RECEIVED
APR [redacted]
DIVISION OF OIL
GAS & MINING PRICE UTAH

MOUNTAIN COAL COMPANY

1994 ANNUAL REPORT

HUNTINGTON CANYON NO 4 MINE

RECEIVED
APR 27 1995
DIVISION OF OIL
GAS & MINING PRICE UTAH

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

March 31, 1995

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

Re: Mountain Coal Company
1994 Annual Report
Huntington Canyon No. 4 Mine
INA/015/004
Carbon County, Utah

Dear Mr. Braxton:

Enclosed is the Annual Report for Coal Mining and Reclamation Operations for 1994 for the Huntington Canyon No. 4 Mine.

If you have any questions, or need any further information, please contact me or Paige Beville at ARCO Coal Company.

Respectfully,

Dan W. Guy

Dan W. Guy P.E.
for
Paige B. Beville

cc: Paige Beville - ARCO Coal Company
File

COAL MINING AND RECLAMATION OPERATIONS FOR 1994

(Must be submitted to the Division by April 14, 1995)

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

Permittee: MOUNTAIN COAL COMPANY

Mine Name: HUNTINGTON CANYON NO. 4 MINE

Mailing Address: P.O. BOX 591, SOMERSET, COLO. 81434

Company Representative: PAIGE B. BEVILLE

Resident Agent: THE CORP. TRUST CO., 1209 ORANGE ST., WILMINTON, DELAWARE 19801

Permit Number: INA/015/004

MSHA ID Number: N/A

Date of Initial Permanent Program Permit: 01/30/80

Date of Permit Renewal: 09/12/91 (EXPIRES 04/30/95)

Quantity of Coal Mined (tonnage) 1994: N/A

Attach Updated Mine Sequence Map(s) showing mine development through December 31, 1994. (Same as Lease Royalty Payment Map and/or MSHA Progress Map)

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

A. General

1. **Discuss anomalies, missing data and monitoring changes made throughout the year.**
2. **Summarize any corrective actions and the results that may have occurred during the year.**

B. Water Monitoring Data:
Groundwater Summary

1. **Mine Discharge**
   a. **Summarize the total annual discharge from mine water discharge points and breakdown on a monthly basis for each site.**
   b. **Discuss the past five years of data comparing changes in discharge. (Include in the discussion elements encountered during the year such as mining rate, location of faults or large in-mine flows during the year.)**
   c. **Discuss trends, if existent, and exceedence in water quality parameters. A correlation with flow could provide additional information.**

2. Springs
   a. Are there seasonal trends/or changes in water quality for each quarter. Stiff diagrams provide a good aid in this determination.
   b. Provide an analysis of changes in quantity of flow. Discuss any significant changes or trends. An accumulation of long-term data is necessary for this discussion.

3. Surface Water
   a. Include (discuss or tabulate) comparisons of upstream and downstream water quality and quantity for monitoring sites for each quarter. Include tributary quantity and quality information. Compare with mine water discharge where applicable.
   b. Discuss any subsidence occurring over tributaries and streams, and results from monitoring of subsided areas.

C. Summarized Water Monitoring Data

1. List of monitoring points and their locations, based on UTM coordinates, and respective frequencies of monitoring (monthly, quarterly, etc.) as approved in the PAP;
2. UPDES permit number, UPDES discharge points, and their locations based on UTM coordinates.
3. Summary of findings based on water monitoring during 1993; and
4. Submit water monitoring as DOS based files. Be specific about the format, submit data in one of the following formats only, i.e: Quattro Pro, Lotus, or ASCII.

D. Precipitation or Other Climatological Data (please submit as DOS based files: ASCII, Lotus, Quattro Pro, FoxPro, etc. -- Contact Ken Wyatt, if you have any questions).

E. Subsidence Monitoring Report:

1. Brief description of monitoring system (monuments or aerial surveys, how monitoring is done, how frequently monitoring is done);
2. List of all monitoring points (if any) and their locations and amount of displacement of each;
3. Map showing either monitoring points (if any) or a representation of subsidence which has occurred; and
4. Any owners and/or occupants of surface property and structures above the underground workings who were or will be mailed notification six months prior to mining (R645-301-525.300).
5. Discussion of any proposed mining sequence changes and how that may affect the area of monitoring for the following year.

F. Vegetation Data (test plots) or Revegetation Success Monitoring (includes interim and final):

1. Test plot monitoring data or implementation;
2. Quantitative results from interim or final seeding efforts;
3. If quantitative monitoring was not required, then at minimum, a qualitative description of the interim or final vegetation; and
4. Describe any seeding done on site during the current year.

G. Annual Impoundment Certification, (R645-301-514.312) which includes the following information:

1. Any appearances of instability;
2. Structural weakness or other hazardous conditions;
3. Depth and elevation of any impounded waters;

4. Existing storage capacity;
5. Any existing or required monitoring procedures and instrumentation; and
6. Any other aspects of the structure affecting stability.

Suggested form enclosed

H. Annual Overburden, Spoil, Refuse, Roof, Floor, and Mid-Seam Data. For Consistency and completeness, please submit data for this reporting requirement in the following manner:

1. Location of sample site, sample interval, and sample matrix (if roof or floor, then include lithologic unit and if coal, then thickness of seam at sample site);
2. Sampling technique employed in the field (i.e., grab sample, composite, depth segregated or specific procedure outlined in the permit by chapter and page) and preparation prior to analysis (i.e., sieved sample, ground sample, air dried, oven dried, etc.);
3. Laboratory analysis report sheet which includes:
   i. Sample time and date;
   ii. Date and time of lab analysis; and
   iii. Analytical method(s) employed and references. Include the soil/spoil: water ratio.
4. Summary of findings based on monitoring.

I. A current copy of the annual report of officers submitted to the Department of Commerce and any changes in the ownership and control information required under R645-301-110.

J. Any Other Information Required to be Submitted as Specified in your Permit Application Package and Permit.

PERMIT

cc. [illegible]

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

Michael O. Leavitt
Governor

Ted Stewart
Executive Director

James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

January 30, 1995

Paige Beville, Manager
Environmental, Health and Safety
ARCO Coal Company
555 Seventeenth Street
Denver, CO 80202

Re: Complete Renewal Application, Huntington #4 Mine, Mountain Coal Company, ACT/015/004-95A, Folder #3, Emery County, Utah

Dear Ms. Beville:

The Division has determined that the permit renewal application for the Huntington #4 Mine is "complete and accurate", as defined by the policy directive for permit renewal, effective January 12, 1994, with the submittal of the current bond and liability insurance. Please submit the affidavit of publication after the notice has run for four consecutive week.

If you have any questions, please call me.

Sincerely,

Pamela Grubaugh-Littig
Permit Coordinator

cc: Daron Haddock

AFFIDAVIT OF PUBLICATION

STATE OF UTAH)

ss.

County of Emery,)

I, Kevin Ashby, on oath, say that I am the Publisher of the Emery County Progress, a weekly newspaper of general circulation, published at Castle Dale, State and County aforesaid, and that a certain notice, a true copy of which is hereto attached, was published in the full issue of such newspaper for 4 (Four) consecutive issues, and that the first publication was on the 10th day of January,1995 and that the last publication of such notice was in the issue of such newspaper dated the 31st day of January, 1995.

Kevin Ashby

Kevin Ashby - Publisher

Subscribed and sworn to before me this 31st day of January,1995.

Linda Thayn

Notary Public My commission expries January 10, 1999 Residing at Price, Utah

Publication fee, $160.00

NOTARY PUBLIC
LINDA THAYN
811 NORTH 10TH EAST
PRICE, UT 84501
My Commission Expires JAN. 10, 1999
State of Utah

PUBLIC NOTICE FOR PERMIT RENEWAL
HUNTINGTON CANYON NO. 4 MINES
MOUNTAIN COAL CO.
P.O. BOX 591
SOMERSET, COLORADO 81434

Mountain Coal Company, P.O. Box 591, Somerset, Colorado 81434, a wholly owned subsidiary of Atlantic Richfield Company, has filed with the Utah Division of Oil, Gas and Mining an application for renewal of its Mining and Reclamation Plan Permit for its Huntington Canyon No. 4 Mine. The Huntington Canyon No. 4 Mine was located in Mill Fork Canyon, approximately 10 road miles northwest of Huntington, Utah. The permit area is described as follows:

Township 16 South Range 7 East, SLBM, Utah

Section 16:	All
Section 8:	SW¼
Section 8:	S½ SE¼
Section 9:	S½ SW¼
Section 9:	SW¼ SE¼
Section 17:	E½

The Huntington Canyon No. 4 Mine was permanently reclaimed in September 1985, and was granted Phase I bond release in November 1986.

The application was filed, and this notice is being published to comply with the Surface Mining Control and Reclamation Act of 1977 and State and Federal regulations promulgated pursuant to said act.

The Huntington Canyon No. 4 Mine is located on "Rilda Canyon, Utah", U.S. Geological Survey 7.5-minute quadrangle map.

The application is available for public inspection at the:

Recorder's Office
Emery County Courthouse
Castle Dale, Utah 84513
Mining and Reclamation Plan
Huntington Canyon No. 4 Mine
Permit Application

Written comments, objections, or requests for informal conferences on the application may be submitted to: State of Utah Department of Natural Resources, Division of Oil, Gas and Mining, 355 West North Temple, #3 Triad Center Suite 350, Salt Lake City, Utah 84180-1203.

Published in the Emery County Progress January 10, 17, 24 and 31, 1995.

BLACKHAWK ENGINEERING, CO.

Rt. 1, Box 146-H5 - Helper, Utah 84526 - Telephone (801) 637-2422

December 30, 1994

Mr. Darron Haddock
Permit Supervisor
Utah Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Re: Request for Permit Renewal
Mountain Coal Co.
Huntington Canyon No. 4 Mine
INA/015/004
Emery County, Utah

Dear Mr. Haddock:

Pursuant to R645-303-232, Mountain Coal Co. is herein submitting a request for renewal of the permit for the Huntington Canyon No. 4 Mine. The permit will expire on 04/30/95.

Enclosed is a copy of the liability insurance policy, performance bond, and proposed newspaper notice. The notice will be run in the local paper once per week for four consecutive weeks, and proof of publication will be submitted to the Division as required by R645-300-121.100.

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

Respectfully,

Dan W. Guy,
for Paige B. Beville

cc: Paige B. Beville, MCC
Scot Anderson
File

FEDERAL

PERMIT
ACT/015/004

September 12, 1991

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
(801) 538-5340

This permit, ACT/015/004, is issued for the State of Utah by the Utah Division of Oil, Gas and Mining (Division) to:

Mountain Coal Company
P.O. Box 1378
Price, Utah 84501
(801) 637-5050

for the Huntington #4 Mine. A Surety Bond is filed with the Division in the amount of $144,041, payable to the State of Utah, Division of Oil, Gas and Mining, and the Office of Surface Mining, Reclamation and Enforcement (OSM). The Division must receive a copy of this permit signed and dated by the permittee.

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

Sec. 2 **PERMIT AREA** - The permittee is authorized to conduct underground coal mining activities on the following described lands within the permit area at the Huntington #4 Mine, situated in the State of Utah, Emery County, and located:

Township 16 South, Range 7 East, SLBM

Section 8: SW1/4, S1/2 SE1/4
Section 9: S1/2 SW1/4, SW1/4 SE1/4
Section 16: All
Section 17: E1/2

This legal description is for the permit area of the Huntington #4 Mine. The permittee is authorized to conduct underground coal mining activities and related surface activities on the foregoing described property subject to the conditions of all applicable conditions, laws and regulations.

Sec. 3 **COMPLIANCE** - The permittee will comply with the terms and conditions of the permit, all applicable performance standards and requirements of the State Program.

Sec. 4 **PERMIT TERM** - This permit becomes effective on September 12, 1991, and expires on April 30, 1995.

Sec. 5 **ASSIGNMENT OF PERMIT RIGHTS** - The permit rights may not be transferred, assigned or sold without the prior written approval of the Division Director. Transfer, assignment or sale of permit rights must be done in accordance with applicable regulations, including but not limited to 30 CFR 740.13{e} and R614-303-300.

Sec. 6 **RIGHT OF ENTRY** - The permittee shall allow the authorized representative of the Division, including but not limited to inspectors, and representatives of the Office of Surface Mining Reclamation and Enforcement (OSM), without advance notice or a search warrant, upon presentation of appropriate credentials, and without delay to:

(a) have the rights of entry provided for in 30 CFR 840.12, R614-400-220, 30 CFR 842.13 and R614-400-110;

(b) be accompanied by private persons for the purpose of conducting an inspection in accordance with R614-400-100 and R614-400-200 when the inspection is in response to an alleged violation reported to the Division by the private person.

Sec. 7 **SCOPE OF OPERATIONS** - The permittee shall conduct underground coal mining activities only on those lands specifically designated as within the permit area on the maps submitted in the approved plan and approved for the term of the permit and which are subject to the performance bond.

Sec. 8 **ENVIRONMENTAL IMPACTS** - 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 the 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. 9 **CONDUCT OF OPERATIONS** - The permittee shall conduct its operations:

(a) in accordance with the terms of the permit to prevent significant, imminent environmental harm to the health and safety of the public; and

(b) utilizing methods specified as conditions of the permit by the Division in approving alternative methods of compliance with the performance standards of the Act, the approved Utah State Program and the Federal Lands Program.

Sec. 10 **EXISTING STRUCTURES** - As applicable, the permittee will comply with R614-301 and R614-302 for compliance, modification, or abandonment of existing structures.

Sec. 11 **RECLAMATION FEE PAYMENTS** - The operator shall pay all reclamation fees required by 30 CFR Part 870 for coal produced under the permit, for sale, transfer or use.

Sec. 12 **AUTHORIZED AGENT** - The permittee shall provide the names, addresses and telephone numbers of persons responsible for operations under the permit to whom notices and orders are to be delivered.

Sec. 13 **COMPLIANCE WITH OTHER LAWS** - The permittee shall comply with the provisions of the Water Pollution Control Act (33 USC 1151 et seq,) and the Clean Air Act (42 USC 7401 et seq), UCA 26-11-1 et seq, and UCA 26-13-1 et seq.

Sec. 14 **PERMIT RENEWAL** - Upon expiration, this permit may be renewed for areas within the boundaries of the existing permit in accordance with the Act, the approved Utah State Program and the Federal Lands Program.

Sec. 15 **CULTURAL RESOURCES** - If during the course of mining operations, previously unidentified cultural resources are discovered, the permittee shall ensure that the site(s) is not disturbed and shall notify the Division. The Division, after coordination with OSM, shall inform the permittee of necessary actions required. The permittee shall implement the mitigation measures required by Division within the time frame specified Division.

Sec. 16 APPEALS - The permittee shall have the right to appeal as provided for under R614-300-200.

The above conditions (Secs. 1-16) are also imposed upon the permittee's agents and employees. The failure or refusal of any of these persons to comply with these conditions shall be deemed a failure of the permittee to comply with the terms of this permit and the lease. The permittee shall require his agents, contractors and subcontractors involved in activities concerning this permit to include these conditions in the contracts between and among them. These conditions may be revised or amended, in writing, by the mutual consent of the Division and the permittee at any time to adjust to changed conditions or to correct an oversight. The Division may amend these conditions at any time without the consent of the permittee in order to make them consistent with any federal or state statutes and any regulations.

THE STATE OF UTAH

By: _____

Date: 9-12-91

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

_____

Authorized Representative of the Permittee

Date: 10/15/91

A:\PERMIT.H4

FEDERAL **Permit Number ACT/015/004** April 30, 1990

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
(801) 538-5340

This permit (five-year renewal), ACT/015/004, is issued for the state of Utah by the Utah Division of Oil, Gas and Mining (DOGM) to:

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

for the Huntington #4 Mine. A performance bond is filed with the DOGM in the amount of $144,041.00, payable to the state of Utah, Division of Oil, Gas and Mining, and the Office of Surface Mining, Reclamation and Enforcement (OSMRE). DOGM must receive a copy of this permit signed and dated by the permittee.

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

Sec. 2 **PERMIT AREA** - The permittee is authorized to conduct reclamation activities on the following described lands (as shown on the map appended as Attachment A) within the permit area at the Huntington #4 Mine, situated in the state of Utah, Emery County, and located:

This legal description is for the permit area (as shown on Attachment B) of the Huntington #4 Mine. The permittee is authorized to conduct underground coal mining activities connected with mining on the foregoing described property subject to the conditions of the leases, the approved mining plan, including all conditions and all other applicable conditions, laws and regulations.

Sec. 3 **PERMIT TERM** - This revised permit becomes effective on April 30, 1990, and expires on April 30, 1995.

Sec. 4 **ASSIGNMENT OF PERMIT RIGHTS** - The permit rights may not be transferred, assigned, or sold without the approval of the Director, DOGM. Transfer, assignment, or sale of permit rights must be done in accordance with applicable regulations, including but not limited to 30 CFR 740.13[e] and UMC 788.17-.19.

Sec. 5 **RIGHT OF ENTRY** - The permittee shall allow the authorized representative of the DOGM, including but not limited to inspectors, and representatives of OSMRE, without advance notice or a search warrant, upon presentation of appropriate credentials, and without delay to:

A. have the rights of entry provided for in 30 CFR 840.12, UMC 840.12, 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 UMC 842.12 and 30 CFR 842, when the inspection is in response to an alleged violation reported by the private person.

Sec. 6 **SCOPE OF OPERATIONS** - The permittee shall conduct reclamation activities only on those lands specifically designated as within the permit area on the maps submitted in the reclamation plan and permit application and approved for the term of the permit and which are subject to the performance bond.

Sec. 7 **ENVIRONMENTAL IMPACTS** - The permittee shall minimize any adverse impact to the environment or public health and safety through but not limited to:

A. accelerated monitoring to determine the nature and extent of noncompliance and the results of the noncompliance;

B. immediate implementation of measures necessary to comply; and

C. warning, as soon as possible after learning of solids, sludge, filter backwash or pollutants in the course of treatment or control of waters or emissions to the air in the manner required by the approved Utah State Program and the Federal Lands Program which prevents violation of any applicable state or federal law.

Sec. 9 **CONDUCT OF OPERATIONS** - The permittee shall conduct its operations:

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

B. utilizing methods specified as conditions of the permit by DOGM in approving alternative methods of compliance with the performance standards of the Act, the approved Utah State Program and the Federal Lands Program.

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

Sec. 11 **COMPLIANCE WITH OTHER LAWS** - The permittee shall comply with the provisions of the Water Pollution Control Act (33 USC 1151 et seq), and the Clean Air Act (42 USC 7401 et seq), UCA 26-11-1 et seq, and UCA 26-13-1 et seq.

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

Sec. 13 **CULTURAL RESOURCES** - If during the course of mining operations, previously unidentified cultural resources are discovered, the permittee shall ensure that the site(s) is not disturbed, and shall notify DOGM. DOGM, after coordination with OSMRE, shall inform the permittee of necessary actions required. The permittee shall implement the mitigation measures required by DOGM within the time frame specified by DOGM.

Sec. 14 APPEALS - The permittee shall have the right to appeal as provided for under UMC 787.

Sec. 15 SPECIAL CONDITIONS - There are no special conditions associated with this permitting action.

The above conditions (Secs. 1-15) are also imposed upon the permittee's agents and employees. The failure or refusal of any of these persons to comply with these conditions shall be deemed a failure of the permittee to comply with the terms of this permit and the lease. The permittee shall require his agents, contractors and subcontractors involved in activities concerning this permit to include these conditions in the contracts between and among them. These conditions may be revised or amended, in writing, by the mutual consent of DOGM and the permittee at any time to adjust to changed conditions or to correct an oversight. DOGM may amend these conditions at any time without the consent of the permittee in order to make them consistent with any new federal or state statutes and any new regulations.

THE STATE OF UTAH

By: Dianne R. Nielson

Date: 4-30-90

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

Richard L. Nielson

Authorized Representative of the Permittee

Date: 5-24-90

APPROVED AS TO FORM:

By: Martha K. Finlayson

Assistant Attorney General

Date: _____

AT115/3-6

AMENDMENTS

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

Michael O. Leavitt
Governor

Ted Stewart
Executive Director

James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

cc: D. Sing
F41
(Insp. Book)

February 24, 1995

Paige B. Beville, Manager
Environmental, Health, Safety
ARCO Coal Company
555 Seventeenth Street
Denver, CO 80202

Re: Updates of Mountain Coal Company Officers, Gordon Creek #2, #7, and #8 Mines, ACT/007/016-94D, Gordon Creek #3 and #6 Mines, ACT/007/017-94B, C.V. Spur, ACT/007/022-94C, Huntington #4 Mine, ACT/015/004-94B, Mountain Coal Company, Folders #3, Carbon and Emery Counties

Dear Ms. Beville:

The information submitted October 14, 1994 has been input into the AVS system and is approved for incorporation into the above-noted mining and reclamation plans.

Sincerely,

Pamela Grubaugh-Littig
Permit Coordinator

cc: Daron Haddock
Susan White
Bill Malencik, PFO

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

October 13, 1994

Ms. Pamela Grubaugh-Littig
Permit Supervisor
Utah Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Re: Update of Officers
for Mountain Coal Properties

Dear Ms. Littig:

Enclosed are 3 copies of updated pages for C.V. Spur, Huntington Canyon No. 4 Mine, Gordon Creek 3 and 6 Mine, and Gordon Creek 2, 7 and 8 Mine. The pages have been revised to show the latest change in officers for Mountain Coal Company.

