter and check should be sent to OSM and Utah Division of Oil, Gas and Mining. If you have any questions, contact Mark Humphrey at (303) 844-3806.

Sincerely,

*Allen D. Klein*  
Allen D. Klein  
Administrator  
Western Technical Center

cc: Bob Hagen, OSM-AFO  
Dianne Nielson, DOGM

*Copies sent 6/20/85, to:  
Allen D. Klein, O.S.M.  
Lowell P. Braxton, DOGM*



United States Department of the Interior  
FISH AND WILDLIFE SERVICE

MAILING ADDRESS:  
Post Office Box 26486  
Denver Federal Center  
Denver, Colorado 80226

STREET LOCATION:  
134 Union Blvd.  
Lakewood, Colorado 80228

IN REPLY REFER TO:

FA/SE/OSM  
Gordon Creek No. 2 Mine (6-5-84-0023)

JUL 1 1985

Mr. Dan Guy  
Beaver Creek Coal Company  
P.O. Box AU  
Price, UT 84501

Dear Mr. Guy:

This acknowledges receipt of your company's check for \$1,125.00 dated June 20, 1985, for the conservation of endangered fishes in the Upper Colorado River Basin in compliance with Condition No. 9 of the Office of Surface Mining's Federal permit UT-010. This contribution satisfies your commitment identified in our Gordon Creek No. 2 Mine biological opinion dated August 13, 1984.

Sincerely yours,

JOHN L. SPINKS, JR.

Acting Regional Director

cc: Administrator, OSM, Denver, CO

bcc: Frank Dunkle, Special Assistant to RD  
Don Rodgers FA  
Field Supervisor, Salt Lake City (SE)  
Field Supervisor, Grand Junction (SE)

Beaver Creek Coal Company

P.O. Box 88

Price, Utah 84501

Telephone BR 507-1050



August 1, 1984

David L. Mills  
Bureau of Land Management  
P.O. Drawer AB  
Price, Utah 84501

Dear David:

This is to confirm our telephone conversation on July 31, concerning the power pole modification at #7 Mine. In discussing your recommendations with the Mine Safety and Health Administration (MSHA), we concluded that the recommendations would be in compliance with Title 30, Code of Federal Regulations, Part 75.700-Grounding, and would be acceptable to both MSHA and Beaver Creek Coal Company.

We plan to proceed with the modifications set forth in Leon E. Berggren's letter of July 12, (3482,U-66) and complete them by the August 15, 1984 deadline.

Should you have any questions or comments, please contact me.

Sincerely,

Charles C. Dunbar  
Mining Engineer

CCD/pjm

cc: -D.W. Guy  
M.P. Watson  
M. Boucek, DOGM  
L.E. Berggren, BLM  
File 4-10

Beaver Creek Coal Company

P.O. Box 40  
Price, Utah 84501  
Telephone 801 837-5050



August 1, 1984

Mr. John W. Barton  
Mine Safety and Health Administration  
P.O. Box 25367  
Denver, Co. 80225

Dear Mr. Barton:

The Bureau of Land Management (BLM) has required that we modify the power poles at our Gordon Creek #7 Mine to meet raptor electrocution safe standards set forth by the U.S. Fish and Wildlife Service and BLM.

Recommendations for modification from BLM were discussed with Dan Bordea, Price MSHA office, and Jack Smith, Denver MSHA office, and were found to be acceptable. We plan to proceed with and complete the modifications by the August 15, 1984 deadline set by BLM. I have enclosed a copy of the letter from BLM which has the recommendations in it and a drawing showing the configuration of the poles after modification.

Should there be any problems with these modifications or if you have any questions or comments, please contact me at your earliest possible convenience.

Sincerely,

  
Charles C. Dunbar  
Mining Engineer

CCD/pjm

enclosure

cc: D.W. Guy  
M.P. Watson  
C.W. McGlothlin, w/Attachment  
J. Smith, MSHA, Denver, w/Attachment  
D. Bordea, MSHA, Price, w/Attachment  
File 4-E-1-3 w/Attachment



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Scott M. Matheson, Governor  
Temple A. Reynolds, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

41 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

July 30, 1984

Mr. Dan Guy, Manager  
Permitting and Compliance  
Beaver Creek Coal Company  
P. O. Box 1378  
Price, Utah 84501

Dear Mr. <sup>Dan</sup> Guy:

RE: Modification of Power Poles, Gordon Creek #2/#7 Mine,  
ACT/007/016, #3, Carbon County, Utah

As per our telephone conversation of July 27, 1984, this letter will serve to extend the deadline for implementation of raptor-proofing designs on power poles at the Gordon Creek #7 Mine area until August 15, 1984, in order to coincide with the deadline imposed by the Bureau of Land Management.

Should you have any questions, please contact the Division at your earliest convenience.

Sincerely,

Mary M. Boucek  
Permit Supervisor/  
Reclamation Biologist

MMB/btb

cc: Clark Johnson, U. S. Fish & Wildlife Service  
Mark Humphrey, OSM  
Jim Smith, DOGM  
Steve Cox, DOGM  
Bart Kale, DOGM

88130-40



**Date:** June 4, 1986  
**Subject:** #7 Mine Stability Monitoring

**From/Location:** K.S. Fleck

**To/Location:** D.W. Guy

On May 14, 1986, I checked the areas where I have installed rows of level stakes to monitor slope stability. These stakes are located on the #7 Mine topsoil pile, the #7 Mine sediment pond flank, and the wet area above the #1 beltline.

Although many of the stakes have been moved by creeping snow movement, all these areas are stable. I would not expect any problems in these areas this year, as most of the snowmelt in these areas has already taken place.

KSF/rs

cc: File

GORDON CREEK NO. 2/7 MINES

MODIFICATIONS / AMENDMENTS

Beaver Creek Coal Company

P.O. Box 1378  
Price, Utah 84501  
Telephone 801 637-5050



September 26, 1985

Mr. Lowell P. Braxton  
Administrator  
Division of Oil, Gas, & Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, UT 84180-1203

RE: Upgrade of Fuel Storage Area  
Gordon Creek No. 2 Mine  
ACT/007/016  
Carbon County, Utah

Dear Mr. Braxton:

Enclosed are 3 copies of a map showing the upgrade of the fuel storage area in our No. 2 Mine yard. Mr. Tom Wright suggested that I submit these to you at this time, since the area is slightly different from that shown in the M.R.P.

This work was performed as part of our enhancement effort on the mine yard. No hydrology changes or changes in the bond are required as a result of this upgrade. The work consisted of removal of the oil storage trailer, replacement of straw and earthen berms with grouted berms for total containment, relocation of the fuel storage tanks, and the addition of a concrete pad and small compressor house to provide for a cleaner equipment wash-down area.

The entire mine yard will be resurveyed upon completion of the drainage and sedimentation control changes, and 14 copies of the updated surface facilities map will be provided at that time for the M.R.P.

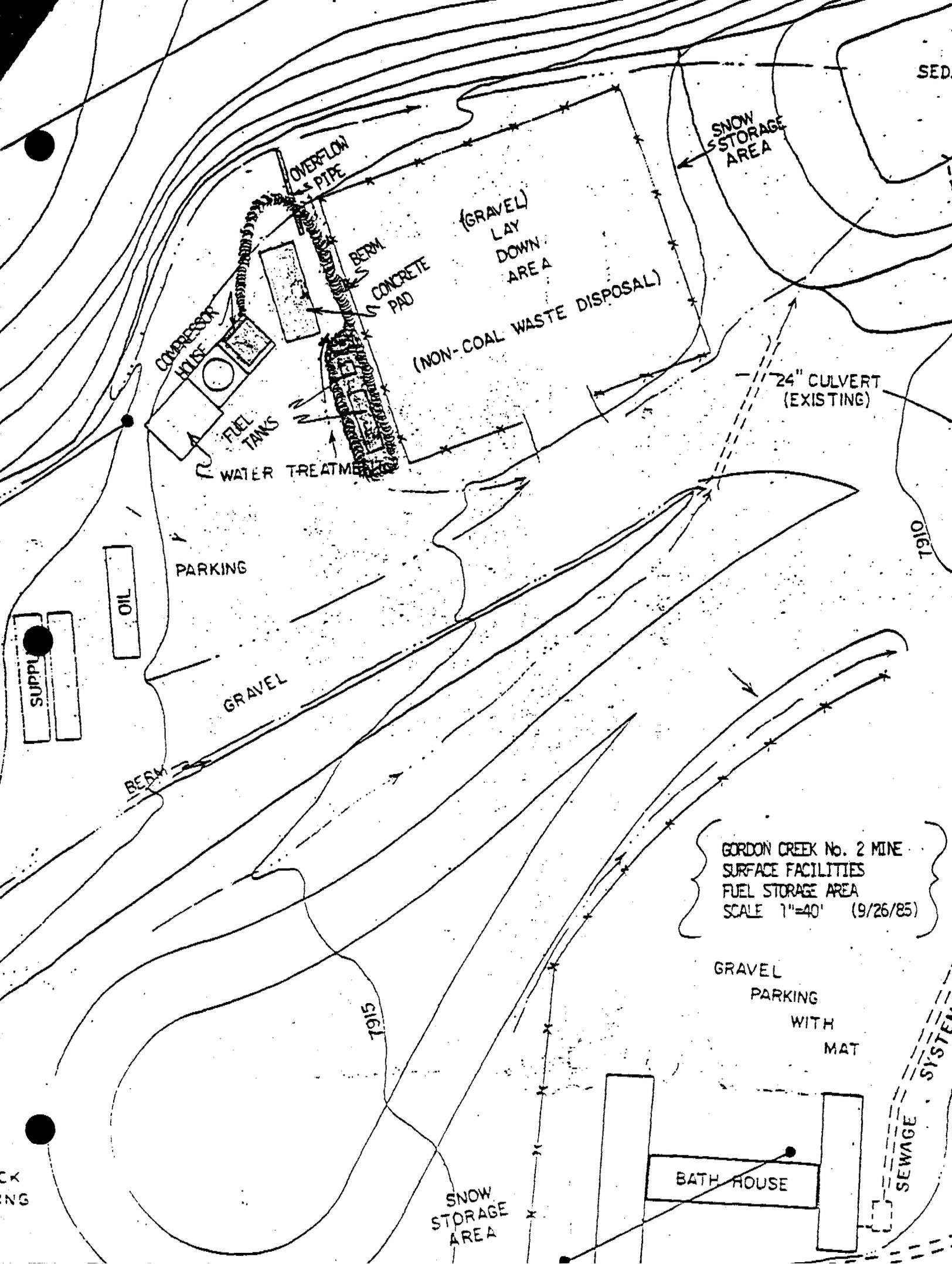
I hope this schedule will meet with your approval. If you have any questions, or need any further information, please let me know.