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

Respectfully,

Dan W. Guy,
for Paige B Beville

Enclosures

cc: Paige B. Beville, MCC
Scot Anderson, MCC
File

Form DOGM - C1 (Last Revised 6/93) File Folder # 3

APPLICATION FOR PERMIT CHANGE

Title of Change: UPDATE OF OFFICERS (HUNTINGTON CYN. No. 4 MINE)

Permit Number: INA / 015 / 004

Mine: HUNT. CYN. NO. 4 MINE

Permittee: MOUNTAIN COAL

Description, include reason for change and timing required to implement:

☐ Yes	☑ No	1. Change in the size of the Permit Area? _____ acres ☐ increase ☐ decrease.
☐ Yes	☑ No	2. Change in the size of the Disturbed Area? _____ acres ☐ increase ☐ decrease.
☐ Yes	☑ No	3. Will permit change include operations outside the Cumulative Hydrologic Impact Area?
☐ Yes	☑ No	4. Will permit change include operations in hydrologic basins other than currently approved?
☐ Yes	☑ No	5. Does permit change result from cancellation, reduction or increase of insurance or reclamation bond?
☐ Yes	☑ No	6. Does permit change require or include public notice publication?
☐ Yes	☑ No	7. Permit change as a result of a Violation? Violation #
☐ Yes	☑ No	8. Permit change as a result of a Division Order? D.O.#
☐ Yes	☑ No	9. Permit change as a result of other laws or regulations? Explain:
☐ Yes	☑ No	10. Does permit change require or include ownership, control, right-of-entry, or compliance information?
☐ Yes	☑ No	11. Does the permit change affect the surface landowner or change the post mining land use?
☐ Yes	☑ No	12. Does permit change require or include collection and reporting of any baseline information?
☐ Yes	☑ No	13. Could the permit change have any effect on wildlife or vegetation outside the current disturbed area?
☐ Yes	☑ No	14. Does permit change require or include soil removal, storage or placement?
☐ Yes	☑ No	15. Does permit change require or include vegetation monitoring, removal or revegetation activities?
☐ Yes	☑ No	16. Does permit change require or include construction, modification, or removal of surface facilities?
☐ Yes	☑ No	17. Does permit change require or include water monitoring, sediment or drainage control measures?
☐ Yes	☑ No	18. Does permit change require or include certified designs, maps, or calculations?
☐ Yes	☑ No	19. Does permit change require or include underground design or mine sequence and timing?
☐ Yes	☑ No	20. Does permit change require or include subsidence control or monitoring?
☐ Yes	☑ No	21. Have reclamation costs for bonding been provided or revised for any change in the reclamation plan?
☐ Yes	☑ No	22. Is permit change within 100 feet of a public road or perennial stream or 500 feet of an occupied dwelling?
☐ Yes	☑ No	23. Is this permit change coal exploration activity ☐ inside ☐ outside of the permit area?

☑ **Attach 3 complete copies of proposed permit change as it would be incorporated into the Mining and Reclamation Plan.**

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

Dan V. Guy for Paige Boulle 10/13/94

Signed - Name - Position - Date

Subscribed and sworn to before me this 13 day of 10, 19 94

Dana Ballard
Notary Public

My Commission Expires: 9-27, 19 97

Attest: STATE OF UTAH
COUNTY OF CARBON

DANA BALLARD
NOTARY PUBLIC - STATE of UTAH
865 EAST 2800 SOUTH
PRICE, UTAH 84501
COMM. EXP. 9-27-97

Received by Oil, Gas & Mining

ASSIGNED PERMIT CHANGE NUMBER

Form DOGM - C2 (Last Revised 6/93)

File Folder #

Application for Permit Change
Detailed Schedule of Changes to the Permit

Title of Change: UPDATE OF OFFICERS

Permit Number: INA / 015 / 004

Mine: HUNT. CYN. NO. 4 MINE

Permittee: MOUNTAIN COAL

Provide a detailed listing of all changes to the mining and reclamation plan which will be required as a result of this proposed permit change. Individually list all maps and drawings which are to be added, replaced, or removed from the plan. Include changes of the table of contents, section of the plan, pages, or other information as needed to specifically locate, identify and revise the exiting mining and reclamation plan. **Include page, section and drawing numbers as part of the description.**

			DESCRIPTION OF MAP, TEXT, OR MATERIALS TO BE CHANGED
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☐ REPLACE	☑ REMOVE	REMOVE CH. 2 PAGES 2-4 AND 2-5.
☐ ADD	☐ REPLACE	☐ REMOVE	
☐ ADD	☑ REPLACE	☐ REMOVE	REPLACE WITH PAGES 2-4, 2-5 AND 2-5.1.
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Any other specific or special instructions required for insertion of this proposal into the Mining and Reclamation Plan?

PERMIT CHANGE CHRONOLOGY

Title of Proposal:	PERMIT NUMBER: INA/015/004
Description: UPDATE OF OFFICERS	PERMIT CHANGE #:
	PERMITTEE: MOUNTAIN COAL
	MINE NAME: HUNT. CYN. NO. 4 MINE

DATE		DOCUMENT ALL ACTIVITIES ASSOCIATED WITH THIS PERMIT CHANGE
	☐Sent ☒Recv'd.	Initial Application for Permit Change Received from Permittee
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☐ ADDITIONAL SHE

2.2.5 Operator. The operator, if the operator is a person different from the applicant, including his or her telephone number:

The operator is the same as the applicant.

2.2.6 Resident Agent. The resident agent of the applicant who will accept service of process, including his or her telephone number:

The Corporation Trust Company
1209 Orange Street,
Wilmington, Delaware 19801
Telephone Number: 1-(800)441-9820

2.2.7 Business Designation. A statement of whether the applicant is a corporation, partnership, single proprietorship, association or other business entity:

The applicant is a Delaware corporation.

2.2.7.1 Officers and Directors of the Applicant. The names and addresses of every officer, partner, director, or other person performing a function similar to a director of the applicant:

OFFICER	TITLE	ADDRESS
E.E. DiClaudio	President and Director	Mountain Coal Co. P.O. Box 591 Somerset, Colo. 81434
C.A. Youngs	Vice President and Director	Atlantic Richfield Co. 555 Seventeenth Street Denver, Colorado 80202
R.D. Pick	Vice President	Atlantic Richfield Co. 555 Seventeenth Street Denver, Colorado 80202
M.W. DeGenring	Vice President and Director	Atlantic Richfield Co. 555 Seventeenth Street Denver, Colorado 80202
M.C. Recchuite	Treasurer	Atlantic Richfield Co. ARCO Plaza 515 S. Flower Street Los Angeles, CA 90071

H.L. Edwards	Vice President and Secretary	Atlantic Richfield Co. ARCO Plaza 515 S. Flower Street Los Angeles, CA 90071
S.R. Mut	Chairman and Director	Atlantic Richfield Co. 555 Seventeenth Street Denver, Colorado 80202
C.P. Cooley	Assistant Treasurer	Atlantic Richfield Co. ARCO Plaza 515 S. Flower Street Los Angeles, CA 90071
K.R. Collard	Assistant Secretary	Atlantic Richfield Co. 555 Seventeenth Street Denver, Colorado 80202
B.M. Hinds	Assistant Secretary	Atlantic Richfield Co. ARCO Plaza 515 S. Flower Street Los Angeles, CA 90071
T.F. Linn	Assistant Secretary and Director	Atlantic Richfield Co. 555 Seventeenth Street Denver, Colorado 80202
G.D. Luttrell	Assistant Secretary	Atlantic Richfield Co. 555 Seventeenth Street Denver, Colorado 80202
S.G. McElyea	Assistant Secretary	Atlantic Richfield Co. 555 Seventeenth Street Denver, Colorado 80202
P.B. Fisher	Assistant Secretary	Atlantic Richfield Co. 555 Seventeenth Street Denver, Colorado 80202

2.2.7.2 Principal Shareholder of the Applicant. The name and address of any person who is a principal shareholder of the applicant:

Atlantic Richfield Co.
555 Seventeenth Street
Denver, Colorado 80202
(Principal and only shareholder)

2.2.7.3 Names Under Which Applicant and Principal Shareholder Operated U.S. Coal Mines. Names under which the applicant, partner, or principal shareholder previously operated underground or surface coal mining operations in the United States within the five years preceeding the date of application:

(i) Beaver Creek Coal Company
Price, Utah

(ii) West Elk Coal Company
Somerset, Colorado

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
James W. Carter
Division Director

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

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

RECEIVED
APR 1 4 1994
Engineering Dept.
MOUNTAIN COAL COMPANY

April 11, 1994

Ms. Kathleen G. Welt
Environmental Supervisor
Mountain Coal Company
P.O. Box 591
Somerset, CO 81434

Re: Approval to Remove Parshall Flume, Mountain Coal Company, Huntington #4 Mine, ACT/015/004-94A, Folder #3, Emery County, Utah

Dear Ms. Welt:

The proposal submitted to remove the Parshall Flume has been reviewed and is approved.

Sincerely,

Pamela Grubaugh-Littig
Permit Supervisor

Mountain Coal Company
Trail Mountain Mine
Post Office Box 1378
Price, Utah 84501
Telephone 801 637-5050 (Price Office)
801 637-5203 (Mine Office)
801 748-2140 (Mine Site)

January 18, 1994

Pamela Grubaugh-Littig
Permit Supervisor
Utah Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center, Suite 3350
Salt Lake City, Utah 84180-1203

Attention: Susan White

Re: Request to Remove Parshall Flume
Mountain Coal Company
Huntington Canyon No. 4 Mine
INA/015/004
Emery County, Utah

Dear Ms. Littig:

At the request of Susan White, I have discussed the possibility of removing the 2-foot Parshall Flume in lower Mill Fork Canyon with Walt Novak of the U.S. Forest Service. Mr. Novak has indicated they have no need for the flume, and would approve its removal and clean-up, after which time, the Special Use Permit for this site could be canceled.

Mountain Coal Company is therefore requesting your approval to modify Water Monitoring Station 4-8-W by removal of the Parshall Flume. The area will be cleaned up and raked out to the satisfaction of the U.S. Forest Service. Mr. Novak has indicated that no reseeding of the small area should be necessary if we do the work early in the year, allowing for natural riparian vegetation to return. The site will continue to be monitored using a portable flume for flow measurements. Monitoring will continue to be on a quarterly basis until Phase II Bond Release, and then on a bi-annual basis until final bond release.

I have enclosed 3 copies of revised pages for the permit, along with the necessary permit change forms. A copy of this information has also been sent to Mr. Novak at the U.S. Forest Service.

We are prepared to initiate this removal upon approval from the Division and the U.S.F.S.. If you have any questions, or need any further information, please let me know.

Respectfully,

Dan W. Guy

Dan W. Guy
for
Kathleen G. Welt

cc: Kathy Welt- MCC
Walt Novak- USFS
File

Form DOGM - C1 (Last Revised 6/95)

File Folder # 3

APPLICATION FOR PERMIT CHANGE

Title of Change: Request to Remove Parshall Flume

Permit Number: INA/015/004

Mine: Huntington Canyon No. 4

Permittee: Mountain Coal Co.

Description, include reason for change and timing required to implement:

No Longer Needed. - Spring 1994.

☐ Yes	☒ No	1. Change in the size of the Permit Area? _____ acres ☐ increase ☐ decrease.
☐ Yes	☒ No	2. Change in the size of the Disturbed Area? _____ acres ☐ increase ☐ decrease.
☐ Yes	☒ No	3. Will permit change include operations outside the Cumulative Hydrologic Impact Area?
☐ Yes	☒ No	4. Will permit change include operations in hydrologic basins other than currently approved?
☐ Yes	☒ No	5. Does permit change result from cancellation, reduction or increase of insurance or reclamation bond?
☐ Yes	☒ No	6. Does permit change require or include public notice publication?
☐ Yes	☒ No	7. Permit change as a result of a Violation? Violation #
☐ Yes	☒ No	8. Permit change as a result of a Division Order? D.O.#
☐ Yes	☒ No	9. Permit change as a result of other laws or regulations? Explain:
☐ Yes	☒ No	10. Does permit change require or include ownership, control, right-of-entry, or compliance information?
☐ Yes	☒ No	11. Does the permit change affect the surface landowner or change the post mining land use?
Yes	☒ No	12. Does permit change require or include collection and reporting of any baseline information?
☐ Yes	☒ No	13. Could the permit change have any effect on wildlife or vegetation outside the current disturbed area?
☐ Yes	☒ No	14. Does permit change require or include soil removal, storage or placement?
☐ Yes	☒ No	15. Does permit change require or include vegetation monitoring, removal or revegetation activities?
☒ Yes	☐ No	16. Does permit change require or include construction, modification, or removal of surface facilities?
☐ Yes	☒ No	17. Does permit change require or include water monitoring, sediment or drainage control measures?
☐ Yes	☒ No	18. Does permit change require or include certified designs, maps, or calculations?
☐ Yes	☒ No	19. Does permit change require or include underground design or mine sequence and timing?
☐ Yes	☒ No	20. Does permit change require or include subsidence control or monitoring?
☒ Yes	☐ No	21. Have reclamation costs for bonding been provided or revised for any change in the reclamation plan?
☒ Yes	☐ No	22. Is permit change within 100 feet of a public road or perennial stream or 500 feet of an occupied dwelling?
☐ Yes	☒ No	23. Is this permit change coal exploration activity ☐ inside ☐ outside of the permit area?

☒ Attach 3 complete copies of proposed permit change as it would be incorporated into the Mining and Reclamation Plan.

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

Dan N. Guy for Kathleen H. Velk 1/18/94

Signed - Name - Position - Date

Subscribed and sworn to before me this 18 day of Jan., 19 94

Dana Ballard

Notary Public

My Commission Expires: 9-27, 19 97

Attest: STATE OF Utah

COUNTY OF Carbon

DANA BALLARD
NOTARY PUBLIC · STATE of UTAH
865 EAST 2800 SOUTH
PRICE, UTAH 84501
COMM. EXP. 9-27-97

Received by Oil, Gas & Mining

ASSIGNED PERMIT CHANGE NUMBER

Application for Permit Change
Detailed Schedule of Changes to the Permit

Title of Change: Request to Remove Parshall Flume

Permit Number: INA1015 1004

Mine: Huntington Canyon No. 4

Permittee: Mountain Coal Co.

Provide a detailed listing of all changes to the mining and reclamation plan which will be required as a result of this proposed permit change. Individually list all maps and drawings which are to be added, replaced, or removed from the plan. Include changes of the table of contents, section of the plan, pages, or other information as needed to specifically locate, identify and revise the exiting mining and reclamation plan. Include page, section and drawing numbers as part of the description.

			DESCRIPTION OF MAP, TEXT, OR MATERIALS TO BE CHANGED
☐ ADD	☒ REPLACE	☐ REMOVE	Pages 7-86, 7-87, 7-88, 7-89 and 7-90.
☐ ADD	☐ REPLACE	☐ REMOVE	
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Any other specific or special instructions required for insertion of this proposal into the Mining and Reclamation Plan?

PERMIT CHANGE CHRONOLOGY

Title of Proposal: Request to Remove Parshall Flume	PERMIT NUMBER: INA/015/004
Description:	PERMIT CHANGE #:
	PERMITTEE: Mountain Coal Co.
	MINE NAME: Huntington Canyon No. 4

DATE		DOCUMENT ALL ACTIVITIES ASSOCIATED WITH THIS PERMIT CHANGE
	☐Sent ■Recv'd.	Initial Application for Permit Change Received from Permittee
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☐ ADDITIONAL SHEETS

Springs and Seeps

The only spring monitored in the past at this mine was the Little Bear Spring ;(formerly Station 4-1-W). The spring is now totally captured by the Castle Valley Special Service District and used for culinary water supply. The Service District monitors the spring flow and quality as needed, and controls access to the water by a locked box. Since the spring is adequately monitored by this agency, and data is available upon request, Mountain Coal Company has eliminated this station from its monitoring program.

7.2.6 Surface Water Monitoring Plans

Upper Mill Fork (Station 4-3-W)

This site is monitored at the upper end of the Forest Service Road in Mill Fork Canyon. The sediment sampler, staff gage and creat gage were previously removed at the request of the Forest Service. Flow is measured by a portable flume. Monitoring will be done on a quarterly basis until Phase II Bond Release, and then on a bi-annual (2 per annum) basis until final Bond Release.

Inflow to Sediment Pond (Station 4-6-W)

This station is monitored on a monthly basis and reflects surface runoff from the site into the sediment pond. It is located at the sediment pond inlet. The station will continue to be monitored on a monthly basis until Phase II Bond Release, and then eliminated along with the pond.

Out flow from Sediment Pond (Station 4-7-W)

This station is located at the sediment pond outlet and is also a U.P.D.E.S. Discharge Point. The station is monitored monthly as required by the U.P.D.E.S. Permit for the property. Monitoring will continue per U.P.D.E.S. Permit requirements until Phase II Bond Release. After that time, the Station will be eliminated along with the pond.

Lower Mill Fork (Station 4-8-W)

This station includes a 2 foot width by 1.5 foot depth Parshall flume. It is located at the lower end of the Mill

Fork Canyon, on U.S. Forest Service property, and is covered by a Special Use Permit with the U.S. Forest Service.

Discussions with the U.S. Forest Service have indicated no further need for the Parshall Flume at this location; therefore, upon approval from the Division and U.S.F.S., Mountain Coal Company will remove the flume and all other associated material and clean up the area. This is anticipated to be done in the spring of 1994, to allow for natural revegetation of the site during this year. Also, when approved by the U.S.F.S., the Special Use Permit for this site will be canceled.

The station will continue to be monitored, with flow measured by a portable flume. Monitoring will be on a quarterly basis until Phase II Bond Release, and then on a bi-annual (2 per annum) basis until final bond release.

7.2.6 Surface Water Monitoring Plans

Water Quality and NPDES Discharges

Water Quality Samples are collected at designated sites on Upper Mill Fork (4-3-W) and on Lower Mill Fork (4-8-W).

Water quality samples are also collected from the in- flow to the sediment pond 4-6-W and from the outflow from the sediment pond 4-7-W.

A description of the Surface Water Monitoring Program is provided in Figure 7-10. Locations are shown on Plate 7-3.

Location 4-7-W is an NPDES discharge point. Location 4-7-W is monitored for possible discharge of stormwater runoff from surface reclaimed areas.

Monitoring Frequency

Station 4-3-W and 4-8-W are monitored quarterly for flow and quality until Phase II Bond Release, and then will be monitored bi-annually until final Bond Release. Stations 4-6-W and 4-7-W are monitored monthly for flow and quality when accessible. 4-7-W is an UPDES Discharge Point, and is monitored according to the permit. Stations 4-6-W and 4-7-W will be eliminated after Phase II Bond Release and removal of the ponds and UPDES requirements.

Figure 7-10

STREAMFLOW AND WATER QUALITY MONITORING PROGRAM

HUNTINGTON CANYON NO. 4 MINE

Station	Location	Type	Frequency	Flow Device	Results to:	Remarks
4-3-W	Upper Mill Fork	Intermittent Stream	*Quarterly	Portable Flume	DOG&M	
4-6-W	Inflow to Sed. Pond	Surface Runoff	**Monthly	Portable Flume	DOG&M	
4-7-W	Outflow from Sed. Pond	Discharge	**Monthly	Portable Flume	DOG&M EPA:DEQ	Monitored as per NPDES Permit
4-8-W	Lower Mill Fork	Intermittent Stream	*Quarterly	*** Portable Flume	DOG&M	

*Frequency will be changed to Bi-Annual after Phase II Bond Release.

** Stations will be eliminated after Phase II Bond Release.

*** After removal of Parshall Flume

OTHER PERMITS

Permit No. UTG040000
Industrial

STATE OF UTAH
DIVISION OF WATER QUALITY
DEPARTMENT OF ENVIRONMENTAL QUALITY
SALT LAKE CITY, UTAH

AUTHORIZATION TO DISCHARGE UNDER THE

UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM
(UPDES)

GENERAL PERMIT FOR COAL MINING

In compliance with provisions of the Utah *Water Quality Act, Title 19, Chapter 5, Utah Code Annotated ("UCA") 1953, as amended* (the *"Act"*),

Mountain Coal Company Huntington Canyon No. 4 Mine located approximately 15 miles north west of Huntington, Utah as identified in the Notice of Intent, application UTG040015 is authorized to discharge at outfall located at latitude 39°25'27" and longitude 111°08'34"

to Mill Fork Canyon tributary to Huntington Creek

in accordance with discharge point(s), effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on August 1, 1993.

This general permit and the authorization to discharge shall expire at midnight, April 30, 1998.

Signed this 22th day of July, 1993.

Authorized Permitting Official
Executive Secretary
Utah Water Quality Board

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I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

A. Definitions.

1. The "30-day (and monthly) average" is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.

2. The "7-day (and weekly) average" is the arithmetic average of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self- monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains the Saturday.

3. "Daily Maximum" ("Daily Max.") is the maximum value allowable in any single sample or instantaneous measurement.

4. "Composite samples" shall be flow proportioned. The composite sample shall, as a minimum, contain at least four (4) samples collected over the composite sample period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six (6) hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:

   a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;

   b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;

   c. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,

   d. Continuous collection of sample, with sample collection rate proportional to flow rate.

5. A "grab" sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.

6. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

7. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

8. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

9. "Executive Secretary" means Executive Secretary of the Utah Water Quality Board.

10. "EPA" means the United States Environmental Protection Agency.

11. "Act" means the "*Utah Water Quality Act*".

12. "Best Management Practices" ("*BMPs*") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. *BMPs* also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

13. "*CWA*" means *Federal Water Pollution Control Act*, as amended, by *The Clean Water Act of 1987*.

14. "Point Source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharges.

15. "Significant spills" includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under *Section 311* of the *Clean Water Act* (see *40 CFR 110.10* and *40 CFR 117.21*) or *Section 102* of *CERCLA* (see *40 CFR 302.4*).

16. "Storm water" means storm water runoff, snow melt runoff, and surface runoff and drainage.

17. "Waste pile" means any noncontainerized accumulation of solid, nonflowing waste that is used for treatment or storage.

18. "10-year, 24-hour precipitation event" means the maximum 24-hour precipitation event with a probable reoccurrence interval of once in 10 years. This information is available in *Weather Bureau Technical Paper No. 40*, May 1961 and *NOAA Atlas 2*, 1973 for the 11 Western States, and may be obtained from the National Climatic Center of the Environmental Data Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

19. The term "coal preparation plant" means a facility where coal is crushed, screened, sized, cleaned, dried, or otherwise prepared and loaded for transit to a consuming facility.

20. The term "coal preparation plant associated areas" means the coal preparation plant yards, immediate access roads, <u>coal refuse piles</u>, and <u>coal storage piles</u> and <u>facilities</u>.

21. "Alkaline mine drainage" means mine drainage which before any treatment has a pH equal to or greater than 6.0 and total iron concentration less than 10 mg/l.

22. The term "settleable solids" is that matter measured by the volumetric method specified below:

Fill an Imhoff cone to the one-liter mark with a thoroughly mixed sample. Allow to settle undisturbed for 45 minutes. Gently stir along the inside surface of the cone with a stirring rod. Allow to settle undisturbed for 15 minutes longer. Record the volume of settled material in the cone as milliliters per liter. Where a separation of settleable and floating material occurs, do not include the floating material in the reading.

B. Criteria for Inclusion in the General Permit for Coal Mining

This General permit shall apply only to the discharge of treated wastewater from:

Coal mining operations either new or existing in Utah which include or will include in part or in a whole alkaline mine water drainage, storm water runoff from coal preparation plant associated areas, active mining areas, and post mining areas until the performance bond is released. The total amount of total dissolved solids discharged from all mine water and decant operations is limited to one ton per day.

C. Notice of Intent for a General Permit for Coal Mining

Any facility which desires a general permit for coal mining and meets the requirements of Part I.B. can be issued a general permit by submitting a notice of intent (NOI) to the Division of Water Quality and EPA at the addresses listed on page 10 of this permit.

The NOI shall include:

a. A completed Environmental Protection Agency Application (EPA Form 3510-1) or equivalent information.

b. Location and identification number (such as 001, 002, etc.) of each existing discharge and/or proposed discharge point(s). This includes the latitude and longitude to the nearest 15 seconds and the name of the receiving water(s).

c. A description of the source of the wastewater for each discharge point.

d. A description of the treatment given or proposed for the wastewater at each discharge point and if necessary a justification of why no treatment is required.

e. Flow characteristics for each discharge point such as whether flow is or will be continuous or intermittent and indicate projected and/or actual average and maximum flows in gpd.

f. Data for each discharge point for the following parameters:

1) Biochemical oxygen demand (BOD_5)
2) Chemical oxygen demand (COD)
3) Total organic carbon (TOC)
4) Total suspended solids (TSS)
5) Flow
6) Ammonia (as N)
7) Oil and grease

8) Temperature
9) pH
10) Total dissolved solids (TDS)
11) Total iron and metals, cyanide, phenols located in Table III UAC R317-8-3.12
12) Date and time of sampling for each parameter
13) Date and time of analysis for each parameter
14) Utah certified laboratory which has completed the analysis for each parameter

If no data is available, indicate why the data is not available.
The Executive Secretary may waive the reporting requirements for any of these pollutants and parameters if the applicant submits a request for such a waiver before or with the NOI which demonstrates that information adequate to support issuance of the permit can be obtained through less stringent reporting requirements.

g. For each discharge point the presence or absence of any toxic and/or priority pollutants as listed by EPA in *40 CFR Part 403*.

h. Best management practice plan or sediment runoff control plan approved by the Division of Oil, Gas and Mining.

D Description of Discharge Point(s).

The authorization to discharge provided under this permit is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under a UPDES permit is a violation of the *Act* and may be subject to penalties under the *Act*. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge may be subject to criminal penalties as provided under the *Act*.

Outfall Number	Location of Discharge Points
001	Sediment pond outfall to Mill Fork Canyon

E. Narrative Standard.

It shall be unlawful, and a violation of this permit, for the permittee to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum or other nuisances such as color, odor or taste, or conditions which produce undesirable aquatic life or which produces objectionable tastes in edible aquatic organisms; or concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, or undesirable human health effects, as determined by bioassay or other tests performed in accordance with standard procedures.

F. Specific Limitations and Self-monitoring Requirements.

1. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfalls 001 and 002. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Discharge Limitations a/ Average 30-Day	Average 7-Day	Daily Maximum	Monitoring Requirements Measurement Frequency	Sample Type
Flow, gpd	NA	NA	NA	Monthly	Measured b/
Oil & Grease, mg/L	NA	NA	10	Monthly	Grab
Total Suspended Solids, mg/L	25	35	70	Monthly	Grab e/
Total Iron, mg/l	NA	NA	1.0 c/	Monthly	Grab e/
Total Dissolved Solids lbs/day	NA	NA	d/	Monthly	Grab e/

The pH shall not be less than 6.5 standard units nor greater than 9.0 standard units in any sample and shall be monitored monthly by a grab sample.

There shall be no visible sheen or floating solids or visible foam in other than trace amounts.

There shall be no discharge of sanitary wastes or any process water from coal preparation plants.

N.A. - Not Applicable.

a/ See Definitions, *Part I.A* for definition of terms.

b/ For intermittent discharge, the duration of the discharge shall be reported along with the flow.

c/ Values up to 2 mg/l may be approved where the permittee provides sufficient information that water quality standards will not be violated.

d/ The total amount of total dissolved solids (TDS) discharged from all mine water and decant operations is limited to one ton (2000 pounds) per day.

e/ These samples may also be a composite sample.

2. Samples taken in compliance with the monitoring requirements specified above shall be taken from the effluent before mixing with any receiving water.

3. Any overflow, increase in volume of a discharge or discharge from a bypass system caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) at all surface runoff pond (outfalls) may comply with the following limitation instead of the total suspended solids limitations contained in Part I.F.1:

Effluent Characteristics	Daily Maximum
Settleable Solids	0.5 mL/L

In addition to the monitoring requirements specified under Part I.F.1, all effluent samples collected during storm water discharge events shall also be analyzed for settleable solids. Such analyses shall be conducted on either grab or composite samples.

4. Any overflow, increase in volume of a discharge or discharge from a bypass system caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) at all surface runoff pond outfalls may comply with the following limitations instead of the otherwise applicable limitations:

The pH shall not be less than 6.5 standard units nor greater than 9.0 standard units. However, as stated under Part I.F.3, all effluent samples collected at all surface runoff pond outfalls during storm water discharge events shall be analyzed for settleable solids and the parameters identified under Part I.F.1.

5. The operator shall have the burden of proof that the discharge or increase in discharge was cau by the applicable precipitation event described in Parts I.F.3. and F.4. The alternate limitation in Parts I.F.4. and F.5. shall not apply to treatment systems that treat underground mine water only.

6. Best Management Practices.

   a. The company shall implement and maintain best management practices for the control of road salt storage for areas discharging to waters of the State. This shall include enclosure or coverage to prevent exposure to precipitation, except exposure resulting from adding or removing materials from the pile. Dischargers shall demonstrate compliance with the enclosure provision as expeditiously as practicable, but in no event later than October 1, 1995.

   b. The facility must minimize the discharge of salt by using the largest practicable amount of saline water for process and dust control. After April 30, 1994 there shall be no use of gypsum for rock dusting unless the permittee provides sufficient information to the Executive Secretary such that approval is granted based upon the Colorado River Basin Salinity Control Forum Policies and the fact that it will not significantly increase total dissolved solids concentrations.

   c. Sediment and Erosion Control. Within six months of permit issuance, the permittee shall develop a stormwater pollution prevention plan which identifies areas which, due to topography, road construction with waste materials, other activities, or other factors, have a high potential for significant soil erosion, and identify structural, vegetative, and stabilization measures to limit erosion. (The general permit for storm water discharges associated with industrial activity contains information for developing a satisfactory plan).

d. Management of Runoff. The stormwater pollution prevention plan shall be implemented as soon as practical but no later than one year after permit issuance. Appropriate measures for small areas may include: silt fences, sediment traps, vegetative swales and practices, reuse of collected storm water (such as for a process or as an irrigation source), inlet controls (such as oil/water separators), snow management activities, infiltration deicers, and wet detention/retention devices.

e. Comprehensive Site Compliance Evaluation. Qualified personnel shall conduct site compliance evaluations at appropriate intervals specified in the stormwater pollution prevention plan, but in no case less than once a year. Such evaluations shall provide:

(1) Areas contributing to a storm water discharge associated with industrial activity shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed.

(2) Based on the results of the inspection, the description of potential pollutant sources identified in the plan and pollution prevention measures and controls identified in the plan shall be revised as appropriate within two weeks of such inspection and shall provide for implementation of any changes to the plan in a timely manner, but in no case more than twelve weeks after the inspection.

(3) A report summarizing the scope of the inspection, personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken shall be made and retained as part of the storm water pollution prevention plan for at least one year after coverage under this permit terminates. The report shall identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. The report shall be signed in accordance with *Part IV.G Signatory Requirements* of this permit.

(4) Where annual site inspections are shown in the plan to be impractical for inactive mining sites due to the remote location and inaccessibility of the site, site inspections required under this part shall be conducted at appropriate intervals specified in the plan, but, in no case less than once in three years.

f. Consistency with other plans. Plans may reflect requirements for *Spill Prevention Control and Countermeasure ("SPCC")* plans developed for the facility under *Section 311* of the *CWA* or *Best Management Practices ("BMP")* otherwise required by this permit for the facility as long as such requirement is incorporated into the plan.

II. MONITORING, RECORDING AND REPORTING REQUIREMENTS

A. Representative Sampling. Samples taken in compliance with the monitoring requirements established under *Part I* shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge. Sludge samples shall be collected at a location representative of the quality of sludge immediately prior to the use-disposal practice.

B. Monitoring Procedures. Monitoring must be conducted according to test procedures approved under *Utah Administrative Code ("UAC") R317-2-10*, unless other test procedures have been specified in this permit.

C. Penalties for Tampering. The *Act* provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six months per violation, or by both.

D. Reporting of Monitoring Results. Monitoring results obtained during the previous month shall be summarized and reported monthly on a Discharge Monitoring Report Form (EPA No. 3320-1), postmarked no later than the 28th day of the month following the completed reporting period. The first report is due on August 28, 1993. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part IV.G)*, and submitted to the Director, Division of Water Quality and to EPA at the following addresses:

original to: Department of Environmental Quality
Division of Water Quality
288 North 1460 West
PO Box 144870
Salt Lake City, Utah 84114-4870

copy to: United States Environmental Protection Agency Region VIII
Denver Place
999 18th Street, Suite 500
Denver, Colorado 80202-2466
Attention: Water Management Division
Compliance Branch (8WM-C)

E. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any Compliance Schedule of this permit shall be submitted no later than 14 days following each schedule date.

F. Additional Monitoring by the Permittee. If the permittee monitors any parameter more frequently than required by this permit, using test procedures approved under *UAC R317-2-10* or as otherwise specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Such increased frequency shall also be indicated. Only those parameters required by the permit need to be reported.

G. Records Contents. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements:
2. The individual(s) who performed the sampling or measurements;
3. The date(s) and time(s) analyses were performed;
4. The individual(s) who performed the analyses;
5. The analytical techniques or methods used; and,
6. The results of such analyses.

H. Retention of Records. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application. This period may be extended by request of the Executive Secretary at any time. A copy of this UPDES permit must be maintained on site during the duration of activity at the permitted location.

I. Twenty-four Hour Notice of Noncompliance Reporting.

1. The permittee shall (orally) report any noncompliance which may seriously endanger health or environment as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of circumstances. The report shall be made to the Division of Water Quality, (801) 538-6146, or 24 hour answering service (801) 536-4123.

2. The following occurrences of noncompliance shall be reported by telephone (801) 536-4123 as soon as possible but no later than 24 hours from the time the permittee becomes aware of the circumstances:

   a. Any noncompliance which may endanger health or the environment;

   b. Any unanticipated bypass which exceeds any effluent limitation in the permit (See *Part III.G, Bypass of Treatment Facilities.*);

   c. Any upset which exceeds any effluent limitation in the permit (See *Part III.H, Upset Conditions.*); or,

   d. Violation of a maximum daily discharge limitation for any of the pollutants listed in the permit.

3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:

   a. A description of the noncompliance and its cause;

   b. The period of noncompliance, including exact dates and times;

   c. The estimated time noncompliance is expected to continue if it has not been corrected; and,

d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

e. Steps taken, if any, to mitigate the adverse impacts on the environment and human health during the noncompliance period.

4. The Executive Secretary may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Division of Water Quality, (801) 538-6146.

5. Reports shall be submitted to the addresses in *Part II.D, Reporting of Monitoring Results.*

J. Other Noncompliance Reporting. Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for *Part II.D* are submitted. The reports shall contain the information listed in *Part II.J.3.*

K. Inspection and Entry. The permittee shall allow the Executive Secretary, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and,

4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the *Act*, any substances or parameters at any location.

III. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give advance notice to the Executive Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

B. Penalties for Violations of Permit Conditions. The *Act* provides that any person who violates a permit condition implementing provisions of the *Act* is subject to a civil penalty not to exceed $10,000 per day of such violation. Any person who willfully or negligently violates permit conditions of the Act is subject to a fine not exceeding $25,000 per day of violation; Any person convicted under *UCA 19-5-115(2)* a second time shall be punished by a fine not exceeding $50,000 per day. Except as provided at *Part III.G, Bypass of Treatment Facilities* and *Part III.H, Upset Conditions*, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

C. Need to Halt or Reduce Activity not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

F. Removed Substances. Collected screening, grit, solids, sludges, or other pollutants removed in the course of treatment shall be buried or disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not directly enter either the final effluent or waters of the state by any other direct route.

G. Bypass of Treatment Facilities.

1. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2 and 3 of this section. Return of removed substances, as described in *Part III.F*, to the discharge stream shall not be considered a bypass under the provisions of this paragraph.

2. Notice:

   a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten (10) days before the date of the bypass.

b. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required under *Part II.I, Twenty-four Hour Reporting*.

3. Prohibition of bypass.

a. Bypass is prohibited and the Executive Secretary may take enforcement action against a permittee for a bypass, unless:

(1) The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage ;

(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and,

(3) The permittee submitted notices as required under paragraph 2 of this section.

b. The Executive Secretary may approve an anticipated bypass, after considering its adverse effects, if the Executive Secretary determines that it will meet the three conditions listed above in paragraph 3.a of this section.

H. Upset Conditions.

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of paragraph 2. of this section are met. Executive Secretary's administrative determination regarding a claim of upset cannot be judiciously challenged by the permittee until such time as an action is initiated for noncompliance.

2. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

a. An upset occurred and that the permittee can identify the cause(s) of the upset;

b. The permitted facility was at the time being properly operated;

c. The permittee submitted notice of the upset as required under *Part II.I, Twenty-four Hour Notice of Noncompliance Reporting*; and,

d. The permittee complied with any remedial measures required under *Part III.D, Duty to Mitigate*.

3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

I. **Toxic Pollutants.** The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of *The Water Quality Act of 1987* for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

J. **Changes in Discharge of Toxic Substances.** Notification shall be provided to the Executive Secretary as soon as the permittee knows of, or has reason to believe:

1. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

   a. One hundred micrograms per liter (100 ug/L);

   b. Two hundred micrograms per liter (200 ug/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/L) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

   c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with *UAC R317-8-3.4(7)* or (10); or,

   d. The level established by the Executive Secretary in accordance with *UAC R317-8-4.2(6)*.

2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

   a. Five hundred micrograms per liter (500 ug/L);

   b. One milligram per liter (1 mg/L) for antimony:

   c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with *UAC R317-8-3.4(9)*; or,

   d. The level established by the Executive Secretary in accordance with *UAC R317-8-4.2(6)*.

K. **Industrial Pretreatment.** Any wastewaters discharged to the sanitary sewer, either as a direct discharge or as a hauled waste, are subject to Federal, State and local pretreatment regulations. Pursuant to Section 307 of *The Water Quality Act of 1987*, the permittee shall comply with all applicable federal General Pretreatment Regulations promulgated at *40 CFR 403*, the State Pretreatment Requirements at *UAC R317-8-8*, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the wastewaters.

In addition, in accordance with *40 CFR 403.12(p)(1)*, the permittee must notify the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities, in writing, if they discharge any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under *40 CFR 261*. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).

IV. GENERAL REQUIREMENTS

A. Planned Changes. The permittee shall give notice to the Executive Secretary as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are not subject to effluent limitations in the permit. In addition, if there are any planned substantial changes to the permittee's existing sludge facilities or their manner of operation or to current sludge management practices of storage and disposal, the permittee shall give notice to the Executive Secretary of any planned changes at least 30 days prior to their implementation.

B. Anticipated Noncompliance. The permittee shall give advance notice to the Executive Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

C. Permit Actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

D. Duty to Reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee shall apply for and obtain a new permit. The application shall be submitted at least 60 days before the expiration date of this permit. The application shall be submitted at least 180 days before the expiration date if an individual permit is necessary.

E. Duty to Provide Information. The permittee shall furnish to the Executive Secretary, within a reasonable time, any information which the Executive Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Executive Secretary, upon request, copies of records required to be kept by this permit.

F. Other Information. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Executive Secretary, it shall promptly submit such facts or information.

G. Signatory Requirements. All applications, reports or information submitted to the Executive Secretary shall be signed and certified.

1. All permit applications shall be signed by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Executive Secretary shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described above and submitted to the Executive Secretary, and,

   b. The authorization specifies either an individual or a position having responsibility for overall operation of the regulated facility, such as the position of plant manager,

superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

3. Changes to authorization. If an authorization under paragraph *IV.G.2* is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph *IV.G.2* must be submitted to the Executive Secretary prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under this section shall make the following certification:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

H. Penalties for Falsification of Reports. The *Act* provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than $10,000.00 per violation, or by imprisonment for not more than six months per violation, or by both.

I. Availability of Reports. Except for data determined to be confidential under *UAC R317-8-3.2*, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of Executive Secretary. As required by the *Act*, permit applications, permits and effluent data shall not be considered confidential.

J. Oil and Hazardous Substance Liability. Nothing in this permit shall be construed to preclude the permittee of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under the *Act*.

K. Property Rights. The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

L. Severability. The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

M. Transfers. This permit may be automatically transferred to a new permittee if:

1. The current permittee notifies the Executive Secretary at least 20 days in advance of the proposed transfer date;

2. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,

3. The Executive Secretary does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2 above.

N. State Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by *UCA 19-5-117*.

O. Water Quality-Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations and compliance schedule, if necessary, if one or more of the following events occurs:

1. Water Quality Standards for the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.

2. A final wasteload allocation is developed and approved by the State and/or EPA for incorpora in this permit.

3. A revision to the current Water Quality Management Plan is approved and adopted which calls for different effluent limitations than contained in this permit.

P. Toxicity Limitation-Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include whole effluent toxicity (WET) testing, a WET limitation, a compliance schedule, a compliance date, additional or modified numerical limitations, or any other conditions related to the control of toxicants if toxicity is detected during the life of this permit.

Q. Storm Water-Reopener Provision. At any time during the duration (life) of this permit, this permit may be reopened and modified (following proper administrative procedures) as per *UAC R317.8*, to include, any applicable storm water provisions and requirements, a storm water pollution prevention plan, a compliance schedule, a compliance date, monitoring and/or reporting requirements, or any other conditions related to the control of storm water discharges to "waters-of-State".

F:Gen-Coal.per

United States Department of Agriculture
Forest Service

a. Record no. (1-2)	b. Region (3-4)	c. Forest (5-6)
70	04	10
d. District (7-8)	e. User number (9-12)	f. Kind of use (13-15)
03	4087	912
g. State (16-17)	h. County (18-20)	k. Card no. (21)
49	015	1

SPECIAL USE PERMIT

Act of June 4, 1897
This permit is revocable and nontransferable
(Ref. FSM 2710)

Act of October 21, 1976 (P.L. 94-579)

Permission is hereby granted to Beaver Creek Coal Company

of P.O. Box A.U. - 1109 South Carbon Avenue, Price, Utah 84501, hereinafter called the permittee, to use subject to the conditions set out below, the following described lands or improvements:

NE¼, NW¼, Section 21, T16S., R7E., SLBM

This permit covers 0.225 acres and/or ---------- miles and is issued for the purpose of:

Maintenance of two (2) sediment ponds for the Swisher #4 mine. Ponds were constructed under permit to Swisher.

1. Construction or occupancy and use under this permit shall begin within 1 months, and construction, if any, shall be completed within - - - - - months, from the date of the permit. This use shall be actually exercised at least 300 days each year, unless otherwise authorized in writing.

2. In consideration for this use, the permittee shall pay to the Forest Service, U.S. Department of Agriculture, the sum of Twenty-Five Dollars ($ 25.00) for the period from January 1 1982, to December 31, 1982, and thereafter annually on January 1 Twenty-Five Dollars ($ 25.00):
Provided, however, Charges for this use may be made or readjusted whenever necessary to place the charges on a basis commensurate with the value of use authorized by this permit.

3. This permit is accepted subject to the conditions set forth herein, and to conditions 18 to 36 attached hereto and made a part of this permit.