Respectfully,

Dan W. Guy  
Manager of Permitting and Compliance

DWG/sb

cc: J. Marshall  
File 4-P-5-1-5  
IBM D3



SED

SNOW STORAGE AREA

OVERFLOW PIPE

(GRAVEL) LAY DOWN AREA  
(NON-COAL WASTE DISPOSAL)

BERM  
CONCRETE PAD

COMPRESSOR HOUSE

FUEL TANKS

WATER TREATMENT

24" CULVERT (EXISTING)

PARKING

OIL

SUPPLY

GRAVEL

BEAM

9161

9151

GORDON CREEK No. 2 MINE  
SURFACE FACILITIES  
FUEL STORAGE AREA  
SCALE 1"=40' (9/26/85)

GRAVEL  
PARKING  
WITH  
MAT

BATH HOUSE

SNOW STORAGE AREA

SEWAGE SYSTEM

CK  
NG



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Norman H. Bangert, Governor  
Dee C. Hansen, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

5 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

August 13, 1985

Mr. Dan W. Guy, Manager  
Permitting and Compliance  
Beaver Creek Coal Company  
P. O. Box 1378  
Price, Utah 84501

Dear Mr. Guy:

Re: Approval to Construct the Proposed Drainage and Sedimentation Control Amendment, Gordon Creek #2 and #7 Mines, ACT/007/016, Folder No. 3 and 7, Carbon County, Utah

On August 8, 1985 Beaver Creek Coal Company was sent a request for additional information on the Gordon Creek #2 and #7 Drainage and Sedimentation Control Plan. These additional items were responded to by Beaver Creek Coal Company on August 12, 1985.

The Division has determined this information complete and adequate to address the applicable regulations and hereby gives its final approval to construct the proposed facilities. Please note that a construction permit from the Bureau of Water Pollution Control, Department of Health (DOH) must be obtained prior to initiation of construction on the sediment ponds. The Division has apprised Fred Pehrson of DOH of the priority of this project.

The Division appreciates the amount of effort that Beaver Creek Coal Company has put into this hydrology plan. It would be appreciated if you would apprise the Division on a weekly basis of the progress made on construction.

Page 2  
Mr. Dan Guy  
ACT/007/006  
August 13, 1985

If there are any questions, please do not hesitate to call.

Sincerely,



L. P. Braxton  
Administrator  
Mineral Resource Development  
and Reclamation Program

Review Chronology

- A. Operators Submittals
1. July 11, 1985
  2. August 6, 1985

- B. DOGM Responses
1. July 30, 1985 (Meeting)
  2. August 8, 1985

TM:jvb

cc: Allen Klein  
Steve McNeil  
Conrad Parrish  
Jim Fricke  
Wayne Hedberg

Joe Helfrich  
Tom Munson  
Rick Summers  
John Whitehead

0141R-9



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Norman H. Bongarter, Governor  
Dee C. Hansen, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

265 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

June 24, 1985

JUN 26 1985

BEAVER CREEK  
COAL COMPANY

CERTIFIED RETURN RECEIPT REQUESTED  
(P402 457 193)

Mr. Dan W. Guy, Manager  
Permitting and Compliance  
Beaver Creek Coal Company  
P. O. Box 1378  
Price, Utah 84501

Dear Mr. Guy:

RE: Approval of Amendment to Sweet's Canyon Water Fill-Up  
Area, Gordon Creek #2 Mine, ACT/007/016, #3 and #4, Carbon  
County, Utah

The Mining and Reclamation Plan (MRP) amendment plans submitted by Beaver Creek Coal Company June 19, 1985 for the Sweet's Canyon water fill-up area have been reviewed by the Division. The proposed plans are acceptable and approval is hereby granted by the Division to proceed with construction.

Now that the plans have been finalized and approved, please provide an additional 13 copies of the complete plans. The text, maps, etc., should be formatted to allow direct insertion into the appropriate section of the approved MRP's currently on file with the regulatory agencies. Please provide these copies by July 12, 1985 to the Division for distribution.

Page 2

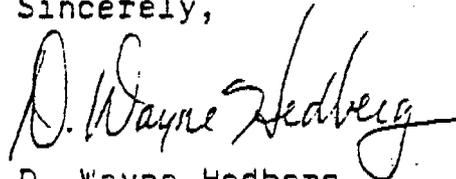
Mr. Dan W. Guy, Manager

ACT/007/016

June 24, 1985

Thank you for your cooperation in this matter. Please contact me or Dave Hooper should you have any questions.

Sincerely,



D. Wayne Hedberg  
Permit Supervisor/  
Reclamation Hydrologist

REVIEW CHRONOLOGY:

- A. Operator Submittals  
1. 3/21/85  
2. 6/19/85

- B. DOGM Responses  
1. 4/16/85  
2. 6/24/85

DH/btb

cc: Allen Klein  
Lowell Braxton  
Dave Hooper  
Rick Summers  
John Whitehead  
Tom Wright

0338R-35 & 36



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Norman H. Bangerter, Governor  
Dee C. Hansen, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

5 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

June 20, 1985

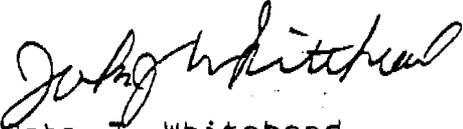
Mr. Dan Guy, Manager  
Permitting and Compliance  
Beaver Creek Coal Company  
P. O. Box 1378  
Price, Utah 84501

Dear Mr. Guy:

RE: Proposed Amendment to Change Mine Conveyor at the #7 Mine,  
Gordon Creek #2 and #7 Mine, ACT/007/016, #3 and #4,  
Carbon County, Utah

The proposed change to the #7 Mine conveyor at the Gordon Creek #2 Mine contained in your May 30, 1985 letter have been reviewed. The proposed changes are in accord with applicable regulations. The Division hereby approves this amendment. You may implement the changes to the conveyor system at your earliest convenience.

Sincerely,

  
John J. Whitehead  
Permit Supervisor/  
Reclamation Hydrologist

btb

cc: Allen Klein  
Robert Hagen  
Wayne Hedberg  
Tom Wright

9294R-33



May 30, 1985

Mr. Dan W. Guy, Manager  
Permitting and Compliance  
Beaver Creek Coal Company  
P. O. Box 1378  
Price, Utah 84501

Dear Mr. Guy:

RE: Material Storage Shed Relocation Amendment, Gordon Creek  
#2 Mine, ACT/007/016, #3 and #4, Carbon County, Utah

The Division has reviewed your May 14, 1985 letter requesting relocation of the covered storage shed at the Gordon Creek #2 Mine site. The proposal is in accord with applicable sections of the regulations. The Division hereby approves this amendment.

In order to update the Gordon Creek #2 Mine plan, please submit 11 more copies of Plate 3-1.

Sincerely,

Lowell P. Braxton  
Administrator  
Mineral Resource Development  
and Reclamation Program

btb

cc: Allen Klein  
Robert Hagen  
Wayne Hedberg  
John Whitehead  
Tom Wright

9294R-24



January 30, 1985

Mr. Dan Guy  
Manager of Permitting and Compliance  
Beaver Creek Coal Company  
P. O. Box AU  
Price, Utah 84501

Dear Mr. Guy:

Re: Approval of NOV Abatement Plans N84-6-13-1, #2 Belt Transfer  
Drainage, Gordon Creek No. 7 Mine, Beaver Creek Coal Company,  
ACT/007/016, Folder No. 3 & 7, Carbon County, Utah

The Division has received the written acceptance of conditions submitted by Beaver Creek Coal Company, January 1985, for approval of Notice of Violation (NOV) N84-6-13-1. The Division hereby approves the abatement plans. The Division understands that construction has been completed per plans.

Thank you for your cooperation in this matter. Please contact me or Dave Hooper should you have any questions.

Sincerely,

D. Wayne Hedberg  
Permit Supervisor/  
Reclamation Hydrologist

REVIEW CHRONOLOGY:

- A. Operator Submittals
  - 1. 10/5/84
  - 2. 12/10/84
  - 3. 1/9/85

- B. DOGM Responses
  - 1. 10/23/84
  - 2. 12/14/84
  - 3. 1/31/85

DH:jvb

- cc: A. Klein
- R. Hagen
- J. Helfrich
- B. Kale
- S. Linner
- T. Wright



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Norman H. Bangerter, Governor  
Dee C. Hansen, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

655 W. North Temple - 3 Triad Center - Suite 350 - Salt Lake City, UT 84180-1203 - 801-538-5340

March 24, 1986

Mr. Dan W. Guy, Manager  
Permitting and Compliance  
Beaver Creek Coal Company  
P. O. Box 1378  
Price, Utah 84501

*Dan*

Dear Mr. Guy:

RE: Mid-Term Review, Gordon Creek #2 Mine Permit, ACT/007/016,  
#2, Carbon County, Utah

Pursuant to UMC 788.11, the Division is initiating the mid-term review of the Gordon Creek #2 permit. Enclosed are the initial concerns and questions which have been identified to date.

As a point of clarification, the reference to the #2 Mine permit includes the Gordon Creek #2 Mine as well as the Southwest Lease (or #7 Mine).

Further review and an onsite visit will be incorporated in this review sometime during the summer of 1986.

Your response to the enclosed questions and concerns is requested by May 9, 1986 in order to allow the mid-term review to proceed.

Thank you for your cooperation in this matter. Please contact me or John Whitehead if you should have any questions on this.

Sincerely,

Lowell P. Braxton  
Administrator  
Mineral Resource Development  
and Reclamation Program

JJW/btb  
Enclosures  
cc: Technical Review Team  
9294R-52

**BEAVER CREEK Coal Company**

Post Office Box 1378

Price, Utah 84501

Telephone 801 637-5050



April 16, 1986

Mr. Lowell Braxton  
Administrator  
Division of Oil, Gas & Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

Re: No. 8 Mine Amendment  
Gordon Creek No. 2 Mine  
ACT/007/016, #3  
Carbon County, Utah

Dear Mr. Braxton:

This letter will confirm our telephone conversation of 3/27/86, wherein I notified you that Beaver Creek Coal Company will be delaying its plans for the No. 8 Mine by at least one year.

I appreciate the cooperation and effort extended by you and your staff in this review, and I regret asking you to place the plan on hold at this time. Our mining conditions and reserve situation have improved slightly since the original submittal, allowing for additional time and flexibility in our mine planning. Once our plans and schedule are finalized, I will contact you as soon as possible to reschedule or terminate the review.

Once again, thank you for your cooperation.

Respectfully,

Dan W. Guy  
Manager Permitting/Compliance

DWG/rs

cc: Jay Marshall  
File 4-P-5-1-1 ✓  
File 4-P-5-6-2

**BEAVER CREEK Coal Company**

Post Office Box 1378  
Price, Utah 84501  
Telephone 801 637-5050



April 23, 1986

Mr. Lowell Braxton  
Administrator  
Utah Division of Oil, Gas & Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

Re: Wildlife Mitigation  
Gordon Creek No. 2 Mine  
ACT/007/016  
Gordon Creek No.3/6 Mines  
INA/007/017  
Carbon County, Utah

Dear Mr. Braxton:

In October 1983, Beaver Creek Coal Company committed to the establishment of four acres of riparian habitat at the Gordon Creek No. 3 Mine, as a mitigation measure for the construction at No. 7 Mine and the removal of a raptor nest. In 1985, Beaver Creek Coal Company was asked by the Division of Wildlife Resources, to participate in the construction of a new pond in the Shoemaker Wash Unit of their Desert Lake Waterfowl Management Area. Through our donation of approximately \$8,200, we were allowed a 3½ acre credit toward the four acre mitigation. The Gordon Creek No. 3 and 6 Mine M.R.P. was then revised to show a minimum of one-half acre of riparian habitat.

During the review of the No. 3 and 6 Mine M.R.P., additional concerns have become evident over the long-term success of establishing a riparian area at this site. The major concerns are:

1. Coal Canyon is an ephemeral drainage, and with no consistent water supply in the drainage, the riparian growth will be difficult to establish and maintain;
2. The stream channel reclamation includes the installation of meanders to maximize the riparian area - these meanders are susceptible to wash-outs and will likely be a maintenance problem; (Based on an on-site conversation with Division Hydrologist, Jim Frickie in April, 1986)

3. The surface is private owned, and the planned post mining land use is for stock grazing and stock holding and loading areas - even if the riparian areas were to become established successfully, the long-term benefit to wildlife would likely be diminished by the stock grazing and loading activities.

I have discussed these problems with Larry Dalton of the D.W.R., and with John Whitehead and Jim Frickie of your staff. Based on these conversations, I would like to propose an alternate plan for mitigation of the remaining one-half acre of riparian habitat. In general, this plan would consist of working with the Division of Wildlife Resources to enhance the beaver population and participate in a fish-planting project in the North Fork of Gordon Creek between Coal Canyon and Sweet's Canyon. This program would consist of the following steps:

1. D.W.R. would arrange to transplant a pre-determined number of beaver in the area;
2. Beaver Creek Coal Company would supply fresh-cut aspen to the beaver at a quantity and schedule determined by D.W.R.;
3. Beaver Creek Coal Company would purchase a pre-determined number of trout for D.W.R. to stock the stream in this area.

This project would offer the following advantages over the proposed No.3/6 Mine riparian project:

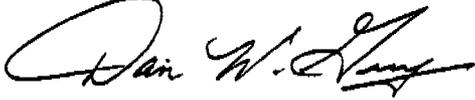
1. The stream is perennial, and the water quality in this area will support a game-fish population;
2. The supply of aspen and beaver will allow for construction of stronger and larger dams, thus reducing the erosion potential of the area and the possibility of dam "blow-out" from high spring flows;
3. Larger long-term dams will promote siltation and expansion of the riparian area along the stream;
4. Most of the area is on land open to the public - this not only allows for public enjoyment of the area, but it allows the project the potential to become a long-term benefit without later being altered or destroyed for private use.

Since the Gordon Creek No. 3/6 Mine Plan is still under review, I would appreciate your consideration of this alternate proposal at your earliest opportunity. If this plan is acceptable, I will modify the No. 3/6 plan to eliminate the meanders in the restored channel.

April 23, 1986  
Page Three

Thank you for your consideration. If you have any questions, or need any further information, please let me know.

Respectfully,



Dan W. Guy,  
Manager Permitting/Compliance

DWG/rs

cc: Mr. Larry Dalton, D.W.R.  
Jay Marshall, BCCC  
File, 4-P-5-1-1  
File, 4-P-7-1-1

**BEAVER CREEK Coal Company**

Post Office Box 1378  
Price, Utah 84501  
Telephone 801 637-5050



May 8, 1986

Mr. John Whitehead  
Permit Supervisor  
Division of Oil, Gas & Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

Re: Highwall Ditch Maintenance  
Gordon Creek No. 2/7 Mine  
ACT/007/016  
Carbon County, Utah

Dear John:

Pursuant to a request by Mr. Phil Ralphs, I am sending this letter to notify you of a temporary drainage re-route during our highwall maintenance work at the Gordon Creek No. 7 Mine.

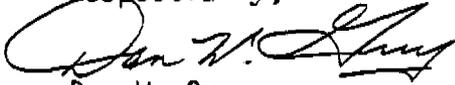
The surface expression of the 40' fault in the highwall above the No. 7 Mine is a constant sloughing problem. During the winter and spring, sloughing material has accumulated on the intermediate highwall bench, blocking the drainage ditch and knocking down a portion of the protective fence. The fault is flowing a small amount of water from the snowmelt above (as it does each spring), and this water was entering the mine yard instead of the ditch and culvert from the highwall. While the maintenance work was being done, the water was placed in the old No. 7 Mine pond, settled and siphoned out into the concrete-lined ditch below the pond. All of the water then flows through the sediment ponds below as approved in the plan.

The highwall sloughing was not reported as a slide, since it was a normal gradual accumulation of sloughed material. It has been observed by our previous inspector, and most recently, by Mr. Ralphs, who did not see any problem with our method of handling the situation. This is a normal maintenance item, and could not be done prior to this time due to snow and freezing ground conditions. The work has been finished, and the highwall drainage has been restored to its original route.

May 8, 1986  
Page Two

If you have any questions, or need any further information, please  
let me know.

Respectfully,



Dan W. Guy  
Manager Permitting/Compliance

DWG/rs

cc: Jay Marshall  
✓ File 4-P-5-1-1

**BEAVER CREEK Coal Company**

Post Office Box 1378

Price, Utah 84501

Telephone 801 637-5050



May 22, 1986

Mr. Lowell Braxton  
Administrator  
Utah Division of Oil, Gas & Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

Re: Mid-Term Review  
Gordon Creek No.2 Mine Permit  
ACT/007/016 #2  
Carbon County, Utah

Dear Mr. Braxton:

Enclosed are three copies of a response cross-reference for the No.2 and 7 Mine Mid-Term Review Plans submitted on May 19, 1986.