	NAME OF PERMITTEE	SIGNATURE OF AUTHORIZED OFFICER	DATE
PERMITTEE	Beaver Creek Coal Company	Thomas H Parker TITLE President & Gen. Manager	3 Sept. 82
ISSUING OFFICER	NAME AND SIGNATURE Roy E. Butler	TITLE Acting Forest Supervisor	DATE 9/8/82

2700-4 (7/71)

(CONTINUED ON REVERSE)

1982 fees paid under name of Swisher Coal Company.

4. Development plans: layout(ns; construction, reconstruction, or a ation of improvements or revision of layout or construction plans for this area must be approved in advance and in writing by the forest supervisor. Trees or shrubbery on the permitted area may be removed or destroyed only after the forest officer in charge has approved, and has marked or otherwise designated that which may be removed or destroyed. Timber cut or destroyed will be paid for by the permittee as follows: Merchantable timber at appraised value; young-growth timber below merchantable size at current damage appraisal value; *provided* that the Forest Service reserves the right to dispose of the merchantable timber to others than the permittee at no stumpage cost to the permittee. Trees, shrubs, and other plants may be planted in such manner and in such places about the premises as may be approved by the forest officer in charge.

5. The permittee shall maintain the improvements and premises to standards of repair, orderliness, neatness, sanitation, and safety acceptable to the forest officer in charge.

6. This permit is subject to all valid claims.

7. The permittee, in exercising the privileges granted by this permit, shall comply with the regulations of the Department of Agriculture and all Federal, State, county, and municipal laws, ordinances, or regulations which are applicable to the area or operations covered by this permit.

8. The permittee shall take all reasonable precautions to prevent and suppress forest fires. No material shall be disposed of by burning in open fires during the closed season established by law or regulation without a written permit from the forest officer in charge or his authorized agent.

9. The permittee shall exercise diligence in protecting from damage the land and property of the United States covered by and used in connection with this permit, and shall pay the United States for any damage resulting from negligence or from the violation of the terms of this permit or of any law or regulation applicable to the National Forests by the permittee, or by any agents or employees of the permittee acting within the scope of their agency or employment.

10. The permittee shall fully repair all damage, other than ordinary wear and tear, to national forest roads and trails caused by the permittee in the exercise of the privilege granted by this permit.

11. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this agreement or to any benefit that may arise herefrom unless it is made with a corporation for its general benefit.

12. Upon abandonment, termination, revocation, or cancellation of this permit, the permittee shall remove within a reasonable time all structures and improvements except those owned by the United States, and shall restore the site, unless otherwise agreed upon in writing or in this permit. If the permittee fails to remove all such structures or improvements within a reasonable period, they shall become the property of the United States, but that will not relieve the permittee of liability for the cost of their removal and restoration of the site.

13. This permit is not transferable. If the permittee through voluntary sale or transfer, or through enforcement of contract, foreclosure, tax sale, or other valid legal proceeding shall cease to be the owner of the physical improvements other than those owned by the United States situated on the land described in this permit and is unable to furnish adequate proof of ability to redeem or otherwise reestablish title to said improvements, this permit shall be subject to cancellation. But if the person to whom title to said improvements shall have been transferred in either manner provided is qualified as a permittee and is willing that his future occupancy of the premises shall be subject to such new conditions and stipulations as existing or prospective circumstances may warrant, his continued occupancy of the premises may be authorized by permit to him if, in the opinion of the issuing officer or his successor, issuance of a permit is desirable and in the public interest.

14. In case of change of address, the permittee shall immediately notify the forest supervisor.

15. The temporary use and occupancy of the premises and improvements herein described may be sublet by the permittee to third parties only with the prior written approval of the forest supervisor but the permittee shall continue to be responsible for compliance with all conditions of this permit by persons to whom such premises may be sublet.

16. This permit may be terminated upon breach of any of the conditions herein or at the discretion of the regional forester or the Chief, Forest Service.

17. In the event of any conflict between any of the preceding printed clauses or any provisions thereof and any of the following clauses or any provisions thereof, the following clauses will control.

18. (A-13) - A late payment charge in addition to the regular fees shall be made for failure to meet the fee payment due date or any of the dates specified for submission of statements required for fee calculation. The late payment charge shall be $15, or an amount calculated by applying the current rate prescribed by Treasury Fiscal Requirements Manual Bulletins to the overdue amount for each 30-day period or fraction thereof that the payment is overdue, whichever is greater. If the due date falls on a non-workday, the late payment charge will not apply until the end of the next workday.

19. (B-2) - During the performance of this permit, the permittee agrees:

    a. In connection with the performance of work under this permit, including construction, maintenance, and operation of the facility, the permittee shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin.

    b. The permittee and his employees shall not discriminate by segregation or otherwise against any person on the basis of race, color, religion, sex, or national origin by curtailing or refusing to furnish accommodations, facilities, services, or use privileges offered to the public generally.

    c. The permittee shall include and require compliance with the above nondiscrimination provisions in any subcontract made with respect to the operations under this permit.

20. (B-8) - The permittee shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of National Forest lands under this permit.

21. (C-9) - No storage or transportation of water on the National Forest lands covered by this permit shall be made until the facilities have been constructed in accordance with the approved plans and specifications, the permittee has submitted certification thereof by a registered professional engineer, and the permittee has received written approval from the Forest Service.

22. (C-12) - The Environmental Assessment previously furnished is made a part of the permit.

23. (D-3) - The permittee shall protect the scenic esthetic values of the area under this permit, and the adjacent land, as far as possible with the authorized use, during construction, operation, and maintenance of the improvements.

24. (D-4) - The permittee shall take reasonable precautions to protect, in place, all public land survey monuments, private property corners, and Forest boundary markers. In the event that any such land markers or monuments are destroyed in the exercise of the privileges authorized by this permit, depending on the type of monument destroyed, the permittee shall see that they are reestablished or referenced in accordance with (1) the procedures outlined in the "Manual of Instructions for the Survey of the Public Land of the United States," (2) the specifications of the county surveyor, or (3) the specifications of the Forest Service.

Further, the permittee shall cause such official survey records as are affected to be amended as provided by law.

25. (D-7) - The permittee shall be responsible for the prevention and control of soil erosion and gullying on the area covered by this permit and lands adjacent thereto, and shall provide preventive measures as required by the Forest Service.

26. (E-4) - Unless sooner terminated or revoked by the Regional Forester, in accordance with the provisions of the permit, this permit shall expire and become void on December 31, 1999, but a new permit to occupy and use the same National Forest land may be granted provided the permittee will comply with the then existing laws and regulations governing the occupancy and use of National Forest lands and shall have notified the Forest Supervisor not less than six months prior to said date that such new permit is desired.

27. (X-4) - This permit is issued on the condition that the permittee has secured, or will secure, the consent of any person having valid claim to the land.

28. (X-5) - The land herein described is subject to certain rights reserved by or outstanding in parties other than the United States, and nothing herein shall abridge said rights or authorize prevention or obstruction of the reasonable exercise thereof.

29. (X-6) - This permit is subject to the rights and privileges granted in mineral, oil, or gas leases covering this land which have been issued by an authorized agency of the United States, and this permit does not authorize the prevention of obstruction of the reasonable exercise of the rights and privileges granted by said mineral, oil, or gas leases.

30. (X-17) - If, during excavation work, items of substantial archeological or paleontological value are discovered, or a known deposit of such items is disturbed, the permittee will cease excavation in the area so affected. He will then notify the Forest Service and will not resume excavation until written approval is given.

31. (X-19) - The permittee agrees to permit the free and unrestricted access to and upon the premises at all times for all lawful and proper purposes not inconsistent with the intent of the permit or with the reasonable exercise and enjoyment by the permittee of the privileges thereof.

32. (X-27) - This permit covers use of land only for flooding. It is specifically understood that the shoreline touching the National Forest land and the land above the shoreline and above the normal spillway-crest water level shall remain under the jurisdiction of the Forest Service. The Forest Service reserves the right to use and permit use of the land under permit: Provided, That such use does not interfere with the purpose for which this permit is granted.

33. (X-67) - The permittee further agrees that the Forest Service representative may inspect the structures at any time and if not satisfied with the then-existing protection to control soil erosion on the dams and in and below the spillways to streambed, upon written notice thereof, the permittee shall take action to provide protection to control soil erosion. If the Forest Service is not satisfied with any safety, operation, maintenance, or other feature or physical condition of the structures and appurtenances, upon written notice thereof, the permittee shall comply with a request to correct, adjust, or change same.

34. (X-68) - Rental equipment shall not be placed on National Forest land prior to actual use or be allowed to remain on National Forest land subsequent to actual use, but shall be stored at or removed to private land: Provided, That this will not preclude storage on National Forest land under permit for equipment storage.

35. (X-81) - This permit confers no right to the use of water by the permittee.

36. Approval is also subject to the list of conditions shown under item 7 of the application (copy of Swisher application attached).

United States Department of Agriculture
Forest Service

AMENDMENT FOR SPECIAL USE PERMIT

Ref: FSM 2714

a. Record no. (1-2) 70	b. Re[illegible] -4) 04	c. Forest (5-6) 10	
d. District (7-8) 03	e. User number (9-12) 4083	f. Kind of use (13-15) 612	
THIS AMENDMENT IS ATTACHED TO AND MADE A PART OF THE ☒ TERM ☐ ANNUAL PERMIT	g. State (16-17) 49	h. County (18-20) 015	k. Card no. (21) 1

For Experimental - Demonstration (KIND OF PERMIT) issued to Arco Coal Company (NAME OF PERMITTEE), on 11/10/81 (DATE OF PERMIT)

which is hereby amended as follows: Clause No. 2.

Increases the minimum annual fee to $25.00.

This Amendment is accepted subject to the conditions set forth herein, and to conditions - - - to - - - attached hereto and made a part of this Amendment.

PERMITTEE	NAME OF PERMITTEE Arco Coal Company	SIGNATURE OF AUTHORIZED OFFICER TITLE	DATE
ISSUING OFFICER	NAME AND SIGNATURE Ross E. Butler	TITLE Acting Forest Supervisor	DATE 8/31/82

GPO 938-202

2700-23 (3/72)

United States Department of Agriculture Forest Service	a. Record no. (1-2)	b. Region (3-4)	c. Forest (5-6)
	70	04	10
SPECIAL USE PERMIT	d. District (7-8)	e. User number (9-12)	f. Kind of use (13-15)
~~Act of June 4, 1897~~	03	4083	612
This permit is revocable and nontransferable (Ref. FSM 2710)	g. State (16-17)	h. County (18-20)	k. Card no. (21)
Act of October 21, 1976 (P.L. 94-579)	49	015	1

Permission is hereby granted to Arco Coal Company

of P.O. Box 5300 - Denver, Colorado 80217

hereinafter called the permittee, to use subject to the conditions set out below, (the following described lands or improvements:

Little Bear Canyon Site: NW¼SW¼, Section 9, T16S., R7E., Parshall flume with single stage sediment sampler to be located just downstream from Little Bear Spring stabilized with concrete riprap.

Upper Mill Fork Site: SE¼SE¼, Section 18, T16S., R7E., Parshall flume with single stage sediment sampler.

Lower Mill Fork Site: NW¼NW¼, Section 22, T16S., R7E., Sharp-crested V-notch weir with single stage sediment sampler.)

Location of above sites shown on attached map

This permit covers .7 acres and/or - - miles and is issued for the purpose of: Operation of a streamflow and water quality monitoring network in the area of the Beaver Creek Coal Company's Huntington Canyon No. 4 Mine. The network is designed to assess the effects of possible subsidence and surface disturbance resulting from mining operations.

1. Construction or occupancy and use under this permit shall begin within 1 months, and construction, if any, shall be completed within 2 months, from the date of the permit. This use shall be actually exercised at least 365 days each year, unless otherwise authorized in writing.

2. In consideration for this use, the permittee shall pay to the Forest Service, U.S. Department of Agriculture, the sum of Ten Dollars ($ 10.00) for the period from November 10 19 81, to December 31, 19 81, and thereafter annually on January 1, Ten Dollars ($ 10.00):

Provided, however, Charges for this use may be made or readjusted whenever necessary to place the charges on a basis commensurate with the value of use authorized by this permit.

3. This permit is accepted subject to the conditions set forth herein, and to conditions 18 to 25 attached hereto and made a part of this permit.

	NAME OF PERMITTEE	SIGNATURE OF AUTHORIZED OFFICER	DATE
PERMITTEE	ARCO COAL COMPANY	TITLE Eng. Mgr. B.C.C.C.	11/10/81
ISSUING OFFICER	NAME AND SIGNATURE	TITLE Acting Forest Supervisor	DATE 11/10/81

(CONTINUED ON REVERSE)

2700-4 (7/71)

SC-CL-1678

[illegible] plans, construction, reconstruction, or alteration of improvements; or revision of layout or construction plans for this area must be approved in advance and in writing by the forest supervisor. Trees or shrubbery on the permitted area may be removed or destroyed only after the forest officer in charge has approved, and has marked or otherwise designated that which may be removed or destroyed. Timber cut or destroyed will be paid for by the permittee as follows: Merchantable timber at appraised value; young-growth timber below merchantable size at current damage appraisal value; *provided* that the Forest Service reserves the right to dispose of the merchantable timber to others than the permittee at no stumpage cost to the permittee. Trees, shrubs, and other plants may be planted in such manner and in such places about the premises as may be approved by the forest officer in charge.

5. The permittee shall maintain the improvements and premises to standards of repair, orderliness, neatness, sanitation, and safety acceptable to the forest officer in charge.

6. This permit is subject to all valid claims.

7. The permittee, in exercising the privileges granted by this permit, shall comply with the regulations of the Department of Agriculture and all Federal, State, county, and municipal laws, ordinances, or regulations which are applicable to the area or operations covered by this permit.

8. The permittee shall take all reasonable precautions to prevent and suppress forest fires. No material shall be disposed of by burning in open fires during the closed season established by law or regulation without a written permit from the forest officer in charge or his authorized agent.

9. The permittee shall exercise diligence in protecting from damage the land and property of the United States covered by and used in connection with this permit, and shall pay the United States for any damage resulting from negligence or from the violation of the terms of this permit or of any law or regulation applicable to the National Forests by the permittee, or by any agents or employees of the permittee acting within the scope of their agency or employment.

10. The permittee shall fully repair all damage, other than ordinary wear and tear, to national forest roads and trails caused by the permittee in the exercise of the privilege granted by this permit.

11. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this agreement or to any benefit that may arise herefrom unless it is made with a corporation for its general benefit.

12. Upon abandonment, termination, revocation, or cancellation of this permit, the permittee shall remove within a reasonable time all structures and improvements except those owned by the United States, and shall restore the site, unless otherwise agreed upon in writing or in this permit. If the permittee fails to remove all such structures or improvements within a reasonable period, they shall become the property of the United States, but that will not relieve the permittee of liability for the cost of their removal and restoration of the site.

13. This permit is not transferable. If the permittee through voluntary sale or transfer, or through enforcement of contract, foreclosure, tax sale, or other valid legal proceeding shall cease to be the owner of the physical improvements other than those owned by the United States situated on the land described in this permit and is unable to furnish adequate proof of ability to redeem or otherwise reestablish title to said improvements, this permit shall be subject to cancellation. But if the person to whom title to said improvements shall have been transferred in either manner provided is qualified as a permittee and is willing that his future occupancy of the premises shall be subject to such new conditions and stipulations as existing or prospective circumstances may warrant, his continued occupancy of the premises may be authorized by permit to him if, in the opinion of the issuing officer or his successor, issuance of a permit is desirable and in the public interest.

14. In case of change of address, the permittee shall immediately notify the forest supervisor.

15. The temporary use and occupancy of the premises and improvements herein described may be sublet by the permittee to third parties only with the prior written approval of the forest supervisor but the permittee shall continue to be responsible for compliance with all conditions of this permit by persons to whom such premises may be sublet.

16. This permit may be terminated upon breach of any of the conditions herein or at the discretion of the regional forester or the Chief, Forest Service.

17. In the event of any conflict between any of the preceding printed clauses or any provisions thereof and any of the following clauses or any provisions thereof, the following clauses will control.

18. (A-13) - A late payment charge in addition to the regular fees shall be made for failure to meet the fee payment due date or any of the dates specified for submission of statements required for fee calculation. The late payment charge shall be $15, or an amount calculated by applying the current rate prescribed by Treasury Fiscal Requirements Manual Bulletins to the overdue amount for each 30-day period or fraction thereof that the payment is overdue, whichever is greater. If the due date falls on a nonworkday, the late payment charge will not apply until the end of the next workday.

19. (B-8) - The permittee shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of National Forest lands under this permit.

20. (D-2) - No waste or byproducts shall be discharged if it contains any substances in concentrations which will result in substantial harm to fish and wildlife, or to human water supplies.

    Storage facilities for materials capable of causing water pollution, if accidentally discharged, shall be located so as to prevent any spillage into waters, or channels leading into water, that would result in substantial harm to fish and wildlife or to human water supplies.

21. (D-3) - The permittee shall protect the scenic esthetic values of the area under this permit, and the adjacent land, as far as possible with the authorized use, during construction, operation, and maintenance of the improvements.

22. (D-4) - The permittee shall take reasonable precautions to protect, in place, all public land survey monuments, private property corners, and Forest boundary markers. In the event that any such land markers or monuments are destroyed in the exercise of the privileges authorized by this permit, depending on the type of monument destroyed, the permittee shall see that they are reestablished or referenced in accordance with (1) the procedures outlined in the "Manual of Instructions for the Survey of the Public Land of the United States," (2) the specifications of the county surveyor, or (3) the specifications of the Forest Service.

23. (E-4) - Unless sooner terminated or revoked by the Regional Forester, in accordance with the provisions of the permit this permit shall expire and become void on December 31, 1996, but a new permit to occupy and use the same National Forest land may be granted provided the permittee will comply with the then existing laws and regulations governing the occupancy and use of National Forest lands and shall have notified the Forest Supervisor not less than six months prior to said date that such new permit is desired.

24. (X-5) - The land herein described is subject to certain rights reserved by or outstanding in parties other than the United States, and nothing herein shall abridge said rights or authorize prevention or obstruction of the reasonable exercise thereof.

United States
Department of
Agriculture

Forest
Service

Manti-LaSal
National Forest

599 West Price River Dr.
Price, Utah 84501

Reply to: 2820
7730

Date: MAY 22, 1987

Atlantic Richfield Company
Anaconda Building
555 17th Street
Denver, Colorado 80217

Gentlemen:

The Performance Bond 8087 85 55 in the amount of $8,500.00 for the Road Use Permit is no longer needed. Enclosed is a copy of this letter for your surety, Federal Insurance Company.

Sincerely,

A.J. Frandsen

A.J. FRANDSEN
Acting Forest Supervisor

Enclosure

cc: Dan Guy - Beaver Creek Coal Company

U.S. DEPARTMENT OF AGRICULTURE
Forest Service

RECLAMATION PERFORMANCE BOND

(Minerals Operating Plan and/or Exploration Permit, Including Geothermal)

(Reference FSM 6506) Bond 8087 85 55

INSTRUCTIONS: (1) This form is authorized for use whenever a Performance Bond is required in connection with National Forest Reclamation Activity. (2) The full legal name and business address of the Principal shall be inserted in the space designated 'Principal' on the face of this form. The bond shall be signed by an authorized person. Where such person is signing in a representative capacity (e.g., an attorney-infact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, evidence of his authority must be furnished. (3) Corporations executing the bond as sureties must be among those appearing on the Treasury Department's list of approved sureties and must be acting within the limitations set forth therein. (4) Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the work 'Seal', and, if executed in Maine or New Hampshire, shall also affix an adhesive seal. (5) The name of each person signing this bond should be typed in the space provided.

Principal *(Legal name and business address)*

Atlantic Richfield Company
Anaconda Building
555 17th St.
Denver, CO 80217

Date Bond Executed
July 2, 1981

Type of Organization *(X Appropriate Box)*

- [ ] Individual
- [ ] Partnership
- [ ] Joint Venture
- [X] Corporation

Surety(ies) *(Name(s) and business address(es))*

Federal Insurance Company
1385 S Colo. Blvd. #616
Denver, CO 80222

State of Incorporation
Pennsylvania

PENAL SUM OF BOND

Million(s) $	Thousand(s) $	Hundred(s) $
	8	500

KNOW ALL MEN BY THESE PRESENTS, That we, the Principal and Surety(ies) hereto, are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum for the payment of which we bind ourselves, and each of our heirs, executors, administrators, and successors, jointly and severally: Provided, That, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum 'jointly and severally' as well as 'severally' only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

SCHEDULE OF OPERATING PLANS - REGION _____

Name of National Forest	Operating Plan Number	Date	Amount Allocated to Operating Plan ($)	Amount of Allocated Restored ($)	Date Restored	Unallocated Balance ($)
Manti-La-Sal						

THE CONDITION OF THIS OBLIGATION IS SUCH, That whereas the Principal has an interest in the Operating Plans identified in the Schedule of Operating Plans above; and

WHEREAS, the Principal and Surety agree that, without notice of the surety, the coverage of this bond, in addition to the present operating plans of the Principal, shall extend to and include:

1. Any operating plan approved by the Forest Service and issued to the Principal in the Region or Forests named above, or later named in a rider, the coverage to become effective immediately upon approval by the Forest Service.

2. Any operating plan hereafter approved by the Forest Service in the Region or Forests named above, to become effective immediately upon approval by the Forest Service.

3. Any extension of the operating plan, such coverage to continue without interruption due to expiration of the operating plan.