If you have any questions, or need any further information, please let me know.

Respectfully,

Dan W. Guy,  
Manager Permitting/Compliance

DWG/rs

cc: Jay Marshall  
File 4-P-5-1-1

**BEAVER CREEK Coal Company**

Post Office Box 1378

Price, Utah 84501

Telephone 801 637-5050



September 24, 1986

Mr. Lowell Braxton  
Administration  
Division of Oil, Gas & Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

Re: Temporary Cessation of Operations  
Gordon Creek No. 2 & 7 Mines  
ACT/007/016  
Carbon County, Utah

Dear Mr. Braxton:

This letter is to inform you of a temporary cessation of mining operations at the Gordon Creek No. 2/7 Mines. The suspension of mining is expected to continue through November 2, 1986. Mining and coal haulage are the only activities affected by this action.

All environmental controls will remain operational, and will be maintained as usual during this period. Personnel will remain at the minesite to inspect the mine and surface facilities, and to perform any maintenance or repairs necessary.

If you have any questions, or need any further information, please let me know.

Respectfully,

Dan W. Guy,  
Manager Permitting/Compliance

DWG/rs

cc: Jay Marshall

File: 4-P-5-1-1

File: 4-P-5-1-6-1

**BEAVER CREEK Coal Company**

Post Office Box 1378  
Price, Utah 84501  
Telephone 801 637-5050



March 16, 1987

Mr. John Whitehead  
Permit Supervisor  
Utah Division of Oil, Gas & Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

Re: Amendment to Develop First South  
Entries to Access #8 Mine Block  
Gordon Creek No. 2/7 Mines  
ACT/007/016 - #2  
Carbon County, Utah

Dear Mr. Whitehead:

In reference to your letter of February 27, 1987 and our subsequent phone conversation on March 3, 1987, Beaver Creek Coal Co. is submitting the following additional information concerning the proposed mining amendment:

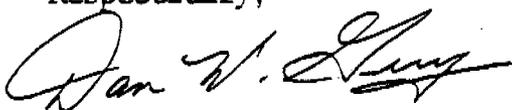
- 1) The only change from the original approved mining plan is the projected rooms to be driven north of the proposed No. 8 Mine Access off of the 1st South Entries. These rooms are projected for potential rock storage area in the event we do put in rock slopes to access the No. 8 Mine area. We have drilled the faulted area and are presently evaluating the feasibility of putting in such slopes;
- 2) In the event the rock slopes are not put in, the projected storage rooms will not be cut as shown. If the slopes are installed, the rock would be disposed of in the projected room area. In either event, the projected storage area pillars will not be pulled; therefore, no adverse affects to the Bryner channel area are anticipated;
- 3) In the event the rooms are mined, Beaver Creek Coal Company will add one or more subsidence monitoring stations in the Bryner Canyon stream channel area, and monitor the station(s)

March 16, 1987  
Page Two

in accordance with the approved plan. Furthermore, Beaver Creek Coal Company will commit to remedy and repair, within 30 days of observation, any subsidence-induced damage to the Bryner Canyon stream channel in this area, to assure a stable, permanent stream bed and bank.

If you have any questions, or need any further information, please let me know.

Respectfully,



Dan W. Guy,  
Manager Permitting/Compliance

DWG/rs

cc: Jay Marshall  
File



February 27, 1987

CERTIFIED RETURN RECEIPT REQUESTED  
(P 402 458 626)

Mr. Dan Guy, Manager  
Permitting & Compliance  
Beaver Creek Coal Company  
P. O. Box 1378  
Price, Utah 84501

Dear Mr. Guy:

Re: Areas of Concern, Amendment to Develop First South Entries to Access #8 Mine Block, Beaver Creek Coal Company, Gordon Creek #2 Mine, ACT/007/016, Folder #2, Carbon County, Utah

The Division has received a copy of the Bureau of Land Management's approval dated December 30, 1986, to develop entries in the #7 Mine block's First South, to access the #8 Mine block. Since these entries will be driven in an area with 100-150 feet of cover, and since Bryner Creek will be undermined, the following issues must be resolved before the Division's approval of this change can be given.

Serious doubt exists as to if the area underneath the stream channel should undergo secondary mining. It would appear that subsidence of the stream channel would potentially induce headcutting upstream of the subsidence. Depending on the severity of the subsidence, the cost of repairs could influence the economic viability of coal recovery.

Beaver Creek Coal Company must specify what measures will be taken and commit to remedy and repair, within 30 days of observation, any subsidence-induced damage to the Bryner Canyon stream channel to assure a stable, permanent stream bed and bank.

Page 2  
Mr. Dan Guy  
ACT/007/016  
February 27, 1987

The subsidence monitoring program will need to be updated to include measurements to identify subsidence induced impacts to the stream channel. The Gordon Creek #2/7 Mine plan must be updated to reflect the changes in mine sequence proposed herein.

Your response to these concerns will be required before the Division can proceed with this review.

Sincerely,



John J. Whitehead  
Permit Supervisor/  
Reclamation Hydrologist

djh  
cc: Allen Klein, OSM  
Jim Fricke  
Wayne Hedberg  
Rick Smith  
0800R/53

STATE OF UTAH  
PERMANENT REGULATORY PROGRAM

MID-TERM PERMIT REVIEW  
OF  
UNDERGROUND MINING PERMIT APPLICATION  
AND  
MINING AND RECLAMATION PLAN

for the  
CORDON CREEK NO. 2 and NO. 7 MINES  
CARBON COUNTY, UTAH

Submitted by

BEAVER CREEK COAL COMPANY  
PRICE, UTAH

5/8/86

**BEAVER CREEK Coal Company**

Post Office Box 1378  
Price, Utah 84501  
Telephone 801 637-5050



May 22, 1986

Mr. Lowell Braxton  
Administrator  
Utah Division of Oil, Gas & Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

Re: Mid-Term Review  
Gordon Creek No.2 Mine Permit  
ACT/007/016 #2  
Carbon County, Utah

Dear Mr. Braxton:

Enclosed are three copies of a response cross-reference for the  
No.2 and 7 Mine Mid-Term Review Plans submitted on May 19, 1986.

If you have any questions, or need any further information, please  
let me know.

Respectfully,

Dan W. Guy,  
Manager Permitting/Compliance

DWG/rs

cc: Jay Marshall  
File 4-P-5-1-1 ✓

**BEAVER CREEK Coal Company**

Post Office Box 1378  
Price, Utah 84501  
Telephone 801 637-5050



March 16, 1987

Mr. D. Wayne Hedberg  
Permit Supervisor  
Utah Division of Oil, Gas & Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

Re: Water Monitoring Amendment  
Gordon Creek No. 2/7 Mines  
ACT/007/016-86A, #3  
Carbon County, Utah

Dear Mr. Hedberg:

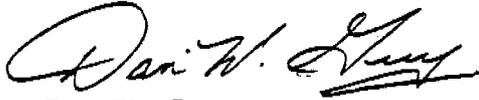
In response to your letter of 2/3/87, Beaver Creek Coal Company will adhere to the following stipulations:

- (1) Beaver Creek Coal Company will adhere to part one of the commitment letter of 4/17/85, wherein stream flow data from the 2 continuous gage stations on Beaver Creek will be compiled and portrayed in graphical format for 1984 and subsequent years for a period of 10 years, or until mining is completed (such data is to be collected only during the time the stream is not frozen or inaccessible.)
- (2) Station 2-10-W was the inlet to the original No. 7 Mine sediment pond. This station is now located at the inlet of the new Pond 7-A.
- (3) An updated Plate 7-2 is enclosed, showing current and approved water monitoring station locations along with sediment pond locations;
- (4) The analyses results will be submitted to the Division quarterly, on the proposed Water Monitoring Report previously submitted.

March 16, 1987  
Page Two

If you have any questions, or need any further information, please let me know.

Respectfully,



Dan W. Gry,  
Manager Permitting/Compliance

DWG/rs

cc: Jay Marshall  
File



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Norman H. Bangerter, Governor  
Dee C. Hansen, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

55 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

February 3, 1987

Mr. Dan W. Guy, Manager  
Permitting and Compliance  
Beaver Creek Coal Company  
P.O. Box 1378  
Price, Utah 84501

Dear Mr. Guy:

RE: Initial Review of MRP Amendment, Request to Amend Water  
Monitoring Plan, Gordon Creek No. 2 & 7, ACT/007/016-86A,  
Folder No. 3, Carbon County, Utah

The Division has completed its review of Beaver Creek Coal Company's December 18, 1986 submittal concerning proposed water monitoring changes. While the proposed plans are generally acceptable, several concerns must be addressed before final approval can be granted.

The attached technical memorandum identifies the specific items which must be addressed in writing before the permitting process can continue. If possible, please provide a response to these concerns by February 26, 1987.

Thank you for your patience and cooperation in this matter. If you should have any questions or concerns, please contact Jim Fricke or John Whitehead.

Sincerely,

D. Wayne Hedberg  
Permit Supervisor/  
Reclamation Hydrologist

DMW:djh  
Enclosure  
cc: A. Klein  
L. Braxton  
J. Fricke  
J. Whitehead

0851R/36

February 3, 1987

TO: Coal File

FROM: James R. Fricke, Reclamation Hydrologist *JRF*

RE: MRP Amendment, Request to Amend Water Monitoring Plan, Gordon Creek #277 Mines, ACT/007/016, Folder #3 and #9, Carbon County, Utah

The operator has submitted a MRP amendment plan dated December 9, 1986, for the water monitoring program. The operator intends to follow DOGM water monitoring guidelines as adopted in January, 1986. The operator will deviate from the guideline sampling frequencies. The following list summarizes the proposed plan.

Station	Operator Proposal	DOGM Remarks
2-1-W	Monitored per NPDES requirements	Satisfactory
2-2-W	Quarterly quality and quantity	Monthly quantity and quarterly quality
*2-3-W	Monthly quantity, Bi-annual quality	Continuous quantity while stream is not frozen, bi-annual quality; 1 sample at low flow, 1 sample at high flow conditions.
*2-4-W	Monthly quantity, Bi-annual	Continuous quantity while stream is not frozen, bi-annual quality; 1 sample at low-flow, 1 sample at high flow conditions.

Station	Operator Proposal	DOGM Remarks
2-5-W	Bi-Annual quality	Bi-annual quantity and quality, 1 sample at low flow and 1 sample at high flow conditions.
2-6-W	Bi-Annual quality	Bi-annual quantity and quality, 1 sample at low flow conditions and 1 sample at high flow conditions.
2-7-W	Quarterly flow and quantity	Satisfactory; the Division requests that high & low flows must be sampled.
2-8-W	Quarterly flow and quantity	Satisfactory; the Division requests that high & low flows must be sampled.
2-9-W	Quarterly flow and quantity	Satisfactory, the Division requests that high & low flows must be sampled.
2-10-W	The operator does not provide information as to the status of this station.	The operator must submit a written statement as to the status of this station.
2-11-W	Eliminate	Satisfactory.

Page 3  
Memo to Coal File  
ACT/007/016 #2/7  
February 3, 1987

\* The operator must adhere to part one of the commitment letter of April 17, 1985. Part one of the letter from Beaver Creek Coal Company states that stream flow data from the two continuous gage stations on Beaver Creek will be compiled and portrayed in graphical format for flow seasons of 1984 and all subsequent years for a period of 10 years, or until mining is completed, if more than 10 years.

The Division also requests that the operator submit an updated plate 7-2, showing current and approved water monitoring station locations along with current approved sediment pond locations.

The operator must commit to the previously mentioned comments and remarks and changes in the proposal before approval can be granted. Furthermore, the operator must commit to the format and content of the proposed Water Monitoring Report and submitting the report in complete form to the DOGM office.

djh  
cc: J. Whitehead  
0798R/10

**BEAVER CREEK Coal Company**

Post Office Box 1378  
Price, Utah 84501  
Telephone 801 637-5050



December 9, 1986

Mr. Lowell Braxton  
Administrator  
Division of Oil, Gas & Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

Re: MRP Amendment  
Request to Amend Water Quality  
Monitoring Plan  
Gordon Creek No. 2/7 Mines  
ACT/007/016, #3 & #9  
Carbon County, Utah

Dear Mr. Braxton:

Beaver Creek Coal Company is herein submitting a proposed amended water quality monitoring plan for the Gordon Creek No. 2/7 Mines. The proposed amendment is summarized on the enclosed sheets and map, which, if approved, will be added to the M.R.P. The proposed sampling parameters and frequencies are in accordance with the Division Water Monitoring Guidelines issued in January 1986.

Each station is listed below, along with any proposed changes:

2-1-W Lower Sediment Pond Discharge  
BCCC Request - No change (Monitored per NPDES Discharge Permit).

2-2-W North Fork Gordon Creek  
BCCC Request - Quarterly sampling for flow and quality (to include one sample each at high and low flow conditions.

2-3-W Lower Beaver Creek

2-4-W Upper Beaver Creek

2-5-W Jewkes Spring in Beaver Creek

2-6-W Gunnison Homestead Spring

BCCC Request - Monthly flow on Beaver Creek when accessible; quality in Spring and Fall. Note: SCS has a monitoring station on lower Beaver Creek. BCCC requests that this data be provided to the Division annually in lieu of monthly flow on the above

December 9, 1986  
Page Two

stations.

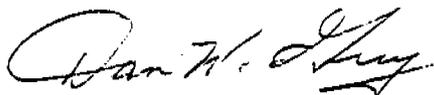
2-7-W Left Fork Bryner Canyon above #7 Mine  
2-8-W Right Fork Bryner Canyon above #2 Mine  
2-9-W Bryner Canyon below #2 Mine

BCCC Inflow to Upper Sediment Pond - 7A  
BCCC Request - Quarterly flow and quality.

2-11-W Upper Sediment Pond Discharge  
BCCC Request - Eliminate. The upper sediment pond at #7 Mine is no longer used. Pond 7A only discharges to Pond #2 which is monitored at station 2-1-W.

It is our hope this amended plan will meet with your approval. If you have any questions, or need any further information, please let me know.

Respectfully,



Dan W. Guy  
Manager Permitting/Compliance

DWG/rs

cc: Jay Marshall  
File  
DAN4

GORDON CREEK NO. 2/7 MINES

NOTIFICATIONS

Beaver Creek Coal Company

P.O. Box 1378

Price, Utah 84501

Telephone 801 637-5050



October 14, 1985

Mr. Lowell Braxton  
Administrator  
Division of Oil, Gas, & Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, UT 84180-1203

RE: Gordon Creek No. 2 Mine  
Final Closure  
ACT/007/016  
Carbon County, Utah

Dear Mr. Braxton:

Enclosed is a copy of a Notice of Closure of the Gordon Creek No. 2 Mine, along with a plan for sealing the portals.

The portals are presently being sealed, and will be backfilled as per the approved plan. Since the other facilities at this location also serve the No. 7 Mine, final reclamation of this site will not take place until the No. 7 Mine is completed.

If you have any questions, or need any further information, please let me know.

Respectfully,

Dan W. Guy  
Manager of Permitting and Compliance

DWG/sb

cc: J. Marshall  
File 4-P-5-1-1 ✓  
IBM D3

Beaver Creek Coal Company

P.O. Box 1977

Price, Utah 84501

Telephone 801 637-8000



October 10, 1985

Mr. Alan Vance  
Bureau of Land Management  
P.O. Drawer AB  
Price, UT 84501

RE: Gordon Creek #2 Mine  
ID No. 42-00125  
Mine Sealing

Dear Mr. Vance:

Enclosed please find a copy of the approved Mine Sealing Plan with six copies of the final mine map showing the location of the seals.

Production at the #2 Mine was completed on October 9, 1985. Seals will be constructed prior to November 1, 1985.

If you have any questions, please call.

Sincerely,

*R. Jay Marshall*  
R. Jay Marshall  
Engineering Supervisor

RJM/sb

cc: File  
IBM E3

P O Box 25367  
Denver, Colorado 80225  
Coal Mine Safety and Health  
District 9



September 20, 1985

Mr. Robert P. Moschetta  
Safety Supervisor  
Beaver Creek Coal Company  
P.O. Box 1378  
Price, Utah 84501

Re: Gordon Creek #2 Mine  
ID No. 42-00125  
Mine Sealing Plan - Portal Seals

Dear Mr. Moschetta:

The enclosed mine sealing plan, recieved September 12, 1985, has been approved in accordance with 30 CFR 75.1711-2. The plan is subject to review and possible revision at any time and any changes proposed to the plan shall be approved by MSHA prior to implementation.

Sincerely,

A handwritten signature in cursive script, reading "John W. Barton", is written over the typed name.

John W. Barton  
District Manager

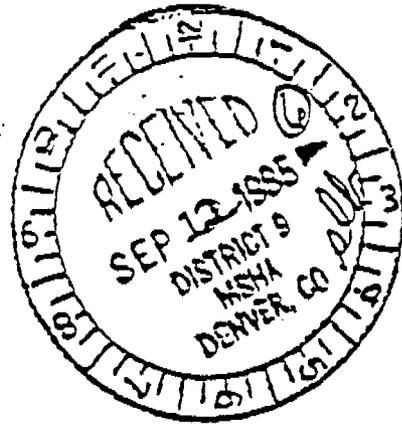
Enclosure

\* \* \* \* \*

SAFETY NOTE: Last September five miners died in fall of roof and rib accidents.