4. Any modification of an operating plan, include obligations thereunder, whether made by agreement, suspension of operations, or otherwise; and

WHEREAS, the Principal and Surety hereby agree that notwithstanding the termination of any operating plan covered by this bond, the bond shall remain in full force and effect as to all remaining operating plans covered by this bond.

NOW, THEREFORE, if the Principal shall: Perform and fulfill all the reclamation provisions of all operating plans referred to in the Schedule of Operating Plans and shall also perform and fulfill all the reclamation provisions of any and all duly authorized modifications of said operating plans that may hereafter be made, then the above obligations are to be void; otherwise to remain in full force and effect.

IN WITNESS WHEREOF, the Principal and Surety(ies) have executed this reclamation bond and have affixed their seals on the date set forth above.

PRINCIPAL			
Signature(s)	1. (Seal)	2. (Seal)	Corporate Seal
Name(s) and Titles (Typed)	1.	2.	

SURETY(IES)				
Name and Address	Federal Insurance Company 1385 S Colo Blvd. #616 Denver, CO 80222	State of Inc. N.J.	Liability Limit	Corporate Seal
Signature(s)	1. Marjory Davis	2.		
Name(s) and Titles (Typed)	1. Marjory Davis Attorney-in-Fact	2.		

Bond Premium	Rate Per Thousand $ 3.75	Total $ 31.87

Remarks

Certified Copy of

POWER OF ATTORNEY

Know all Men by these Presents, That the FEDERAL INSURANCE COMPANY, 100 William Street, New York, New York, a New Jersey Corporation, has constituted and appointed, and does hereby constitute and appoint

Robert W. Whitman, Marjory Davis, Robert E. Duncan and Bruce Bonar of Denver, Colorado----------

each its 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 thereon or otherwise, bonds or obligations given or executed in the course of its business, and any instruments amending or altering the same, and consents to the modification or alteration of any instruments referred to in said bonds or obligations.

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 16th day of December 19 80

FEDERAL INSURANCE COMPANY
By

George McClellan
Assistant Vice-President

Richard D. O'Connor
Assistant Secretary

STATE OF NEW JERSEY
County of Essex } ss:

On this 16th day of December 19 80, 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 deponent's presence.

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

Notary Public

PATRICIA RYAN
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires December 11, 19 83

Form 21-10-41 (Ed. 10-74) (NYSO)

CITY OF SHORT HILLS }
County of Essex } 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 amended May 27, 1971 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."

And I further certify that I have compared the foregoing copy of the POWER OF ATTORNEY with the original thereof and the same is a correct and true copy of the whole of said original Power of Attorney and that said Power of Attorney has not been revoked.

And 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.

Given under my hand and the seal of said Company at Short Hills, N.J., this 2nd day of July, 19 81.

Cecelia D. Hennessy
Assistant Secretary

BOND

STATE #ACT/015/004

ORIGINAL

R I D E R

RIDER to be attached to and form a part of Bond Number U-630694

on behalf of BEAVER CREEK COAL COMPANY
(Name)

555 SEVENTEENTH STREET, DENVER, COLORADO 80202
(Address)

as Principal, and in favor of STATE OF UTAH, DIVISION OF OIL, GAS AND MINING

as Obligee, executed by UNITED PACIFIC INSURANCE COMPANY as Surety,

in the amount of ONE HUNDRED FORTY-FOUR THOUSAND FORTY-ONE AND 60/100----------

Dollars ($ 144,041.60) effective JULY 8, 19 88.

It is hereby understood and agreed that effective as of SEPTEMBER 5, 1991, the said bond has been amended as follows:

1) The Principal's Name has been changed from: BEAVER CREEK COAL COMPANY
to: MOUNTAIN COAL COMPANY

2) Specific Language has been added:
"In the event the Cooperative Agreement between the DIVISION and OSM is terminated, then the portion of the bond covering the Federal Lands will be payable only to the United States, Department of Interior, Office of Surface Mining."

Nothing herein contained shall vary, alter or extend any provisions or conditions of the bond other than as above stated.

SIGNED, SEALED AND DATED this 5TH day of SEPTEMBER, 19 91.

MOUNTAIN COAL COMPANY
Principal

BY: Thomas H. Parker
Vice President

UNITED PACIFIC INSURANCE COMPANY
Surety

BY: Dorothy M. Ivanoff
DOROTHY M. IVANOFF
ATTORNEY-IN-FACT

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

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

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

November 10, 1986

Ms. Mary Cristaudo
Bonding Representative
Grant Hatch & Associates, Inc.
P. O. Box 11809
Salt Lake City, Utah 84147

Dear Ms. Cristaudo:

Re: Phase I Bond Release, Beaver Creek Coal Company, Huntington #4 Mine, INA/015/004, Folder #5, Emery County, Utah

The Division hereby approves the Phase I bond release of $216,062.40, or 60 percent of the bond for the Huntington #4 Mine. This bond release is effective as of November 10, 1986.

Thank you for your cooperation.

Best regards,

Lowell P. Braxton
Administrator
Mineral Resource Development
and Reclamation Program

PGL/djh
cc: D. Guy, BCCC
P. Grubaugh-Littig
J. Whitehead
8808R/9

an equal opportunity employer

PRINCIPAL

Bond No. U-630694

Signed and executed this 14th day of June, 1988:

By: Charles B Smith

TITLE: Vice President

State of Colorado)
) SS.
County of Denver)

The foregoing instrument was acknowledged before me by Charles B. Smith, this 14th day of June, 1988.

Witness my hand and official seal.

Virginia Bright
(Notary Public or other authorized officer)

My Commission Expires: Aug 28 1991

SURETY

Signed and executed this 18TH day of MAY, 1988:

By: DANIEL ORTIZ

TITLE: ATTORNEY-IN-FACT

State of CALIFORNIA)
) SS.
County of LOS ANGELES)

The foregoing instrument was acknowledged before me by DANIEL ORTIZ, ATTORNEY-IN-FACT, this 18TH day of MAY, 1988.

Witness my hand and official seal.

OFFICIAL SEAL
CORA V. RODRIGUEZ
NOTARY PUBLIC - CALIFORNIA
PRINCIPAL OFFICE IN
LOS ANGELES COUNTY
My Commission Expires March 24, 1989

Cora V. Rodriguez
(Notary Public or other authorized officer)
CORA V. RODRIGUEZ

My Commission Expires: MARCH 24, 1989

RESIDENT AGENT FOR SERVICE

Resident Agent: _____ Date: _____
(Signature)

_____ Address: _____
(Printed Name)

Approved as to form and execution:

_____
Attorney General

By: _____ Date: _____
Assistant

APPROVED: _____ Date: _____
Coordinator of Mined Land Development

Permit No. _____

RECEIVED
JUN 17 1988
DIVISION OF
OIL, GAS & MINING

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
(801) 538-5340

THE MINED LANDS RECLAMATION ACT
BOND
****

BOND NO. U-630694

Know all men by these presents, that we the undersigned, BEAVER CREEK COAL COMPANY

(State name and form of business organization of the Permit Applicant)

duly authorized to do business in the State of Utah, AS PRINCIPAL, and UNITED PACIFIC INSURANCE COMPANY

a corporation organized and existing under the laws of the State of Washington and duly authorized to do business in the State of Utah, AS SURETY, are held and firmly bound unto the STATE OF UTAH, DIVISION OF OIL, GAS, AND MINING, in the sum of ONE HUNDRED FORTY FOUR THOUSAND FORTY-ONE DOLLARS AND 60/100 DOLLARS ($144,041.60), lawful money of the United States, to be paid to the State of Utah, Division of Oil, Gas, and Mining and the United States Department of the Interior, Office of Surface Mining, upon order of forfeiture by the State of Utah, Division of Oil, Gas, and Mining, for the payment of which sum, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH that whereas the above named principal did on the 16th day of March, 1976, file with the Division of Oil, Gas, and Mining a "Notice of Intention to Commence Mining Operations" and a "Mining and Reclamation Plan", to secure authorization to engage in mining operations in the State of Utah, under the terms and provisions of the Mined Land Reclamation Act; that in said Notice the principal estimated that 1,320.46 acres of land wil be affected by mining. Said land is described as follows:

All of Section 16	T16S, R7E	640 acres more or less
E/2 Section 17	T16S, R7E	320 acres more or less
SW/4 Section 8	T16S, R7E	160 acres more or less
S/2SE/4 Section 8	T16S, R7E	80 acres more or less
S/2S/2 less SE/4SE/4 Section 9	T16S, R7E	120 acres more or less
Pumping facility beginning at a point 555 feet west and 85 feet south of the NE corner of the NE/4, Section 21, thence 100 feet south, thence 200 feet west, thence 100 feet north, thence 200 feet east to point of beginning.	T16S, R7E	0.46 acres more or less

All above lands in Emery County, Utah

Now, therefore, the conditions of the obligation are such that, this bond shall remain in full force and effect until either released or forfeited pursuant to the provisions of the Utah Mined Land Reclamation Act and the Surface Mining Control and Reclamation Act of 1977 PL(95-87) and any rules and regulations adopted pursuant to said Acts.

(THIS BOND REPLACES FEDERAL INSURANCE COMPANY BOND NUMBER 8082-89-88)

UNITED PACIFIC INSURANCE COMPANY

HEAD OFFICE, FEDERAL WAY, WASHINGTON

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, That the UNITED PACIFIC INSURANCE COMPANY, a corporation duly organized under the laws of the State of Washington, does hereby make, constitute and appoint

DANIEL ORTIZ of LOS ANGELES, CALIFORNIA ----------

its true and lawful Attorney-in-Fact, to make, execute, seal and deliver for and on its behalf, and as its act and deed

ANY AND ALL BONDS AND UNDERTAKINGS OF SURETYSHIP ---

and to bind the UNITED PACIFIC INSURANCE COMPANY thereby as fully and to the same extent as if such bonds and undertakings and other writings obligatory in the nature thereof were signed by an Executive Officer of the UNITED PACIFIC INSURANCE COMPANY and sealed and attested by one other of such officers, and hereby ratifies and confirms all that its said Attorney(s)-in-Fact may do in pursuance hereof.

This Power of Attorney is granted under and by authority of Article VII of the By-Laws of UNITED PACIFIC INSURANCE COMPANY which became effective September 7, 1978, which provisions are now in full force and effect, reading as follows.

ARTICLE VII - EXECUTION OF BONDS AND UNDERTAKINGS

1. The Board of Directors, the President, the Chairman of the Board, any Senior Vice President, any Vice President or Assistant Vice President or other officer designated by the Board of Directors shall have power and authority to (a) appoint Attorneys-in-Fact and to authorize them to execute on behalf of the Company, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof, and (b) to remove any such Attorney-in-Fact at any time and revoke the power and authority given to him.

2. Attorneys-in-Fact shall have power and authority, subject to the terms and limitations of the power of attorney issued to them, to execute and deliver on behalf of the Company, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof. The corporate seal is not necessary for the validity of any bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof.

3. Attorneys-in-Fact shall have power and authority to execute affidavits required to be attached to bonds, recognizances, contracts of indemnity or other conditional or obligatory undertakings and they shall also have power and authority to certify the financial statement of the Company and to copies of the By Laws of the Company or any article or section thereof.

This power of attorney is signed and sealed by facsimile under and by authority of the following Resolution adopted by the Board of Directors of UNITED PACIFIC INSURANCE COMPANY at a meeting held on the 5th day of June, 1979, at which a quorum was present, and said Resolution has not been amended or repealed.

> "Resolved, that the signatures of such directors and officers and the seal of the Company may be affixed to any such power of attorney or any certificate relating thereto by facsimile, and any such power of attorney or certificate bearing such facsimile signatures or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by facsimile signatures and facsimile seal shall be valid and binding upon the Company in the future with respect to any bond or undertaking to which it is attached."

IN WITNESS WHEREOF, the UNITED PACIFIC INSURANCE COMPANY has caused these presents to be signed by its Vice President, and its corporate seal to be hereto affixed, this 23rd day of June 1987

UNITED PACIFIC INSURANCE COMPANY

Charles B. Schmalz

Vice President

STATE OF Washington
COUNTY OF King } ss.

On this 23rd day of June, 1987 personally appeared Charles B. Schmalz

to me known to be the Vice-President of the UNITED PACIFIC INSURANCE COMPANY, and acknowledged that he executed and attested the foregoing instrument and affixed the seal of said corporation thereto, and that Article VII, Section 1, 2, and 3 of the By-Laws of said Company, and the Resolution, set forth therein, are still in full force.

My Commission Expires:

May 15, 1990

Pamela Young

Notary Public in and for State of Washington

Residing at Tacoma

I, Lawrence W. Carlstrom, Assistant Secretary of the UNITED PACIFIC INSURANCE COMPANY, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney executed by said UNITED PACIFIC INSURANCE COMPANY, which is still in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said Company this 18TH day of MAY 1988

Assistant Secretary

Lawrence W. Carlstrom

BOU-1431 Ed. 4/88

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015
Fax 303 929-5595

RECEIVED
DEC 1 3 1993
DIVISION OF
OIL, GAS & MINING

December 6, 1993

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

Re: Application for Partial Bond Release
Huntington Canyon No. 4 Mine
INA/015/004, UT-004
Emery County, Utah

Dear Mr. Braxton,

Mountain Coal Company has completed Phase II of the approved reclamation plan for the Huntington Canyon No. 4 Mine. This is based upon the establishment of revegetation and sediment control in accordance with the approved reclamation plan, as verified in the attached 1993 Vegetation Monitoring Report and Sediment Production Evaluation.

In accordance with the provisions of R645-301-880, Mountain Coal Company is hereby applying for partial release of the performance bond. The original bond posted for this property was $216,062.40, (60%) was released on November 10, 1986 upon approval of Phase I Bond Release. The present bond posted for this site is $144,041.60. Mountain Coal Company is hereby applying for release of an additional 30% of the original bond, or $108,031.20. This will leave an amount of $36,010.40 to be held until final bond release. The disturbed area for this site was 12.29 acres, with an affected area of approximately 37 acres. The remaining bond would provide for approximately $2,930.06/acre of disturbed area or $973.25/acre of affected area.

Copies of letters for notification to land owners, agencies, and water companies in the area are enclosed. A copy of the newspaper advertisement placed prior to submittal of this application is enclosed. This advertisement ran for four consecutive weeks in the local area papers. Proof of publication is also enclosed.

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

March 1, 1994

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

Attn: Susan White

Re: Additional Notification Letters
Application for Partial Bond Release
Huntington Canyon No. 4 Mine
INA/015/004, UT-004
Emery County, Utah

Dear Mr. Braxton:

Enclosed are 2 additional letters of notification which were inadvertently omitted in our Partial Bond Release Submittal. The Madden/Hiatt families are listed as surface owners on the property description. The omission was pointed out by Susan White during her review of the application. The letters have been sent to the surface owners, as required.

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

Respectfully,

Dan W. Guy,
for
Kathleen G. Welt

cc: Kathy Welt - MCC
Susan White - DOGM
File

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

December 6, 1993

William Joseph Madden
c/o Nancy S. Madden
2900 Connecticut Avenue, NW
Apartment 332
Washinton, D.C. 20008

Re: Notification of Application for Partial Bond Release
Huntington Canyon No. 4 Mine
INA/015/004, UT-004
Emery County, Utah

Dear Mr. Madden:

Mountain Coal Company has completed Phase II of its approved reclamation plan at the Huntington Canyon No. 4 Mine. This is based upon the establishment of revegetation in accordance with the approved reclamation plan.

In accordance with the requirements of R645-301-880 of the Utah Coal Mining Reclamation Act, this letter will serve as notification that Mountain Coal Company intends to file an application with the Utah Division of Oil, Gas and Mining for partial release of the performance bond.

The original bond posted for this property was $360,104.00, of which $216,062.40 (60%) was released on November 10, 1986 upon approval of Phase I Bond Release. The present bond posted for the site is $144,041.60. Mountain Coal Company is seeking release of an additional 30% of the original bond, or $108,031.20.

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

Respectfully,

Dan W. Guy

Dan W. Guy, P.E.
for
Kathleen G. Welt

cc: Kathy Welt - MCC
File

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

December 6, 1993

Marena Madden Hiatt
687 30th Street
Marathon, Florida 33050

Re: Notification of Application for Partial Bond Release
Huntington Canyon No. 4 Mine
INA/015/004, UT-004
Emery County, Utah

Dear Ms. Hiatt:

Mountain Coal Company has completed Phase II of its approved reclamation plan at the Huntington Canyon No. 4 Mine. This is based upon the establishment of revegetation in accordance with the approved reclamation plan.

In accordance with the requirements of R645-301-880 of the Utah Coal Mining Reclamation Act, this letter will serve as notification that Mountain Coal Company intends to file an application with the Utah Division of Oil, Gas and Mining for partial release of the performance bond.

The original bond posted for this property was $360,104.00, of which $216,062.40 (60%) was released on November 10, 1986 upon approval of Phase I Bond Release. The present bond posted for the site is $144,041.60. Mountain Coal Company is seeking release of an additional 30% of the original bond, or $108,031.20.

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

Respectfully,

Dan W. Guy

Dan W. Guy, P.E.
for
Kathleen G. Welt

cc: Kathy Welt - MCC
File

AFFIDAVIT OF PUBLICATION

TATE OF UTAH)
ss.
County of Emery,)

I, Kevin Ashby, on oath, say that I am the Publisher of the Emery County Progress, a weekly newspaper of general circulation, published at Castle Dale, State and County aforesaid, and that a certain notice, a true copy of which is hereto attached, was published in the full issue of such newspaper for Four (4) consecutive issues, and that the first publication was on the

21st day of September, 19 93

and that the last publication of such notice was in the issue of uch newspaper dated the

12th day of October, 19 93

Kevin Ashby

Subscribed and sworn to before me this

12th day of October, 19 93

Notary Public

My Commission expires January 10, 1995

Residing at Price, Utah

Publication fee, $ 176.00

NOTARY PUBLIC

PUBLIC NOTICE
Huntington Canyon No. 4 Mine
Permit #INA/015/004
Mountain Coal Company
P.O. Box 591
Somerset, Colorado 81434

Application for Partial Release of Performance Bond

Mountain Coal Company completed reclamation Phase I at its Huntington Canyon No. 4 Mine during the period of August 15, 1985 through September 30, 1986. The company has now completed reclamation Phase II, which is based on establishment of revegetation in accordance with the approved reclamation plan.

In accordance with the provisions of R645-301-880, of the Utah Coal Mining Rules, notice is hereby given to the general public that Mountain Coal Company is applying for partial release of the performance bond posted for this operation.

The original bond posted for this property was $360,104.00, of which $216,062.40 (60%) was released on November 10, 1986 upon approval o Phase I Bond Release. The present bond posted for this site is $144,041.60. Mountain Coal Company is seeking release of an additiona 30% of the original bond, or $108,301.20.

The Huntington Canyon No. 4 Mine is located in Mill Fork Canyon approximately 35 road miles southwest of Price, Utah. The following are the legal descriptions of the permit area:

Township 16 South, Range 7 East, SLBM, Utah
Sec. 8: SE ¼, S ½, SE ¼
Sec. 9: S ½ SW ¼, SW¼ SE ¼
Sec. 16: All of Section
Sec. 17: EW ½

The permit area is located on the Rilda Canyon, Utah, U.S. Geologica Survey 15 minute quadrangle map.

Federal Coal Leases were #U-33454 and #SL-064903.

The reclamation work was performed on approximately 37 acres o disturbed and affected area located on the following described lands

Township 16 South, Range 7 East, SLBM, Utah
Sec. 16: SW ¼ SE¼
Sec. 16: S ½ SW ¼
Sec. 17: SE ¼ SE ¼

The Division will now evaluate the proposal to determine whether i meets all the criteria of the Permanent Program Performance Standard according to the requirements of the Utah Coal Mining Rules.

Upon completion of the evaluation for said reclamat[illegible] decision wi be made as to approval or disapproval of the applicat[illegible] The reclama tion plan is available for public review at: Division of Oil, Gas and Min ing, 355 West North Temple, 3 Triad Center, Suite 350, Salt Lake City Utah 84180-1203, and at the Emery County Courthouse [illegible] Utah 84513.

Written comments, objections, and requests for [illegible] informal conference on this proposal may be addressed [illegible] the Division: Mr. Jim Carter, Director, Division of Oil [illegible] 355 West North Temple, 3 Triad Center, Suite 350, Sa[illegible] 84180-1203, Attention: Mr. Lowell Braxton.

Published in the Emery County Progress Septemb[illegible] and 12, 1993.

LIABILITY INSURANCE

ERTIFICATE OF INSURANCE 01-18-93 ejl

his Certificate of Insurance neither affirmatively nor negatively
nends, extends or alters the coverage, limits, terms or conditions
the policies it certificates.)