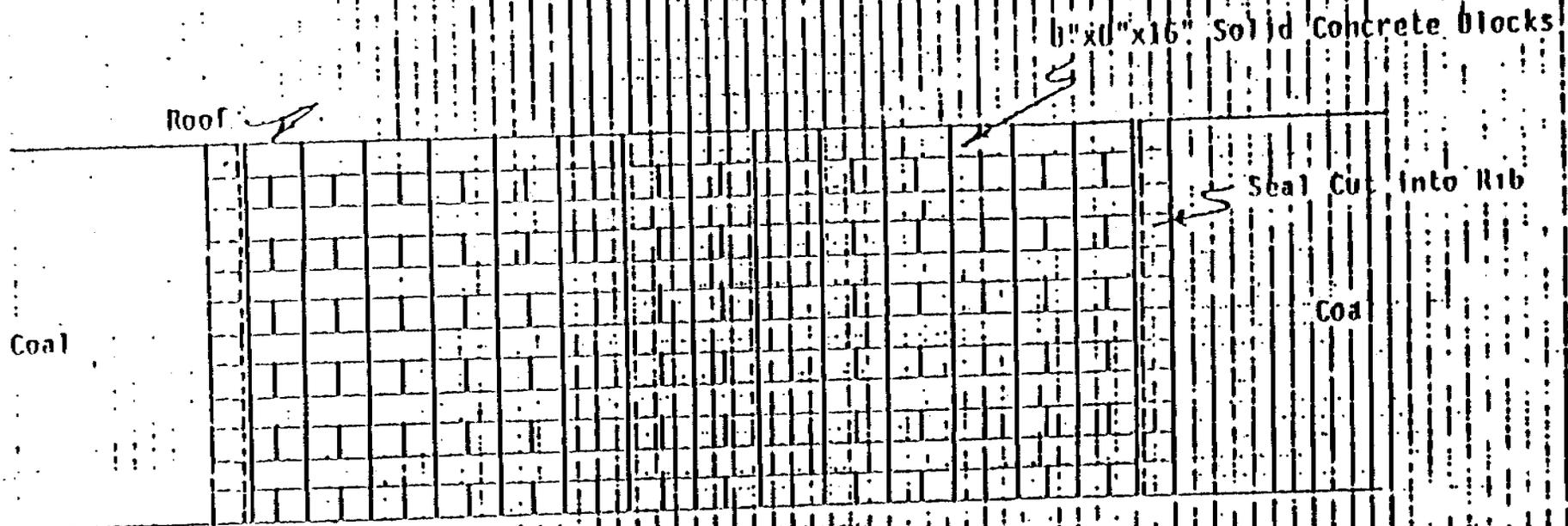
## Sealing of Mine Openings

The first phase of the reclamation activity following final abandonment of the operation will be accomplished by placing a mortared joint block seal 20 to 50 feet in by the portal. If the width of the seal exceeds 16', a pilaster will be included in the seal. The area outby the seal will then minimize any roof breaking in this area. The portal structures will be removed and the exposed coal seam, including portal area, will be covered during the reclamation of the upper pad and high wall areas. Details of the seals are shown on Figures 3-7 and 3-8.



TYPICAL PORTAL SEAL

Scale 1/4"



Front View

Floor

Roof

Coal

Coa

Seal Cut into Rib

6" x 10" x 16" Solid Concrete Blocks



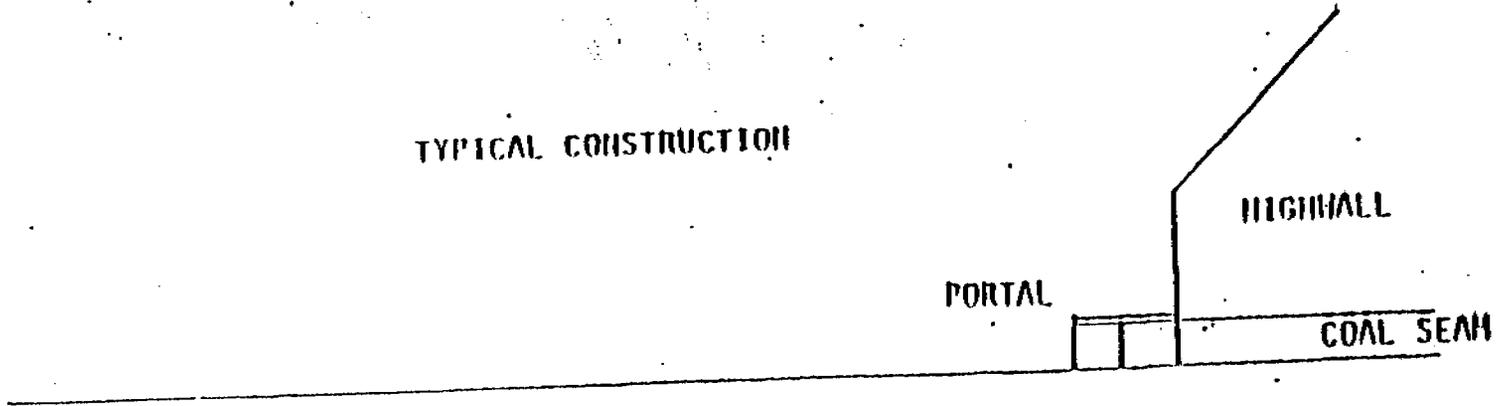
TOP VIEW

Blocks in Transverse Pattern

Coal Rib

Coal Rib

TYPICAL CONSTRUCTION



TYPICAL FOR RECLAMATION

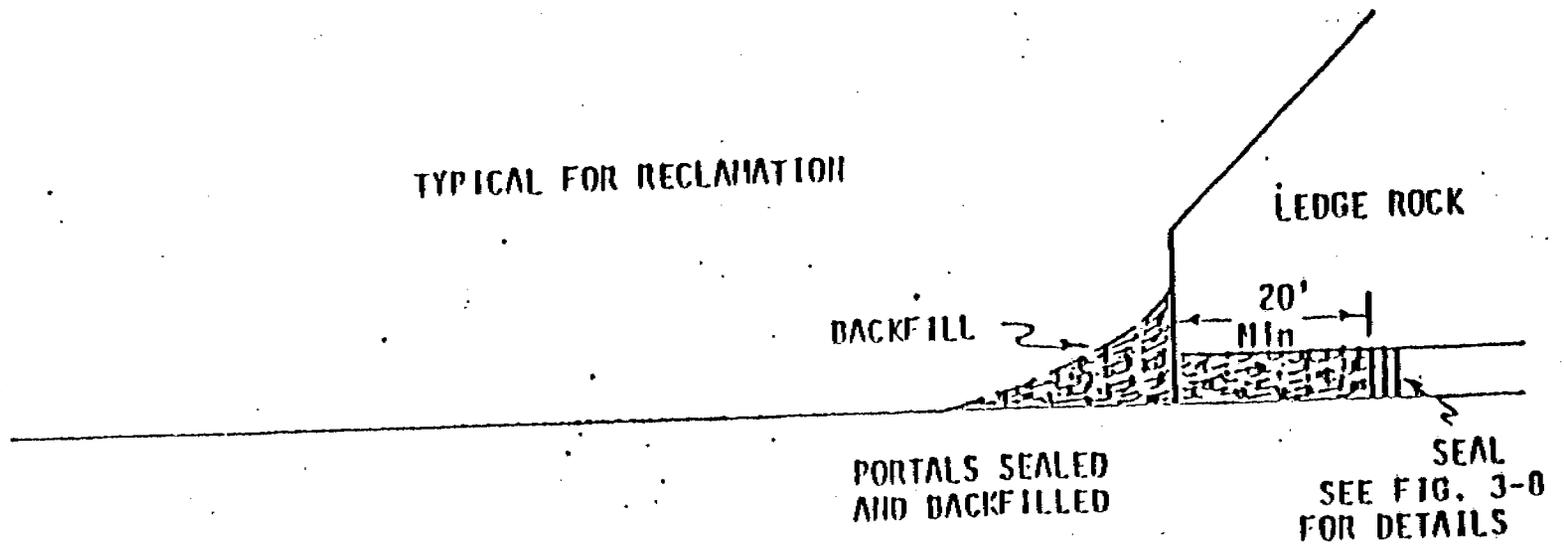


FIGURE 3-7 TYPICAL PORTAL SEALING



# United States Department of the Interior

BUREAU OF LAND MANAGEMENT  
Moab District  
Price River Resource Area  
P. O. Drawer AB  
Price, Utah 84501

3400  
- (U-8319)  
(U-066)

Mr. R. J. Marshall  
Engineering Supervisor  
Beaver Creek Coal Co.  
P. O. Box 1378  
Price, Utah 84501

OCT 30 1985

Dear Mr. Marshall:

A copy of the MSHA approved Mine Sealing Plan and accompanying mine maps showing the location of the seals were received October 16, 1985. The MSHA approved Mine Sealing Plan is compatible with the Mining and Reclamation Plan (3.5.3.1 Sealing of Mine Openings) specifications.

It has been observed in the course of mining in Gordon Creek No. 2 Mine that a maximum economic recovery (MER) of the coal resource in the Castlegate A coal seam was met by Beaver Creek Coal Co. All of the accessible coal in the Castlegate A coal seam that could be economically mined was recovered in the mining process that has been in operation for many years, and in particular since 1970 when the Federal coal lease U-8319 was issued.

All potential unmined recoverable coal remaining within the Federal coal lease U-8319 are in the Hiawatha coal seam located below the Castlegate A coal seam and could still be recovered from existing access yet to be devised.

The building of block seals and plugging of the portal areas according to your plans satisfy Resource Protection and Protection Plan (R2P2) requirements. Further reclamation will be under OSM and DOGM requirements as the adjoining mining operations are completed.