CIGNA Property and Casualty Companies

Original in Liaison file - Copy #4

CIGNA

ORIGINAL

ACT/015/004

COMPANY CODES Copy Pam

- [2] CIGNA INSURANCE COMPANY
- [3] CIGNA INS. CO. OF TEXAS
- [5] PACIFIC EMPLOYERS INS. CO.
- [9] INSURANCE COMPANY OF NORTH AMERICA
- [A] CIGNA INS. CO. OF ILLINOIS
- [B] CIGNA INS. CO. OF OHIO
- [ ] (OTHER, — SPECIFY)

FOLD

to Certify to

State of Utah
Dept. of Natural Resources
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Susan -
FYI, ~~Then Automatic~~ me.

hat the following described policy or policies, issued by The Company as coded below, roviding insurance only for hazards checked by "X" below, have been issued to:

NAME AND ADDRESS OF INSURED: Atlantic Richfield Company, its Subsidiaries and subsidiaries thereof as now or hereinafter constituted, Atlantic Richfield Plaza, 515 So. Flower Street, Los Angeles, CA 90071

overing in accordance with the terms thereof, at the following location(s):

Including Mountain Coal Company and ARCO Coal Company

TYPE OF POLICY	HAZARDS	CODE	POLICY NUMBER	POLICY PERIOD	LIMITS OF LIABILITY
(a) Standard Workmen's Compensation & Employers' Liability	[ ]	[ ]			$ Statutory W. C. / One Accident and / Aggregate Disease
(b) General Liability					
Bodily Injury: Premises—Operations (including "Incidental Contracts" as defined below)	X	g	ISL G1 519134-A	01-01-93 to 01-01-96	$*See Below Each Person; Each [ ] Accident [ ] Occurrence
Bodily Injury: Independent Contractors	X	g			$
Bodily Injury: Completed Operations/Products	X	g			
Bodily Injury: Contractual, (Specific type as described in footnote below)	X	g			$ Aggregate—Completed Operations/Products
Property Damage: Premises—Operations (Including "Incidental Contracts" as defined below)	X	g	ISL G1 519134-A	01-01-93 to 01-01-96	$*See Below Each [ ] Accident [ ] Occurrence
Property Damage: Independent Contractors	X	g			$ Aggregate—Prem./Oper.
					$ Aggregate—Protective
Property Damage: Completed Operations/Products	X	g			$ Aggregate—Completed Operations/Products
Property Damage: Contractual, (Specific type as described in footnote below)	X	g			$ Aggregate—Contractual
(c) Automobile Liability					
Bodily Injury: Owned Automobiles	[ ]	[ ]			$ Each Person
Bodily Injury: Hired Automobiles	[ ]	[ ]			Each [ ] Accident [ ] Occurrence
Bodily Injury: Non-owned Automobiles	[ ]	[ ]			$
Property Damage: Owned Automobiles	[ ]	[ ]			$ Each [ ] Accident [ ] Occurrence
Property Damage: Hired Automobiles	[ ]	[ ]			
Property Damage: Non-owned Automobiles	[ ]	[ ]			
(d) INCLUDES "XCU" COVERAGE					* $500,000 Combined Single Limit, per occurrence/aggregate where applicable.

Contractual Footnote: Subject to all the policy terms applicable, specific contractual coverage is provided as respects

(Check Applicable) [ ] a contract [ ] purchase order agreements [ ] all contracts between the insured and:

In the event of cancellation of the policy or policies by the company, forty five (45) days' written notice of such cancellation will be given to you at the address stated above.

NAME OF OTHER PARTY

DATE (if applicable)

CONTRACT NO. (if any)

DESCRIPTION (OR JOB)
Huntington Canyon #4 Mine INA/015/004

Definitions: "Incidental contract" means any written (1) lease of premises (2) easement agreement, except in connection with construction or demolition operations on or adjacent to a railroad, (3) undertaking to indemnify a municipality required by municipal ordinance, except in connection with work f

DIVISION ORDERS

WATER MONITORING

#4

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

January 28, 1995

Ms. Pamela Grubaugh-Littig
Permit Supervisor
Utah Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Ms. Littig:

Enclosed are the results of the Mountain Coal Company Water Monitoring for the Fourth Quarter of 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy for
Paige B. Beville, MCC

DWG/db

Enclosures

cc: Paige B. Beville, MCC
File
WTRMON

E.I.S. Hydrology
Field Measurements Form

Date 11/22/97 Station # 41-34W

Company Mon. Coal

Time 10:10

Flow/Depth D

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream ✓ Well___ Discharge___ NPDES___

Collection Point Upper Mill Fork

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No___

Pump Reading

Comments Clear 8" Snow –

Field Monitor [illegible]

When Sample or Measurements Not Taken:

Reason: D

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

WATER MONITORING REPORT

Property: BCCC #4 Mine
Station: 4-3W
Location: Upper Mill Fork
Type: E. Stream
Frequency: Quarterly

Field Measurements	Date Sampled 02/11/94	05/16/94	09/02/94	11/22/94
Flow [gpm]	N/A	DRY	DRY	DRY
PH				
Sp. Cond. [ohms]				
Temp. [C]				
Diss. O [ppm]				
Lab. Meas. [mg/l]				
TDS				
TSS				
Al CaCO3				
Hd CaCO3				
HCO3				
CO3				
Cl				
SO4				
Ca				
Mg				
K				
Na				
Cat/An				
Fe				
Mn				

E.I.S. Hydrology
Field Measurements Form

Date 10/10/94 Station # A-6W

Company W. Paul

Time 10:20

Flow/Depth Dry

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No___

Pump Reading

Comments

Field Monitor

When Sample or Measurements Not Taken:

Reason:

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

E.I.S. Hydrology
Field Measurements Form

Date 11/22/94 Station # 4-6W

Company Mon. Coal

Time 9:40

Flow/Depth D

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point Inflow to Pond

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No X

Pump Reading

Comments Gun Snow Covered

Field Monitor [illegible]

When Sample or Measurements Not Taken:

Reason:

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

E.I.S. Hydrology
Field Measurements Form

Date 10/4/94 Station # 4-60

Company MN Coal

Time 10:20

Flow/Depth Dry

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No___

Pump Reading

Comments

Field Monitor

When Sample or Measurements Not Taken:

Reason:

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

WATER MONITORING REPORT

Property: BCCC #4 Mine
Station: 4-6W
Location: Inflow to Sed. Pond
Type: Surface Runoff
Frequency: Monthly

	Date Sampled										
Field Measurements	01/11/94	02/11/94	03/08/94	04/04/94	05/16/94	06/28/94	07/19/94	08/27/94	09/02/94	10/10/94	11/22/94
Flow [gpm]	N/A	N/A	N/A	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
PH											
Sp.Con. [ohms]											
Temp [C]											
Diss. O. [ppm]											
Lab. Meas. [mg/l]											
TDS											
TSS											
O & G											
Al CaCO3											
Hd CaCO3											
Ac CaCO3											
HCO3											
CO3											
Cl											
SO4											
Ca											
Mg											
K											
Na											
Cat/An											
Fe											
Mn											

12/11/94 Mean

INACC	DRY

E.I.S. Hydrology
Field Measurements Form

Date 10/11/94 Station # 4-7611

Company MN. Coal

Time 14:10

Flow/Depth N.A

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No___

Pump Reading

Comments

Field Monitor

When Sample or Measurements Not Taken:

Reason:

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

E.I.S. Hydrology
Field Measurements Form

Date 11/22/94 Station # 4-7W

Company Mtn Cove

Time 9:45

Flow/Depth D

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge X NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No___

Pump Reading

Comments Pond and Flow Area - Snow Covered - But Dry

Field Monitor [illegible]

When Sample or Measurements Not Taken:

Reason: D

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

E.I.S. Hydrology
Field Measurements Form

Date 12/11/94 Station # 4-7W

Company MH. Coal

Time 14:10

Flow/Depth N/A

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No___

Pump Reading

Comments

Field Monitor

When Sample or Measurements Not Taken:

Reason:

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

WATER MONITORING REPORT

Property: BCCC #4 Mine
Station: 4-7W
Location: Sed. Pond Discharge
Type: NPDES
Frequency: Monthly

	Date Sampled										
Field Measurements	01/11/94	02/11/94	03/08/94	04/04/94	05/16/94	06/20/94	07/19/94	08/27/94	09/02/94	10/10/94	11/22/94
Flow [gpm]	N/A	N/A	N/A	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
PH											
Sp.Con. [ohms]											
Temp [C]											
Diss. O. [ppm]											
Lab. Meas. [mg/l]											
TDS											
TSS											
O & G											
Al CaCO3											
Hd CaCO3											
Ac CaCO3											
HCO3											
CO3											
Cl											
SO4											
Ca											
Mg											
K											
Na											
Cat/An											
Fe											
Mn											

12/11/94 **Mean**

INACC	DRY

E.I.S. Hydrology
Field Measurements Form

Date 11/22/97 Station # 4-8W

Company MM Con

Time 9:00

Flow/Depth D

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No ✓

Pump Reading

Comments 8" Snow on Channel — on Culvert — No Evidence of flow

Field Monitor M. O'Connor

When Sample or Measurements Not Taken:

Reason: D

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

WATER MONITORING REPORT

Property: BCCC #4 Mine
Station: 4-8W
Location: Lower Mill Fork
Type: Int. Stream
Frequency: Quarterly

Field Measurements	Date Sampled 02/11/94	05/16/94	09/02/94	11/22/94
Flow [gpm]	N/A	DRY	DRY	DRY
PH				
Sp. Cond. [ohms]				
Temp. [C]				
Diss. O [ppm]				
Lab. Meas. [mg/l]				
TDS				
TSS				
Al CaCO3				
Hd CaCO3				
HCO3				
CO3				
Cl				
SO4				
Ca				
Mg				
K				
Na				
Cat/An				
Fe				
Mn				
Oil & Grease				

U.P.D.E.S.

DISCHARGE DATA

#4

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

January 28, 1995

Mr. Donald A Hilden, PH.D., Chief
Permits and Compliance Section
Department of Environmental Quality
Division of Water Quality
288 North 1460 West
P.O. Box 144870
Salt Lake City, Utah 84114-4870

Dear Mr. Hilden:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014, and UTG040015. These reports cover the month of December 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy for
Paige B. Beville, MCC

Enclosures

DWG/db

cc: Donna Franklin, E.P.A.
Pamela Grubaugh-Littig, UDOGM
Paige B. Beville, Mountain Coal Co.
File

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

January 28, 1995

Ms. Donna Franklin
U.S.E.P.A., Region VIII
999 18th Street
Denver Place - Suite 500 WM-C
Denver, Colorado 80202-2405

Dear Ms. Franklin:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014, and UTG040015. These reports cover the month of December 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy for
Paige B. Bevillle, MCC

Enclosures

DWG/db

cc: Pamela Grubaugh-Littig, UDOGM
Donald Hilden, D.E.Q.
Paige B. Beville, Mountain Coal Co.
File

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

January 28, 1995

Ms. Pamela Grubaugh-Littig
Utah Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Ms. Littig:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014, and UTG040015. These reports cover the month of December 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy for
Paige B. Beville, MCC

Enclosures

DWG/db

cc: Donna Franklin, E.P.A.
Donald Hilden, D.E.Q.
Paige B. Beville, Mountain Coal Co.
File

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)
NAME MOUNTAIN COAL COMPANY
ADDRESS P.O. BOX 591
SOMERSET CO 81434

FACILITY #4 MINE
LOCATION HUNTINGTON CYN.
ATTN: KATHLEEN WELT

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

(2-16) UTG040015 PERMIT NUMBER
(17-19) 001 A DISCHARGE NUMBER

MINOR
F - FINAL
WITHIN FOREST SVC BOUNDARY

Form Approved.
OMB No. 2040-0004
Approval expires 10-31-94

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	94	12	01	TO	94	12	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

*** NO DISCHARGE |X| ***

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) (46-53) AVERAGE	QUANTITY OR LOADING (54-61) MAXIMUM	UNITS	(4 Card Only) (38-45) MINIMUM	QUALITY OR CONCENTRATION (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
FLOW RATE	SAMPLE MEASUREMENT	NO DISCHARGE		(07)	******	******	******				
00056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT 30DA AVG	REPORT DAILY MX	GPD	******	******	******	********		ONCE/MONTH	MEASRD
PH	SAMPLE MEASUREMENT	******	******			******		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	********	6.5 DAILY MN	******	9.0 DAILY MX	SU		TWICE/MONTH	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******			(19)			
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	********	******	25 30DA AVG	70 DAILY MX	MG/L		ONCE/MONTH	GRAB
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	******	******		******	******		(25)			
00545 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	********	******	******	0.5 DAILY MX	ML/L		ONCE/MONTH	GRAB
OIL AND GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	******	******		******	******		(19)			
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	********	******	******	10 DAILY MX	MG/L		ONCE/MONTH	GRAB
IRON, TOTAL (AS FE)	SAMPLE MEASUREMENT	******	******		********	******		(19)			
01045 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	********	******	******	7.0 DAILY MX	MG/L		ONCE/MONTH	GRAB
SOLIDS, TOTAL DISSOLVED	SAMPLE MEASUREMENT	******		(26)	******	*********		(19)			
70295 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	2000 DAILY MX	LBS/DY	******	******	REPORT DAILY MX	MG/L		ONCE/MONTH	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
Kathleen Welt
Environmental Supervisor
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: AREA CODE 801 NUMBER 637-2422

DATE: YEAR 95 MO 01 DAY 27

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

TDS IS LIMITED TO ONE TON PER DAY FROM ALL OUTFALLS. DURING PRECIPITATION EVENTS SETTLEABLE SOLIDS SHALL BE LIMITED INSTEAD OF TSS. REPORT "DOES NOT APPLY" IN APPROPRIATE ROW.

#4

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

December 28, 1994

Mr. Donald A Hilden, PH.D., Chief
Permits and Compliance Section
Department of Environmental Quality
Division of Water Quality
288 North 1460 West
P.O. Box 144870
Salt Lake City, Utah 84114-4870

Dear Mr. Hilden:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014, and UTG040015. These reports cover the month of November 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy for
Paige B. Beville, MCC

Enclosures

DWG/db

cc: Donna Franklin, E.P.A.
Pamela Grubaugh-Littig, UDOGM
Paige B. Beville, Mountain Coal Co.
File

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

December 28, 1994

Ms. Pamela Grubaugh-Littig
Utah Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Ms. Littig:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014 and UTG040015. These reports cover the month of November 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy for
Paige B. Beville, MCC

Enclosures

DWG/db

cc: Donna Franklin, E.P.A.
Donald Hilden, D.E.Q.
Paige B. Beville, Mountain Coal Co.
File

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

December 28, 1994

Ms. Donna Franklin
U.S.E.P.A., Region VIII
999 18th Street
Denver Place - Suite 500 WM-C
Denver, Colorado 80202-2405

Dear Ms. Franklin:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014 and UTG040015. These reports cover the month of November 1994.

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Respectfully,

Dan W. Guy for
Paige B. Bevillle, MCC

Enclosures

DWG/db

cc: Pamela Grubaugh-Littig, UDOGM
Donald Hilden, D.E.Q.
Paige B. Beville, Mountain Coal Co.
File

PERMITTEE NAME / ADDRESS (Include Facility Name/Location if different)
NAME MOUNTAIN COAL COMPANY
ADDRESS P.O. BOX 591
SOMERSET CO 81434
FACILITY #4 MINE
LOCATION
ATTN: KATHLEEN WELT

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

(1-16) UTG040015 PERMIT NUMBER
(17-19) 001 A DISCHARGE NUMBER

MINOR
F - FINAL
WITHIN FOREST SVC BOUNDARY

Form Approved.
OMB No. 2040-0004
Approved expires 10-31-97

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	94	11	01	TO	94	11	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

*** NO DISCHARGE |X| ***
NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) (46-53) QUANTITY OR LOADING (54-61) AVERAGE	MAXIMUM	UNITS	(4 Card Only) (38-45) QUALITY OR CONCENTRATION (46-53) MINIMUM	AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
FLOW RATE	SAMPLE MEASUREMENT			(07)	******	******	******				
00056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT 30DA AVG	REPORT DAILY MX	GPD	******	******	******	**** ****		ONCE/MEASUREMENT	
PH	SAMPLE MEASUREMENT	******	******			******		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	6.5 DAILY MN	******	9.0 DAILY MX	SU		TWICE/CALEND MONTH	
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******			(19)			
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	25 30DA AVG	70 DAILY MX	MG/L		ONCE/CALEND MONTH	
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	******	******		******	******		(25)			
00545 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	0.5 DAILY MX	ML/L		ONCE/CALEND MONTH	
OIL AND GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	******	******		******	******		(19)			
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	10 DAILY MX	MG/L		ONCE/CALEND MONTH	
IRON, TOTAL (AS FE)	SAMPLE MEASUREMENT	******	******		******	******		(19)			
01045 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	2.0 DAILY MX	MG/L		ONCE/CALEND MONTH	
SOLIDS, TOTAL DISSOLVED	SAMPLE MEASUREMENT	******		(26)	******	******		(19)			
70295 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	2000 DAILY MX	LBS/DY	******	******	REPORT DAILY MX	MG/L		ONCE/CALEND MONTH	

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
Kathleen Welt
Environmental Supervisor
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 USC § 1001 AND 33 USC § 1319 (Penalties under these statutes may include fines up to $10,000 and/or maximum imprisonment of between 6 months and 5 years.)

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
AREA CODE	NUMBER	YEAR	MO	DAY
801	637-2422	94	12	23

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

TDS IS LIMITED TO ONE TON PER DAY FROM ALL OUTFALLS. DURING PRECIPITATION EVENTS SETTLEABLE SOLIDS SHALL BE LIMITED INSTEAD OF TSS. REPORT "DOES NOT APPLY" IN APPROPRIATE ROW.

4

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

November 28, 1994

Mr. Donald A Hilden, PH.D., Chief
Permits and Compliance Section
Department of Environmental Quality
Division of Water Quality
288 North 1460 West
P.O. Box 144870
Salt Lake City, Utah 84114-4870

Dear Mr. Hilden:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014, and UTG040015. These reports cover the month of October 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy for
Paige B. Beville, MCC

Enclosures

DWG/db

cc: Donna Franklin, E.P.A.
Pamela Grubaugh-Littig, UDOGM
Paige B. Beville, Mountain Coal Co.
File

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

November 28, 1994

Ms. Pamela Grubaugh-Littig
Utah Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Ms. Littig:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014 and UTG040015. These reports cover the month of October 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy for
Paige B. Beville, MCC

Enclosures

DWG/db

cc: Donna Franklin, E.P.A.
Donald Hilden, D.E.Q.
Paige B. Beville, Mountain Coal Co.
File

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

November 28, 1994

Ms. Donna Franklin
U.S.E.P.A., Region VIII
999 18th Street
Denver Place - Suite 500 WM-C
Denver, Colorado 80202-2405

Dear Ms. Franklin:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014 and UTG040015. These reports cover the month of October 1994.

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Respectfully,

Dan W. Guy for
Paige B. Bevillle, MCC

Enclosures

DWG/db

cc: Pamela Grubaugh-Littig, UDOGM
Donald Hilden, D.E.Q.
Paige B. Beville, Mountain Coal Co.
File

PERMITTEE NAME AND ADDRESS (Include Facility Name/Location if different)

NAME MOUNTAIN COAL COMPANY

ADDRESS P.O. BOX 591

SOMERSET CO 81434

FACILITY

LOCATION #4 MINE

ATTN: KATHLEEN WELT

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

(2-16) UTG040015 — PERMIT NUMBER

(17-19) 001 A — DISCHARGE NUMBER

MINOR

F - FINAL

WITHIN FOREST BOUNDARY

Form Approved. OMB No. 2040-0004

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	94	10	01	TO	94	10	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

*** NO DISCHARGE |X| ***

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX. (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
FLOW RATE	SAMPLE MEASUREMENT			(07)	******	******	******				
00056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT 30DA AVG	REPORT DAILY MX	GPD	******	******	******	**** ****		ONCE/MEASUREMENT	
PH	SAMPLE MEASUREMENT	******	******			******		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	6.5 DAILY MN	******	9.0 DAILY MX	SU		TWICE/MONTH	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******			(19)			
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	25 30DA AVG	70 DAILY MX	MG/L		ONCE/MONTH	GRAB
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	******	******		******	******		(25)			
00545 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	0.5 DAILY MX	ML/L		ONCE/MONTH	GRAB
OIL AND GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	******	******		******	******		(19)			
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	10 DAILY MX	MG/L		ONCE/MONTH	GRAB
IRON, TOTAL (AS FE)	SAMPLE MEASUREMENT	******	******		******	******		(19)			
01045 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	2.0 DAILY MX	MG/L		ONCE/MONTH	GRAB
SOLIDS, TOTAL DISSOLVED	SAMPLE MEASUREMENT	******		(26)	******	******		(19)			
70295 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	2000 DAILY MX	LBS/DY	******	******	REPORT DAILY MX	MG/L		ONCE/MONTH	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

Kathleen Welt
Environmental Supervisor

TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319 (*Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.*)

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: AREA CODE 801 NUMBER 637-2422

DATE: YEAR 94 MO 11 DAY 28

COMMENT AND EXPLANATION OF ANY VIOLATIONS (*Reference all attachments here*)

TDS IS LIMITED TO ONE TON PER DAY FROM ALL OUTFALLS. DURING PRECIPITATION EVENTS SETTLEABLE SOLIDS SHALL BE LIMITED INSTEAD OF TSS. REPORT "DOES NOT APPLY" IN APPROPRIATE ROW.