If you have any questions please contact Allen Vance of my staff at 637-4584.

Sincerely yours,

*Mark A. Mackenzie*

Area Manager

cc: Moab District Office (U-065)  
Utah State Office (U-921)  
OSM, Denver  
DOGM

COPY

Beaver Creek Coal Company

P.O. Box 1378

Price, Utah 84501

Telephone 801 637-5050



March 20, 1986

Helper Associates  
c/o S.V. Litizzette  
178 South Main Street  
Helper, Utah 84526

Re: Surface Owner Notification  
of Underground Mining Activities  
Gordon Creek No 2 Mine  
Carbon County, Utah

Dear Mr. Litizzette:

You are the surface owner of record of lands situated above, or adjacent to, Beaver Creek Coal Company mining operations.

This letter is to notify you that Beaver Creek Coal Company has conducted or may conduct underground mining in the future beneath, or adjacent to, these properties.

As with any underground operation, there is a remote possibility of subsidence from this mining. Beaver Creek Coal Company will be monitoring subsidence and hydrology on areas that could possibly be affected by its mining activities. This may require that our monitoring personnel have access onto your property for performance of this work.

If you have any questions, or need any further information, please let me know.

Sincerely,

D.W. Guy  
Manager Permitting/Compliance

DWG/rs

cc: Lowell Braxton, DOGM  
Dave Lof, DOGM  
Jay Marshall, BCCC  
File 4-E-3-5  
File

Beaver Creek Coal Company

P.O. Box 1378  
Price, Utah 84501  
Telephone 801 637-5050



March 20, 1986

Mr. Carl Nyman  
4260 Olympus View Drive  
Salt Lake City, Utah 84117

Re: Surface Owner Notification  
of Underground Mining Activities  
Gordon Creek No 2 Mine  
ACT/007/016  
Carbon County, Utah

Dear Mr. Nyman:

You are the surface owner of record of lands situated above, or adjacent to, Beaver Creek Coal Company mining operations.

This letter is to notify you that Beaver Creek Coal Company has conducted or may conduct underground mining in the future beneath, or adjacent to, these properties.

As with any underground operation, there is a remote possibility of subsidence from this mining. Beaver Creek Coal Company will be monitoring subsidence and hydrology on areas that could possibly be affected by its mining activities. This may require that our monitoring personnel have access onto your property for performance of this work.

If you have any questions, or need any further information, please let me know.

Sincerely,

D.W. Guy  
Manager Permitting/Compliance

DWG/rs

cc: Lowell Braxton, DOGM  
Dave Lof, DOGM  
Jay Marshall, BCCC  
File 4-E-3-5  
File

Beaver Creek Coal Company  
P.O. Box 1378  
Price, Utah 84501  
Telephone 801 637-5050



March 20, 1986

G. Peter & Betty Ray Frandsen  
9267 Tortelline Drive  
Sandy, Utah 84070

Re: Surface Owner Notification  
of Underground Mining Activities  
Gordon Creek No 2 Mine  
ACT/007/016  
Carbon County, Utah

Dear Mr. & Mrs. Frandsen:

You are the surface owner of record of lands situated above, or adjacent to, Beaver Creek Coal Company mining operations.

This letter is to notify you that Beaver Creek Coal Company has conducted or may conduct underground mining in the future beneath, or adjacent to, these properties.

As with any underground operation, there is a remote possibility of subsidence from this mining. Beaver Creek Coal Company will be monitoring subsidence and hydrology on areas that could possibly be affected by its mining activities. This may require that our monitoring personnel have access onto your property for performance of this work.

If you have any questions, or need any further information, please let me know.

Sincerely,

D.W. Guy  
Manager Permitting/Compliance

DWG/rs

cc: Lowell Braxton, DOGM  
Dave Lof, DOGM  
Jay Marshall, BCCC  
File 4-E-3-5  
File

Beaver Creek Coal Company  
P.O. Box 1578  
Price, Utah 84501  
Telephone 801 637-5050



March 20, 1986

Wasatch Coal Company  
c/o George N. Cannan Co.  
Mtg. Rep.  
1322 Chandler Dr.  
Salt Lake City, Utah 84103

Re: Surface Owner Notification  
of Underground Mining Activities  
Gordon Creek No 2 Mine  
ACT/007/016  
Carbon County, Utah

Dear Sir:

You are the surface owner of record of lands situated above, or adjacent to, Beaver Creek Coal Company mining operations.

This letter is to notify you that Beaver Creek Coal Company has conducted or may conduct underground mining in the future beneath, or adjacent to, these properties.

As with any underground operation, there is a remote possibility of subsidence from this mining. Beaver Creek Coal Company will be monitoring subsidence and hydrology on areas that could possibly be affected by its mining activities. This may require that our monitoring personnel have access onto your property for performance of this work.

If you have any questions, or need any further information, please let me know.

Sincerely,

D.W. Guy  
Manager Permitting/Compliance

DWG/rs

cc: Lowell Braxton, DOGM  
Dave Lof, DOGM  
Jay Marshall, BCCC  
File 4-E-3-5  
File

Beaver Creek Coal Company

P.O. Box 1378  
Price, Utah 84501  
Telephone 801 637-5050



March 20, 1986

Milton A. Oman  
717 Continental Bank Bldg.  
Salt Lake City, Utah 84100

Re: Surface Owner Notification  
of Underground Mining Activities  
Gordon Creek No 2 Mine  
ACT/007/016  
Carbon County, Utah

Dear Mr. Oman:

You are the surface owner of record of lands situated above, or adjacent to, Beaver Creek Coal Company mining operations.

This letter is to notify you that Beaver Creek Coal Company has conducted or may conduct underground mining in the future beneath, or adjacent to, these properties.

As with any underground operation, there is a remote possibility of subsidence from this mining. Beaver Creek Coal Company will be monitoring subsidence and hydrology on areas that could possibly be affected by its mining activities. This may require that our monitoring personnel have access onto your property for performance of this work.

If you have any questions, or need any further information, please let me know.

Sincerely,

D.W. Guy  
Manager Permitting/Compliance

DWG/rs

cc: Lowell Braxton, DOGM  
Dave Lof, DOGM  
Jay Marshall, BCCC  
File 4-E-3-5  
File

**BEAVER CREEK Coal Company**

Post Office Box 1378

Price, Utah 84501

Telephone 801 637-5050



March 20, 1986

Mr. Eldred E. Pierce, Jr.  
Rt. #1, Box 143  
Price, Utah 84501

Re: Surface Owner Notification  
of Underground Mining Activities  
Gordon Creek No 2 Mine  
ACT/007/016  
Carbon County, Utah

Dear Mr. Pierce:

You are the surface owner of record of lands situated above, or adjacent to, Beaver Creek Coal Company mining operations.

This letter is to notify you that Beaver Creek Coal Company has conducted or may conduct underground mining in the future beneath, or adjacent to, these properties.

As with any underground operation, there is a remote possibility of subsidence from this mining. Beaver Creek Coal Company will be monitoring subsidence and hydrology on areas that could possibly be affected by its mining activities. This may require that our monitoring personnel have access onto your property for performance of this work.

If you have any questions, or need any further information, please let me know.

Sincerely,

D.W. Guy  
Manager Permitting/Compliance

DWG/rs

cc: Lowell Braxton, DOGM  
Dave Lof, DOGM  
Jay Marshall, BCCC  
File 4-E-3-5  
File

Beaver Creek Coal Company  
P.O. Box 1378  
Price, Utah 84501  
Telephone 801 637-5050



March 20, 1986

Calvin K. Jacob & Sons  
Partnership  
754 S. Cherry Drive  
Orem, Utah 84057

Re: Surface Owner Notification  
of Underground Mining Activities  
Gordon Creek No 2 Mine  
ACT/007/016  
Gordon Creek No.3 Mine  
INA/007/017  
Carbon County, Utah

Dear Mr. Jacob:

You are the surface owner of record of lands situated above, or adjacent to, Beaver Creek Coal Company mining operations.

This letter is to notify you that Beaver Creek Coal Company has conducted or may conduct underground mining in the future beneath, or adjacent to, these properties.

As with any underground operation, there is a remote possibility of subsidence from this mining. Beaver Creek Coal Company will be monitoring subsidence and hydrology on areas that could possibly be affected by its mining activities. This may require that our monitoring personnel have access onto your property for performance of this work.

If you have any questions, or need any further information, please let me know.

Sincerely,

D.W. Guy  
Manager Permitting/Compliance

DWG/rs

cc: Lowell Braxton, DOGM  
Dave Lof, DOGM  
Jay Marshall, BCCC  
File 4-E-3-5  
File

Beaver Creek Coal Company

P.O. Box 1378

Price, Utah 84501

Telephone 801 637-5050



March 20, 1986

Mr. Movell A. Jewkes  
c/o ReeseLlewellyn  
2588 Elizabeth  
Salt Lake City, Utah 84101

Re: Surface Owner Notification  
of Underground Mining Activities  
Gordon Creek No. 2 Mine  
ACT/007/016  
Gordon Creek No. 3 Mine  
INA/007/017  
Carbon County, Utah

Dear Mr. Jewkes:

You are the surface owner of record of lands situated above, or adjacent to, Beaver Creek Coal Company mining operations.