4

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

September 28, 1994

Mr. Donald A Hilden, PH.D., Chief
Permits and Compliance Section
Department of Environmental Quality
Division of Water Quality
288 North 1460 West
P.O. Box 144870
Salt Lake City, Utah 84114-4870

Dear Mr. Hilden:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014, and UTG040015. These reports cover the months of July and August 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy

Dan W. Guy for
Paige B. Beville, MCC

Enclosures

DWG/db

cc: Donna Franklin, E.P.A.
Pamela Grubaugh-Littig, UDOGM
Paige B. Beville, Mountain Coal Co.
File

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

September 28, 1994

Ms. Pamela Grubaugh-Littig
Utah Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Ms. Littig:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014 and UTG040015. These reports cover the months of July and August 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy

Dan W. Guy for
Paige B. Beville, MCC

Enclosures

DWG/db

cc: Donna Franklin, E.P.A.
Donald Hilden, D.E.Q.
Paige B. Beville, Mountain Coal Co.
File

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

September 28, 1994

Ms. Donna Franklin
U.S.E.P.A., Region VIII
999 18th Street
Denver Place - Suite 500 WM-C
Denver, Colorado 80202-2405

Dear Ms. Franklin:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014 and UTG040015. These reports cover the months of July and August 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy for
Paige B. Bevillle, MCC

Enclosures

DWG/db

cc: Pamela Grubaugh-Littig, UDOGM
Donald Hilden, D.E.Q.
Paige B. Beville, Mountain Coal Co.
File

PERMITTEE NAME / ADDRESS (Include Facility Name/Location if different)

NAME MOUNTAIN COAL COMPANY

ADDRESS P.O. BOX 591

SOMERSET CO 81434

FACILITY

LOCATION

ATTN: KATHLEEN WELT

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

(2-16) UT6040015 PERMIT NUMBER

(17-19) 001 A DISCHARGE NUMBER

MINOR

Form Approved.
OMB No. 2040-0004
Approval Expires

F - FINAL

WITHIN FOREST SVC BOUNDARY

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	94	08	01	TO	94	08	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

*** NO DISCHARGE |X| ***

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
FLOW RATE	SAMPLE MEASUREMENT			(07)	******	******	******				
00056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT 30DA AVG	REPORT DAILY MX	GPD	******	******	******	**** ****		ONCE/MEASUREMENT	
PH	SAMPLE MEASUREMENT	******	******			******		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	6.5 DAILY MN	******	9.0 DAILY MX	SU		TWICE/MONTH	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******			(19)			
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	25 30DA AVG	70 DAILY MX	MG/L		ONCE/MONTH	GRAB
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	******	******		******	******		(25)			
00545 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	0.5 DAILY MX	ML/L		ONCE/MONTH	GRAB
OIL AND GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	******	******		******	******		(19)			
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	10 DAILY MX	MG/L		ONCE/MONTH	GRAB
IRON, TOTAL (AS FE)	SAMPLE MEASUREMENT	******	******		******	******		(19)			
01045 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	2.0 DAILY MX	MG/L		ONCE/MONTH	GRAB
SOLIDS, TOTAL DISSOLVED	SAMPLE MEASUREMENT	******		(26)	******	******		(19)			
70295 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	2000 DAILY MX	LBS/DY	******	******	REPORT DAILY MX	MG/L		ONCE/MONTH	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

Kathleen Welt
Environmental Supervisor

TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 USC § 1001 AND 33 USC § 1319 (*Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.*)

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
801	637-2422	94	09	28
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS (*Reference all attachments here*)

TDS IS LIMITED TO ONE TON PER DAY FROM ALL OUTFALLS. DURING PRECIPITATION EVENTS SETTLEABLE SOLIDS SHALL BE LIMITED INSTEAD OF TSS. REPORT "DOES NOT APPLY" IN APPROPRIATE ROW.

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)
NAME MOUNTAIN COAL COMPANY
ADDRESS P.O. BOX 591
SOMERSET CO 81434
FACILITY
LOCATION
ATTN: KATHLEEN WELT

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

(2-16) UTG040015 PERMIT NUMBER
(17-19) 001 A DISCHARGE NUMBER

MINOR
F - FINAL
WITHIN FOREST SVC BOUNDARY

Form Approved.
OMB No. 2040-0004
Approval Expires 03-31-97

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	94	07	01	TO	94	07	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

*** NO DISCHARGE |X| ***
NOTE: Read instructions before completing this form.

PARAMETER (32-37)		QUANTITY OR LOADING (3 Card Only) (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	QUALITY OR CONCENTRATION (4 Card Only) (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
FLOW RATE	SAMPLE MEASUREMENT			(07)	******	******	******				
00056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT 30DA AVG	REPORT DAILY MX	GPD	******	******	******	**** ****		ONCE/MEASURE MONTH	
PH	SAMPLE MEASUREMENT	******	******			******		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	6.5 DAILY MN	******	9.0 DAILY MX	SU		TWICE/MEASURE MONTH	
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******			(19)			
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	25 30DA AVG	70 DAILY MX	MG/L		ONCE/MEASURE MONTH	
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	******	******		******	******		(25)			
00545 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	0.5 DAILY MX	ML/L		ONCE/MEASURE MONTH	
OIL AND GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	******	******		******	******		(19)			
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	10 DAILY MX	MG/L		ONCE/MEASURE MONTH	
IRON, TOTAL (AS FE)	SAMPLE MEASUREMENT	******	******		******	******		(19)			
01045 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	2.0 DAILY MX	MG/L		ONCE/MEASURE MONTH	
SOLIDS, TOTAL DISSOLVED	SAMPLE MEASUREMENT	******		(26)	******	******		(19)			
70295 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	2000 DAILY MX	LBS/DY	******	******	REPORT DAILY MX	MG/L		ONCE/MEASURE MONTH	

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
Kathleen Welt
Environmental Supervisor
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. (Penalties under these statutes may include fines up to $10,000 and/or maximum imprisonment of between 6 months and 5 years.)

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: AREA CODE 801, NUMBER 637-2422

DATE: YEAR 94, MO 08, DAY 28

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

TDS IS LIMITED TO ONE TON PER DAY FROM ALL OUTFALLS. DURING PRECIPITATION EVENTS SETTLEABLE SOLIDS SHALL BE LIMITED INSTEAD OF TSS. REPORT "DOES NOT APPLY" IN APPROPRIATE ROW.

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

July 28, 1994

Mr. Donald A Hilden, PH.D., Chief
Permits and Compliance Section
Department of Environmental Quality
Division of Water Quality
288 North 1460 West
P.O. Box 144870
Salt Lake City, Utah 84114-4870

Dear Mr. Hilden:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014, and UTG040015. These reports cover the month of June 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy for
Kathy Welt, MCC

Enclosures

DWG/db

cc: Donna Franklin, E.P.A.
Pamela Grubaugh-Littig, UDOGM
Kathy Welt, Mountain Coal Co.
File

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

July 28, 1994

Ms. Donna Franklin
U.S.E.P.A., Region VIII
999 18th Street
Denver Place - Suite 500 WM-C
Denver, Colorado 80202-2405

Dear Ms. Franklin:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014 and UTG040015. These reports cover the month of June 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy for
Kathy Welt, MCC

Enclosures

DWG/db

cc: Pamela Grubaugh-Littig, UDOGM
Donald Hilden, D.E.Q.
Kathy Welt, Mountain Coal Co.
File

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

July 28, 1994

Ms. Pamela Grubaugh-Littig
Utah Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Ms. Littig:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014 and UTG040015. These reports cover the month of June 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy for
Kathy Welt, MCC

Enclosures

DWG/db

cc: Donna Franklin, E.P.A.
Donald Hilden, D.E.Q.
Kathy Welt, Mountain Coal Co.
File

PERMITTEE NAME / Facility Name/Loc. ADDRESS (Include different)
NAME MOUNTAIN COAL COMPANY
ADDRESS P.O. BOX 591
SOMERSET CO 81434
FACILITY #4 MINE
LOCATION
ATTN: KATHLEEN WELT

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) MONITORING REPORT (DMR)

(2-16) UTG040015 PERMIT NUMBER
(17-19) 001 A DISCHARGE NUMBER

MINOR
F - FINAL
WITHIN FOREST SVC BOUNDARY

Form Approved.
OMB No. 2040-0004
Approval expires 10-01-94

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	94	06	01	TO	94	06	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

*** NO DISCHARGE |X| ***
NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) (46-53) QUANTITY OR LOADING (54-61) AVERAGE	MAXIMUM	UNITS	(4 Card Only) (38-45) QUALITY OR CONCENTRATION (46-53) MINIMUM	AVERAGE	MAXIMUM	UNITS	NO. EX. (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
FLOW RATE	SAMPLE MEASUREMENT	NO DISCHARGE		(07)	******	******	******				
00056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT 30DA AVG	REPORT DAILY MX	GPD	******	******	******	********		ONCE/MEASRD MONTH	
PH	SAMPLE MEASUREMENT	******	******			******		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	********	6.5 DAILY MN	******	9.0 DAILY MX	SU		TWICE/GRAB MONTH	
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******			(19)			
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	********	******	25 30DA AVG	70 DAILY MX	MG/L		ONCE/GRAB MONTH	
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	******	******		******	********		(25)			
00545 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	********	******	******	0.5 DAILY MX	ML/L		ONCE/GRAB MONTH	
OIL AND GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	******	******		******	******		(19)			
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	********	******	******	10 DAILY MX	MG/L		ONCE/GRAB MONTH	
IRON, TOTAL (AS FE)	SAMPLE MEASUREMENT	******	******		******	******		(19)			
01045 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	********	******	******	2.0 DAILY MX	MG/L		ONCE/GRAB MONTH	
SOLIDS, TOTAL DISSOLVED	SAMPLE MEASUREMENT	******		(26)	********	******		(19)			
70295 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	2000 DAILY MX	LBS/DY	******	******	REPORT DAILY MX	MG/L		ONCE/GRAB MONTH	

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
Kathleen Welt
Environmental Supervisor
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*

Dan W. Guy
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
801	637-2422	94	07	28
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

TDS IS LIMITED TO ONE TON PER DAY FROM ALL OUTFALLS. DURING PRECIPITATION EVENTS SETTLEABLE SOLIDS SHALL BE LIMITED INSTEAD OF TSS. REPORT "DOES NOT APPLY" IN APPROPRIATE ROW.

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

June 28, 1994

Mr. Donald A Hilden, PH.D., Chief
Permits and Compliance Section
Department of Environmental Quality
Division of Water Quality
288 North 1460 West
P.O. Box 144870
Salt Lake City, Utah 84114-4870

Dear Mr. Hilden:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014, and UTG040015. These reports cover the month of May 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy for
Kathy Welt, MCC

Enclosures

DWG/db

cc: Donna Franklin, E.P.A.
Pamela Grubaugh-Littig, UDOGM
Kathy Welt, Mountain Coal Co.
File

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

June 28, 1994

Ms. Pamela Grubaugh-Littig
Utah Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Ms. Littig:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014 and UTG040015. These reports cover the month of May 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy for
Kathy Welt, MCC

Enclosures

DWG/db

cc: Donna Franklin, E.P.A.
Donald Hilden, D.E.Q.
Kathy Welt, Mountain Coal Co.
File

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

June 28, 1994

Ms. Donna Franklin
U.S.E.P.A., Region VIII
999 18th Street
Denver Place - Suite 500 WM-C
Denver, Colorado 80202-2405

Dear Ms. Franklin:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014 and UTG040015. These reports cover the month of May 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy for
Kathy Welt, MCC

Enclosures

DWG/db

cc: Pamela Grubaugh-Littig, UDOGM
Donald Hilden, D.E.Q.
Kathy Welt, Mountain Coal Co.
File

4

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

May 27, 1994

Mr. Donald A Hilden, PH.D., Chief
Permits and Compliance Section
Department of Environmental Quality
Division of Water Quality
288 North 1460 West
P.O. Box 144870
Salt Lake City, Utah 84114-4870

Dear Mr. Hilden:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014, and UTG040015. These reports cover the month of April 1994.
If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy

Dan W. Guy for
Kathy Welt, MCC

Enclosures

DWG/db

cc: Donna Franklin, E.P.A.
Pamela Grubaugh-Littig, UDOGM
Kathy Welt, Mountain Coal Co.
File

PERMITTEE N[redacted]DRESS (Include Facility Name/L[redacted] if different)
NAME MOU[redacted]AIN COAL COMPANY
ADDRESS P.O. BOX 591
SOMERSET CO 81434

FACILITY #4 MINE
LOCATION

ATTN: KATHLEEN WELT

NATIONAL POLL[redacted]DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHA[redacted] MONITORING REPORT (DMR)

(2-16) UTG040015 PERMIT NUMBER

(17-19) 001 A DISCHARGE NUMBER

MINOR

F - FINAL

WITHIN FOREST SVC BOUNDARY

Form Approved.
OMB No. 2040-0004
Approval expires [illegible]

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	94	05	01	TO	94	05	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

*** NO DISCHARGE [X] ***

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPL TYPE (69-70)
FLOW RATE 00056 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT			(07)	******	******	******				
	PERMIT REQUIREMENT	REPORT 30DA AVG	REPORT DAILY MX	GPD	******	******	******	**** ****		[illegible]NCE/ [illegible] MONTH	[illegible]
PH 00400 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******			******		(12)			
	PERMIT REQUIREMENT	******	******	**** ****	6.5 DAILY MN	******	9.0 DAILY MX	SU		TWICE/GRAB MONTH	
SOLIDS, TOTAL SUSPENDED 00530 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******			(19)			
	PERMIT REQUIREMENT	******	******	**** ****	******	25 30DA AVG	70 DAILY MX	MG/L		ONCE/ GRAB MONTH	
SOLIDS, SETTLEABLE 00545 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******	******		(25)			
	PERMIT REQUIREMENT	******	******	**** ****	******	******	0.5 DAILY MX	ML/L		ONCE/ GRAB MONTH	
OIL AND GREASE FREON EXTR-GRAV METH 00556 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******	******		(19)			
	PERMIT REQUIREMENT	******	******	**** ****	******	******	10 DAILY MX	MG/L		ONCE/ GRAB MONTH	
IRON, TOTAL (AS FE) 01045 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******	******		(19)			
	PERMIT REQUIREMENT	******	******	**** ****	******	******	2.0 DAILY MX	MG/L		ONCE/ GRAB MONTH	
SOLIDS, TOTAL DISSOLVED 70295 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******		(26)	******	******		(19)			
	PERMIT REQUIREMENT	******	2000 DAILY MX	LBS/DY	******	******	REPORT DAILY MX	MG/L		ONCE/ GRAB MONTH	

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
Kathleen Welt
Environmental Supervisor
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 USC § 1001 AND 33 USC § 1319. (Penalties under these statutes may include fines up to $10,000 and/or maximum imprisonment of between 6 months and 5 years.)

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: AREA CODE 801, NUMBER 637-2422

DATE: YEAR 94, MO 06, DAY 28

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

TDS IS LIMITED TO ONE TON PER DAY FROM ALL OUTFALLS. DURING PRECIPITATION EVENTS SETTLEABLE SOLIDS SHALL BE LIMITED INSTEAD OF TSS. REPORT "DOES NOT APPLY" IN APPROPRIATE ROW.

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

May 27, 1994

Ms. Donna Franklin
U.S.E.P.A., Region VIII
999 18th Street
Denver Place - Suite 500 WM-C
Denver, Colorado 80202-2405

Dear Ms. Franklin:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014 and UTG040015. These reports cover the month of April 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy

Dan W. Guy for
Kathy Welt, MCC

Enclosures

DWG/db

cc: Pamela Grubaugh-Littig, UDOGM
Donald Hilden, D.E.Q.
Kathy Welt, Mountain Coal Co.
File

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

May 27, 1994

Ms. Pamela Grubaugh-Littig
Utah Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Ms. Littig:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014 and UTG040015. These reports cover the month of April 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy for
Kathy Welt, MCC

Enclosures

DWG/db

cc: Donna Franklin, E.P.A.
Donald Hilden, D.E.Q.
Kathy Welt, Mountain Coal Co.
File

PERMITTEE NAME / ADDRESS (Include Facility Name/Location if different)
NAME MOUNTAIN COAL COMPANY
ADDRESS P.O. BOX 591
SOMERSET CO 81434
FACILITY #4 Mine
LOCATION
ATTN: KATHLEEN WELT

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

(1-16) UTG040015 PERMIT NUMBER
(17-19) 001 A DISCHARGE NUMBER

MINOR

F - FINAL
WITHIN FOREST SVC BOUNDARY

Form Approved.
OMB No. 2040-0004
Approval expires

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	94	04	01	TO	94	04	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

*** NO DISCHARGE |X| ***

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		QUANTITY OR LOADING (3 Card Only) (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	QUALITY OR CONCENTRATION (4 Card Only) (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
FLOW RATE	SAMPLE MEASUREMENT			(07)	******	******	******				
00056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT 30DA AVG	REPORT DAILY MX	GPD	******	******	******	**** ****		ONCE/MONTH	MEASURED
PH	SAMPLE MEASUREMENT	******	******			******		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	6.5 DAILY MN	******	9.0 DAILY MX	SU		TWICE/MONTH	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******			(19)			
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	25 30DA AVG	70 DAILY MX	MG/L		ONCE/MONTH	GRAB
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	******	******		******	******		(25)			
00545 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	0.5 DAILY MX	ML/L		ONCE/MONTH	GRAB
OIL AND GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	******	******		******	******		(19)			
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	10 DAILY MX	MG/L		ONCE/MONTH	GRAB
IRON, TOTAL (AS FE)	SAMPLE MEASUREMENT	******	******		******	******		(19)			
01045 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	2.0 DAILY MX	MG/L		ONCE/MONTH	GRAB
SOLIDS, TOTAL DISSOLVED	SAMPLE MEASUREMENT	******		(26)	******	******		(19)			
70295 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	2000 DAILY MX	LBS/DY	******	******	REPORT DAILY MX	MG/L		ONCE/MONTH	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
Kathleen Welt
Environmental Supervisor
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319 (*Penalties under these statutes may include fines up to $10,000 and/or maximum imprisonment of between 6 months and 5 years.*)

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
AREA CODE	NUMBER	YEAR	MO	DAY
801	637-2422	94	05	27

COMMENT AND EXPLANATION OF ANY VIOLATIONS (*Reference all attachments here*)

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4

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

April 28, 1994

Mr. Donald A Hilden, PH.D., Chief
Permits and Compliance Section
Department of Environmental Quality
Division of Water Quality
288 North 1460 West
P.O. Box 144870
Salt Lake City, Utah 84114-4870

Dear Mr. Hilden:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014, and UTG040015. These reports cover the month of March 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy for
Kathy Welt, MCC

Enclosures

DWG/db

cc: Donna Franklin, E.P.A.
Lowell Braxton, UDOGM
Kathy Welt, Mountain Coal Co.
File

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

April 28, 1994

Ms. Donna Franklin
U.S.E.P.A., Region VIII
999 18th Street
Denver Place - Suite 500 WM-C
Denver, Colorado 80202-2405

Dear Ms. Franklin:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014 and UTG040015. These reports cover the month of March 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy for
Kathy Welt, MCC

Enclosures

DWG/db

cc: Lowell Braxton, UDOGM
Donald Hilden, D.E.Q.
Kathy Welt, Mountain Coal Co.
File

Mountain Coal Company
West Elk Mine
Post Office Box 591
Somerset, Colorado 81434
Telephone 303 929-5015

April 28, 1994

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

Dear Mr. Braxton:

Enclosed please find Quarterly Discharge Monitoring Reports for Mountain Coal Company's UPDES Permit Numbers UTG040004, UTG040005, UTG040014 and UTG040015. These reports cover the month of March 1994.

If you have any questions or need any additional information, please contact me.