This letter is to notify you that Beaver Creek Coal Company has conducted or may conduct underground mining in the future beneath, or adjacent to, these properties.

As with any underground operation, there is a remote possibility of subsidence from this mining. Beaver Creek Coal Company will be monitoring subsidence and hydrology on areas that could possibly be affected by its mining activities. This may require that our monitoring personnel have access onto your property for performance of this work.

If you have any questions, or need any further information, please let me know.

Sincerely,

D.W. Guy  
Manager Permitting/Compliance

DWG/rs

cc: Lowell Braxton, DOGM  
Dave Lof, DOGM  
Jay Marshall, BCCC  
File 4-E-3-5  
File

Beaver Creek Coal Company

P.O. Box 1378

Price, Utah 84501

Telephone 801 637-5050



March 20, 1986

Ms. Margaret Pierce Grant  
c/o Catherine Jewkes  
730 N. 4th East  
Price, Utah 84501

Re: Surface Owner Notification  
of Underground Mining Activities  
Gordon Creek No 2 Mine  
ACT/007/016  
Gordon Creek No.3 Mine  
INA/007/017  
Carbon County, Utah

Dear Ms. Grant:

You are the surface owner of record of lands situated above, or adjacent to, Beaver Creek Coal Company mining operations.

This letter is to notify you that Beaver Creek Coal Company has conducted or may conduct underground mining in the future beneath, or adjacent to, these properties.

As with any underground operation, there is a remote possibility of subsidence from this mining. Beaver Creek Coal Company will be monitoring subsidence and hydrology on areas that could possibly be affected by its mining activities. This may require that our monitoring personnel have access onto your property for performance of this work.

If you have any questions, or need any further information, please let me know.

Sincerely,

D.W. Guy  
Manager Permitting/Compliance

DWG/rs

cc: Lowell Braxton, DOGM  
Dave Lof, DOGM  
Jay Marshall, BCCC  
File 4-E-3-5  
File

Beaver Creek Coal Company

P.O. Box 1378

Price, Utah 84501

Telephone 801 637-5050



March 20, 1986

State of Utah  
Division of State Lands  
Department of Natural Resources  
105 State Capital Building  
Salt Lake City, Utah 84114

Re: Surface Owner Notification  
of Underground Mining Activities  
Gordon Creek No 2 Mine  
ACT/007/016  
Gordon Creek No.3 Mine  
INA/007/017  
Carbon County, Utah

Dear Sir:

You are the surface owner of record of lands situated above, or adjacent to, Beaver Creek Coal Company mining operations.

This letter is to notify you that Beaver Creek Coal Company has conducted or may conduct underground mining in the future beneath, or adjacent to, these properties.

As with any underground operation, there is a remote possibility of subsidence from this mining. Beaver Creek Coal Company will be monitoring subsidence and hydrology on areas that could possibly be affected by its mining activities. This may require that our monitoring personnel have access onto your property for performance of this work.

If you have any questions, or need any further information, please let me know.

Sincerely,

D.W. Guy  
Manager Permitting/Compliance

DWG/rs

cc: Lowell Braxton, DOGM  
Dave Lof, DOGM  
Jay Marshall, BCCC  
File 4-E-3-5  
File

Beaver Creek Coal Company  
P.O. Box 1378  
Price, Utah 84501  
Telephone 801 637-5050



March 20, 1986

Carbon County  
Courthouse Building  
Price, Utah 84501

Re: Surface Owner Notification  
of Underground Mining Activities  
Gordon Creek No 2 Mine  
ACT/007/016  
Gordon Creek No. 3 Mine  
INA/007/017  
Carbon County, Utah

Dear Sir:

You are the surface owner of record of lands situated above, or adjacent to, Beaver Creek Coal Company mining operations.

This letter is to notify you that Beaver Creek Coal Company has conducted or may conduct underground mining in the future beneath, or adjacent to, these properties.

As with any underground operation, there is a remote possibility of subsidence from this mining. Beaver Creek Coal Company will be monitoring subsidence and hydrology on areas that could possibly be affected by its mining activities. This may require that our monitoring personnel have access onto your property for performance of this work.

If you have any questions, or need any further information, please let me know.

Sincerely,

D.W. Guy  
Manager Permitting/Compliance

DWG/rs

cc: Lowell Braxton, DOGM  
Dave Lof, DOGM  
Jay Marshall, BCCC  
File 4-E-3-5  
File

Beaver Creek Coal Company

P.O. Box 1378

Price, Utah 84501

Telephone 801 637-5050



March 20, 1986

Catherine Pierce Jewkes  
730 North 4th East  
Price, Utah 84501

Re: Surface Owner Notification  
of Underground Mining Activities  
Gordon Creek No 2 Mine  
ACT/007/016  
Gordon Creek No. 3 Mine  
INA/007/017  
Carbon County, Utah

Dear Ms. Jewkes:

You are the surface owner of record of lands situated above, or adjacent to, Beaver Creek Coal Company mining operations.

This letter is to notify you that Beaver Creek Coal Company has conducted or may conduct underground mining in the future beneath, or adjacent to, these properties.

As with any underground operation, there is a remote possibility of subsidence from this mining. Beaver Creek Coal Company will be monitoring subsidence and hydrology on areas that could possibly be affected by its mining activities. This may require that our monitoring personnel have access onto your property for performance of this work.

If you have any questions, or need any further information, please let me know.

Sincerely,

D.W. Guy  
Manager Permitting/Compliance

DWG/rs

cc: Lowell Braxton, DOGM  
Dave Lof, DOGM  
Jay Marshall, BCCC  
File 4-E-3-5  
File

**BEAVER CREEK Coal Company**

Post Office Box 1378

Price, Utah 84501

Telephone 801 637-5050



March 20, 1986

Ms. Peggy Ann Pierce  
c/o Catherine Jewkes  
730 N. 4th East  
Price, Utah 84501

Re: Surface Owner Notification  
of Underground Mining Activities  
Gordon Creek No 2 Mine  
ACT/006/016  
Gordon Creek No. 3 Mine  
INA/007/017  
Carbon County, Utah

Dear Ms Pierce:

You are the surface owner of record of lands situated above, or adjacent to, Beaver Creek Coal Company mining operations.

This letter is to notify you that Beaver Creek Coal Company has conducted or may conduct underground mining in the future beneath, or adjacent to, these properties.

As with any underground operation, there is a remote possibility of subsidence from this mining. Beaver Creek Coal Company will be monitoring subsidence and hydrology on areas that could possibly be affected by its mining activities. This may require that our monitoring personnel have access onto your property for performance of this work.

If you have any questions, or need any further information, please let me know.

Sincerely,

D.W. Guy  
Manager Permitting/Compliance

DWG/rs

cc: Lowell Braxton, DOGM  
Dave Lof, DOGM  
Jay Marshall, BCCC  
File 4-E-3-5  
File

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Price, Utah 84501

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March 20, 1986

United States of America  
Bureau of Land Management  
Moab District Office  
Price River Resource Area  
P.O. Drawer AB  
Price, Utah 84501

Re: Surface Owner Notification  
of Underground Mining Activities  
Gordon Creek No. 2 Mine  
ACT/007/016  
Gordon Creek No. 3 Mine  
INA/007/017  
Carbon County, Utah  
Huntington Canyon No 4 Mine  
INA/015/004  
Emery County, Utah

Dear Sirs:

You are the surface owner of record of lands situated above, or adjacent to, Beaver Creek Coal Company mining operations.

This letter is to notify you that Beaver Creek Coal Company has conducted or may conduct underground mining in the future beneath, or adjacent to, these properties.

As with any underground operation, there is a remote possibility of subsidence from this mining. Beaver Creek Coal Company will be monitoring subsidence and hydrology on areas that could possibly be affected by its mining activities. This may require that our monitoring personnel have access onto your property for performance of this work.

If you have any questions, or need any further information, please let me know.

Sincerely,

D.W. Guy  
Manager Permitting/Compliance

DWG/rs

cc: Lowell Braxton, DOGM  
Dave Lof, DOGM  
Jay Marshall, BCCC  
File 4-E-3-5  
File

**BEAVER CREEK Coal Company**

Post Office Box 1378

Price, Utah 84501

Telephone 801 637-5050



September 24, 1986

Mr. Lowell Braxton  
Administration  
Division of Oil, Gas & Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

Re: Temporary Cessation of Operations  
Gordon Creek No. 2 & 7 Mines  
ACT/007/016  
Carbon County, Utah

Dear Mr. Braxton:

This letter is to inform you of a temporary cessation of mining operations at the Gordon Creek No. 2/7 Mines. The suspension of mining is expected to continue through November 2, 1986. Mining and coal haulage are the only activities affected by this action.

All environmental controls will remain operational, and will be maintained as usual during this period. Personnel will remain at the minesite to inspect the mine and surface facilities, and to perform any maintenance or repairs necessary.

If you have any questions, or need any further information, please let me know.

Respectfully,

Dan W. Guy,  
Manager Permitting/Compliance

DWG/rs

cc: Jay Marshall

File: 4-P-5-1-1

File: 4-P-5-1-6-1 ✓