Respectfully,

Dan W. Guy for
Kathy Welt, MCC

Enclosures

DWG/db

cc: Donna Franklin, E.P.A.
Donald Hilden, D.E.Q.
Kathy Welt, Mountain Coal Co.
File

PERMITTEE NAME / ADDRESS (Include Facility Name/Location if different)
NAME MOUNTAIN COAL COMPANY
ADDRESS P.O. BOX 591
SOMERSET CO 81434
FACILITY
LOCATION
ATTN: KATHLEEN WELT

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGE MONITORING REPORT (DMR)

(2-16) UTG040015 PERMIT NUMBER

(17-19) 001 A DISCHARGE NUMBER

MINOR

F - FINAL

WITHIN FOREST SVC BOUNDARY

Form Approved. OMB No. 2040-0004 Approved expires 10-31-94

MONITORING PERIOD

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PARAMETER (32-37)		(3 Card Only) (46-53) QUANTITY OR LOADING (54-61) AVERAGE	MAXIMUM	UNITS	(4 Card Only) (38-45) QUALITY OR CONCENTRATION (46-53) MINIMUM	(54-61) AVERAGE	MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
FLOW RATE 00056 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT			(07)	******	******	******				
	PERMIT REQUIREMENT	REPORT 30DA AVG	REPORT DAILY MX	GPD	******	******	******	**** ****		ONCE/MEASRD MONTH	
PH 00400 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******			******		(12)			
	PERMIT REQUIREMENT	******	******	**** ****	6.5 DAILY MN	******	9.0 DAILY MX	SU		TWICE/GRAB MONTH	
SOLIDS, TOTAL SUSPENDED 00530 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******			(19)			
	PERMIT REQUIREMENT	******	******	**** ****	******	25 30DA AVG	70 DAILY MX	MG/L		ONCE/GRAB MONTH	
SOLIDS, SETTLEABLE 00545 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******	******		(25)			
	PERMIT REQUIREMENT	******	******	**** ****	******	******	0.5 DAILY MX	ML/L		ONCE/GRAB MONTH	
OIL AND GREASE FREON EXTR-GRAV METH 00556 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******	******		(19)			
	PERMIT REQUIREMENT	******	******	**** ****	******	******	10 DAILY MX	MG/L		ONCE/GRAB MONTH	
IRON, TOTAL (AS FE) 01045 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******	******		(19)			
	PERMIT REQUIREMENT	******	******	**** ****	******	******	2.0 DAILY MX	MG/L		ONCE/GRAB MONTH	
SOLIDS, TOTAL DISSOLVED 70295 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******		(26)	******	******		(19)			
	PERMIT REQUIREMENT	******	2000 DAILY MX	LBS/DY	******	******	REPORT DAILY MX	MG/L		ONCE/GRAB MONTH	

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
Kathleen Welt
Environmental Supervisor
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319 (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)

Dan W. Guy
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: AREA CODE 801, NUMBER 637-2422

DATE: YEAR 94, MO 04, DAY 28

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

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PERMITTEE NAME / Facility Name/Location (Include if different)
NAME MOUNTAIN COAL COMPANY
ADDRESS P.O. BOX 591
SOMERSET CO 81434
FACILITY
LOCATION
ATTN: KATHLEEN WELT

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

(2-16) UTG040015 — PERMIT NUMBER
(17-19) 001 A — DISCHARGE NUMBER

MINOR
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Form Approved.
OMB No. 2040-0004
Approval expires 10-31-91

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PH	SAMPLE MEASUREMENT	******	******			******		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	********	6.5 DAILY MN	******	9.0 DAILY MX	SU		TWICE/MONTH	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******			(19)			
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	********	******	25 30DA AVG	70 DAILY MX	MG/L		ONCE/MONTH	GRAB
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	******	******		******	******		(25)			
00545 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	********	******	******	0.5 DAILY MX	ML/L		ONCE/MONTH	GRAB
OIL AND GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	******	******		******	******		(19)			
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	********	******	******	10 DAILY MX	MG/L		ONCE/MONTH	GRAB
IRON, TOTAL (AS FE)	SAMPLE MEASUREMENT	******	******		******	******		(19)			
01045 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	********	******	******	2.0 DAILY MX	MG/L		ONCE/MONTH	GRAB
SOLIDS, TOTAL DISSOLVED	SAMPLE MEASUREMENT	******		(26)	******	******		(19)			
70295 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	2000 DAILY MX	LBS/DY	******	******	REPORT DAILY MX	MG/L		ONCE/MONTH	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
Kathleen Welt
Environmental Supervisor
TYPED OR PRINTED

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Dan W. Guy
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: AREA CODE 801 NUMBER 637-2422
DATE: YEAR 94 MO 02 DAY 28

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

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MITTEE NAME/ADDR (Include
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ME MOUNTAIN COAL COMPANY
DRESS P.O. BOX 591
SOMERSET CO 81434
ILITY
ATION
TN: KATHLEEN WELT

NATIONAL POLLUTANT DIS E ELIMINATION SYSTEM (NPDES)
DISCHARGE MO ORING REPORT (DMR)
(2-16) (17-19)

UTG040015
PERMIT NUMBER

001 A
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OW RATE	SAMPLE MEASUREMENT			(07)	******	******	******				
056 1 0 0 FLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT 30DA AVG	REPORT DAILY MX	GPD	******	******	******	**** ****		ONCE/MEASRD MONTH	
	SAMPLE MEASUREMENT	******	******			******		(12)			
400 1 0 0 FLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	6.5 DAILY MN	******	9.0 DAILY MX	SU		TWICE/GRAB MONTH	
LIDS, TOTAL SPENDED	SAMPLE MEASUREMENT	******	******		******			(19)			
530 1 0 0 FLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	25 30DA AVG	70 DAILY MX	MG/L		ONCE/GRAB MONTH	
LIDS, SETTLEABLE	SAMPLE MEASUREMENT	******	******		******	******		(25)			
545 1 0 0 FLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	0.5 DAILY MX	ML/L		ONCE/GRAB MONTH	
L AND GREASE EON EXTR-GRAV METH	SAMPLE MEASUREMENT	******	******		******	******		(19)			
556 1 0 0 FLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	10 DAILY MX	MG/L		ONCE/GRAB MONTH	
ON, TOTAL (AS FE)	SAMPLE MEASUREMENT	******	******		******	******		(19)			
045 1 0 0 FLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	2.0 DAILY MX	MG/L		ONCE/GRAB MONTH	
LIDS, TOTAL SSOLVED	SAMPLE MEASUREMENT	******		(26)	******	******		(19)			
295 1 0 0 FLUENT GROSS VALUE	PERMIT REQUIREMENT	******	2000 DAILY MX	LB S/DY	******	******	REPORT DAILY MX	MG/L		ONCE/GRAB MONTH	

ME/TITLE PRINCIPAL EXECUTIVE OFFICER

Kathleen Welt
Environmental Supervisor

TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319 (*Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.*)

Dan N. Guy
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: AREA CODE 801, NUMBER 637-2422

DATE: YEAR 94, MO 02, DAY 28

MENT AND EXPLANATION OF ANY VIOLATIONS (*Reference all attachments here*)

S IS LIMITED TO ONE TON PER DAY FROM ALL OUTFALLS. DURING PRECIPITATION EVENTS SETTLEABLE SOLIDS SHALL LIMITED INSTEAD OF TSS. REPORT "DOES NOT APPLY" IN APPROPRIATE ROW.

POND INSPECTIONS

E.I.S Hydrology
Pond Inspection Report

POND: #4

LOCATION: Mill Fork

ITEM	REMARKS
(1) Potential Safety Hazards	None
(2) Slope Stability	Stable
(3) Erosion	None
(4) Construction and Maintenance Performance Standards	Good Lawn well kept & clean
(5) Recommendations/Comments	Keep well - 10" water No discharge

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Inspector

11/4/94

Date

E.I.S Hydrology
Pond Inspection Report

POND: #4 Mine LOCATION: Mill Fork

ITEM	REMARKS
(1) Potential Safety Hazards	None
(2) Slope Stability	Stable
(3) Erosion	None
(4) Construction and Maintenance Performance Standards	Good
(5) Recommendations/Comments	No Discharge – Both Cells Dry

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Inspector

Date 8/17/94

E.I.S Hydrology
Pond Inspection Report

POND: #4 LOCATION: Mill Wright Rd.

ITEM	REMARKS
(1) Potential Safety Hazards	None
(2) Slope Stability	Stable
(3) Erosion	None
(4) Construction and Maintenance Performance Standards	Good
(5) Recommendations/Comments	Upper Cell - 1" Water Lower Cell Dry

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Inspector

4/12/94
Date

E.I.S Hydrology
Pond Inspection Report

POND: #4 LOCATION: Mill Fork

ITEM	REMARKS
(1) Potential Safety Hazards	
(2) Slope Stability	
(3) Erosion	
(4) Construction and Maintenance Performance Standards	
(5) Recommendations/Comments	Road - Snow Removal 4 wheeler bridge Not Accessible

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Inspector

Date 3/8/94

SUBSIDENCE

SURVEY

ENVIRONMENTAL INDUSTRIAL SERVICES
4855 N. Spring Glen Rd., Helper, UT 84526 - Telephone (801) 472-3814 - FAX (801) 472-8780

December 15, 1994

Blackhawk Engineering
ATTN: Dan Guy, P.E.

Re: Subsidence Inventory; Millfork No. 4 Mine

Dear Mr. Guy:

On 10/12/94, Mr. Ron Prettyman and myself inventoried the surface area above the No. 4 Mine. The purpose of this inventory was to locate any and all evidence of subsidence or potential subsidence. Three springs that originate on the ridge above the mine were also checked relative to their flow.

An eight hour ground search yielded no apparent subsidence or evidence of diminished flow to any of the springs. We noted two areas that appeared to have had recent minor rock falls (within the past year). However, it did not appear that these events were the result of any slumping or subsidence from the mine.

If I can be of further assistance, please contact our office.

Sincerely,

M.A. Coonrod

VEGETATION MONITORING

VEGETATION SAMPLING: RECLAIMED & REFERENCE AREAS OF THE HUNTINGTON NO. 4 MINE

1994

Prepared by

MT. NEBO SCIENTIFIC, INC.
330 East 400 South, Suite 6
P.O. Box 337
Springville, Utah 84663
(801) 489-6937

Patrick D. Collins, Ph.D.

for

BLACKHAWK ENGINEERING
Route 1, Box 146-H5
Helper, Utah 84526

March 1995

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Raw Data 6

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Cover, Composition, Frequency . . . . . APPENDIX A
Production . . . . . APPENDIX B

VEGETATION SAMPLING:

RECLAIMED & REFERENCE AREAS OF THE HUNTINGTON NO. 4 MINE

1994

SCOPE

Similar to the data recorded in 1993, the following report has been prepared to assess the current condition of the vegetation of reclaimed areas at the Huntington No. 4 Mine. The reclaimed areas were compared with undisturbed reference areas that were used as standards for revegetation success.

INTRODUCTION

General Site Description

The study area for the Huntington No. 4 Mine was located in Huntington Canyon, Emery County, Utah. The elevation of the area ranged between 7,300 ft and 8,000 ft above sea level. Vegetation types adjacent to the mine area varied from pinyon-juniper

and mountain brushland on the drier sites, to associated conifers and riparian areas in the more moist regions. The reclaimed areas of the mine site were on the relatively drier sites with primarily south and southwestern exposures.

The reclaimed areas consisted principally of access roads, portal areas, pads and regraded slopes. The largest surface areas that were reclaimed were the access roads of the mine site.

Quantitative sampling was conducted in the area by *MT. NEBO SCIENTIFIC* in 1989, 1990, 1993 and 1994. Qualitative information was assessed in 1991. No vegetation sampling was conducted in 1992. With a few exceptions, sample areas and methodologies in years' 1993 and 1994 were virtually identical. This should facilitate comparisons between the two years.

METHODS

The State of Utah, Division of Oil, Gas and Mining (DOGM) provided guidelines for sample methodologies used in this report . DOGM reviewed the 1993 report and made a few additional recommendations for the 1994 sample year.

Quantitative and qualitative data were taken on the vegetation of the reclaimed

and reference areas. Sampling was conducted from August 28 - 31, 1994. As was done in 1993, and to simplify discussions about them, the reclaimed sites were divided into two (2) major areas -- the *Lower Reclaimed Areas* and the *Upper Reclaimed Access Road Areas*. Each of those areas consisted of several disturbance types (i.e. roads, pads, portals, regraded slopes, etc.). Data summaries, however, have been presented separately and combined in the *Lower Reclaimed Areas* due to heterogeneity of this areas. Since all the *Upper Reclaimed Access Road Areas* were so similar in basic physiognomy, the data were combined for the summary tables. Reporting the data by this method was an attempt to provide information on small, localized areas, yet also provide the average success of the entire mine site.

As previously mentioned and with only a few exceptions, sample areas and methodologies in 1994 were virtually identical to the 1993 sampling. This was done as a means to facilitate comparisons between the two years.

Transect and Quadrat Placement

Transect lines for sampling were placed randomly throughout the reclaimed areas resulting in several sample sites in the *Lower Reclaimed Areas* and the *Upper Reclaimed Access Road Areas* (see Sample Map). Random/regular placement of sampling quadrats were designed to provide unbiased accuracy of the data compiled. Once the transect lines were placed, regular points were then marked on them. From these marks, a random number dictated the direction and distance to place the quadrats

at right angles from the transect lines.

All reclaimed areas were seeded with the same seed mix (with the possible exception of the riparian area) on a variety of slopes, exposures, soil conditions and water relationships, etc. Vegetation sampling methodologies between reclaimed areas and the reference areas were consistent.

Placement of the quadrats in the riparian areas were somewhat constrained by the size of the sample areas. The streamside area that was disturbed was only about 35 ft long. The quadrats were placed every other meter along the streamside for the entire length of the reclaimed and reference area. The *Riparian Reference Area* was considered the undisturbed streamside vegetation 100 ft upstream and 100 ft downstream of the reclaimed area.

Cover and Composition

Cover estimates were made using ocular methods with meter square quadrats. Species composition and relative frequencies were also assessed from the quadrats. Additional information recorded on the raw data sheets were: estimated precipitation, slope, exposure, grazing use, animal disturbance and other appropriate notes. Plant nomenclature follows "A Utah Flora", (Welsh et al. 1993).

Woody Species Density

Density of woody plant species of the reclaimed and reference areas were made using belt transects. These 5 ft by 50 ft belts were placed randomly throughout the study areas. Total number of individuals by species were counted in each of the belt transects. The average number was then calculated followed by the number of individuals per acre.

Production

Total annual biomass production was estimated by clipping, drying and weighing current annual growth. Herbaceous and woody species were summarized separately. "Double sampling" using four quadrats (three for the riparian areas) were estimated around the clipped and weighed plots.

Sample Adequacy & Statistical Comparisons

Sampling adequacy for cover and woody species density was achieved using formulas from Snedocor and Cochran (1980), insuring that 80% of the samples were within 10% of the true mean for the shrub communities of the area. The following formula was used:

$$nmin = \left[\frac{1.28\,(s)}{x\ (.1)}\right]^2$$

where,

nmin = minimum adequate sample
s = standard deviation
x = sample mean
.1 = confidence interval

Student's t-tests were also employed to compare the reclaimed disturbance and reference areas of all sites for cover, density, and productivity. All sample means, standard deviations, and sample sizes were included in this report to enable the reviewers to apply further statistical tests if desired.

Photographs

Color photographs of the sample areas were taken at the time of sampling and have been submitted with this report.

Raw Data

The raw data have been summarized on spreadsheets and have also been included in this report's Appendix.

RESULTS

The Lower Reclaimed Areas (Areas A-E, separated)

When the *Lower Reclaimed Areas* were summarized separately, results of each were similar. Area "A" had a mean cover of 39.00% and was dominated by grasses that comprised 55.47% of the living cover (Table 1). Dominant plant species by cover and frequency shown on Table 2 were cicer milkvetch (*Astragalus cicer*), thickspike wheatgrass (*Elymus lanceolatus*) and bluebunch wheatgrass (*Elymus spicatus*). Woody species density was estimated as 3,833 individuals per acre (Table 3). Total annual biomass production was measured to be 397.59 pounds per acre (Table 4).

Area "B" had similar living cover (40.00%) and was again dominated by grasses (Table 5). Similar species dominated this site but it had greater occurrences of rubber rabbitbrush (*Chrysothamnus nauseosus*) and crested wheatgrass (*Agropyron cristatum*). For cover and frequency by species, refer to Table 6. Woody species per acre was recorded as 4,661 individuals per acre (Table 7), whereas, annual biomass production was 333.66 pounds per acre (Table 8).

Area "C" also had very similar results with 39.38% total living cover (Table 9) which was dominated by the same species mentioned above (Table 10). Woody species density was similar to Area "A" and was estimated to be 3,659 individuals per

acre with rubber rabbitbrush easily outnumbering the other woody species (Table 11). Total annual production was somewhat higher than the areas above, estimated to be 428.67 pounds per acre (Table 12).

Area "D" again had very similar living cover results (39.29%), but forbs edged out the grasses to dominate the cover (Table 13). The same plant species, however, were the common (Table 14). Woody species density in this area was the highest, estimated at 5,634 individuals per acre (Table 15). Total annual production was also higher than the previous reported data at 494.43 pounds per acre (Table 16).

Total living cover and production was highest of the five areas in "Area E" of the *Lower Reclaimed Areas.* They were estimated to be 45.63% (Table 17) and 559.89 pounds per acre (Table 20), respectively. Dominate plant species also varied when compared to the other areas. There was less rubber rabbitbrush and more intermediate wheatgrass (*Elymus hispidus*) and mountain bromegrass (*Bromus carinatus*). For a list of the species by cover and frequency, refer to Table 18. Woody species density was consistent with the previous mentioned areas, estimated as 3,543 individuals per acre (Table 19).

<u>The Lower Reclaimed Areas</u> (Areas A-E, combined)

As one would expect due to the similarity of the results reported above for each separate area, results of the Areas A-E combined were also similar. The total mean

cover of these areas combined was 40.58% (Table 21). Grasses dominated the living cover comprising nearly half of the living cover (Table 21). Dominant plant species by cover and frequencies were cicer milkvetch, thickspike wheatgrass, bluebunch wheatgrass, and rubber rabbitbrush (Table 22).

Woody species density of the combined data of the *Lower Reclaimed Areas* was 4,531 individuals per acre (Table 23). Total biomass production was measured to be 449.70 pounds per acre, most of which were herbaceous species (Table 24).

Upper Reclaimed Access Road Areas

Total living cover of the *Upper Reclaimed Access Road Areas* was estimated to be 41.33%. Grasses again dominated the living cover comprising 47.67% of the living cover, followed by forbs at 33.58% (Table 25). Dominate plant species of the area was similar to the aforementioned summaries. These species were cicer milkvetch, rubber rabbitbrush and thickspike wheatgrass (Table 26). Indian ricegrass (*Stipa hymenoides*), however, was a important component of the composition of this area comprising a total cover of 3.50% and was observed in 37.67% of the quadrats.

Total woody species density was 2,302 individuals per acre with rubber rabbitbrush the most common shrub by far (Table 27). Total annual biomass production was 492.06 pounds per acre (Table 28).

Reference Area

The sample results for living understory cover of the *Reference Area* was 29.40% (Table 29). Because this area was a mature pinyon-juniper community, overstory cover was also an important component of the total cover. Overstory cover was estimated at 8.20%. If one combines the overstory and understory cover to represent "total living cover" the results has a mean of 37.60%, with a standard deviation of 20.70. As was noted in the reclaimed areas, grasses were the dominant lifeform. Forbs, however, were much less common (Table 29). The most common plant species by cover and frequency were Salina wildrye (*Elymus salinus*), pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*). For cover and frequency results by species refer to Table 30.

Woody species density was much less than the reclaimed area. Total number of individuals per acre was 279 (Table 31) with the most common species being mountain mahogany (*Cercocarpus ledifolius*) and bitterbrush (*Purshia tridentata*). Total annual biomass production was estimated to be 253.24 pounds per acre, about half of what the reclaimed areas were (Table 32).

Reclaimed Riparian Area

Total living cover of the *Reclaimed Riparian* area was 64.00%. Forbs and shrubs were nearly equally represented as a proportion of the cover, representing

36.88% and 36.79%, respectively. Grasses followed these proportions at 26.33% (Table 33). Dominant plant species by cover and frequency were willow (*Salix lutea*), cicer milkvetch, and orchardgrass (*Dactylis glomeratus*). For cover by species refer to Table 34. Total woody species density was 3,340 individuals per acre, with willow comprising the majority of it (Table 35). Total annual biomass production was calculated to be 480.74 pounds per acre with herbaceous and woody species about equal (Table 36).

Riparian Reference Area

Total living cover of the *Riparian Reference Area* was 57.00%, with grasses comprising the majority of the cover (Table 37). The most common species in this area were very similar to those of the reclaimed riparian area. These species, shown on Table 38 were orchardgrass, willow, and bluejoint reedgrass (*Calamagrostis canadensis*). Woody species density was nearly identical to the reclaimed area estimated at 3,223 individuals per acre (Table 39). Results from production measurements indicated this area to support 359.07 pounds per acre (Table 40), which was somewhat less than the reclaimed area.

DISCUSSION

The total living cover of each of the sample areas were quite similar. Fig. 1 graphically compares each sample area with the *Reference Area*, including the mean of Areas A-E combined. Student's t-tests were also employed to compare the *Lower Reclaimed Areas* (combined) with the *Reference Area*. These differences were not significant statistically (Table 41). The *Upper Reclaimed Access Road Areas* were also statistically compared with the *Reference Area*. Again, the comparison suggested no significant difference between the two areas (Table 41).

Fig. 2 graphically compares the lifeform or species composition of the reclaimed road, individual areas, and the combined data. As can be noted by the graph, forbs were much more important in the reclaimed areas when compared to the *Reference area*.

Woody species densities were much higher in the reclaimed areas when they were compared to the *Reference Area* (Fig. 3). The species represented in the *Reference Area* were different than the reclaimed areas. These species are shown on their respective summary tables. Differences in total annual biomass production have also be illustrated graphically (Fig. 4). Each reclaimed area was more productive when compared to the *Reference Area*. The differences were statistically significant (Table 41).

Similar graphs and statistical comparisons were also made comparing the *Reclaimed Riparian Area* with the *Riparian Reference Area*. Total living covers were shown on Fig. 5. Differences between the two were not significant (Table 41). Lifeform species composition comparisons have been illustrated on Fig. 6. Woody species density and annual production values have been graphically compared on Fig.'s 7 and 8, respectively. Differences between them were again not significant statistically (Table 41).

TABLE 1: Total cover and composition summary for the reclaimed areas of the Huntington No. 4 Mine (Area "A", see Sample Map).

TOTAL COVER	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE
Living Cover	39.00	6.63	10
Litter	17.50	6.42	10
Bareground	23.00	10.77	10
Rock	20.50	7.89	10
COMPOSITION			
Shrubs	10.08	13.40	10
Forbs	34.45	27.04	10
Grasses	55.47	25.71	10

TABLE 2: Species cover and frequency summary for the reclaimed areas of the Huntington No. 4 Mine (Area "A", see Sample Map).

SPECIES	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE	RELATIVE FREQUENCY
TREES & SHRUBS				
Chrysothamnus nauseosus	4.00	5.39	10	40.00
Gutierrezia sarothrae	0.20	0.60	10	10.00
FORBS				
Astragalus cicer	12.50	10.55	10	80.00
Machaeranthera canescens	0.50	1.50	10	10.00
Penstemon palmeri	1.50	2.29	10	30.00
GRASSES				
Agropyron cristatum	2.30	30	10	40.00
Bromus carinatus	4.50	30	10	60.00
Dacytylis glomeratus	1.50	30	10	30.00
Elymus spicatus	4.50	30	10	60.00
Elymus lanceolatus	6.50	30	10	80.00
Stipa hymenoides	1.00	30	10	10.00

TABLE 3: Woody species densities of the reclaimed areas of the Huntington No. 4 Mine (Area "A", see Sample Map).

	NUMBER/ACRE
Cercocarpus ledifolius	348.48
Chrysothamnus nauseosus	3354.12
Eriogonum corymbosum	43.56
Purshia tridentata	87.12
TOTAL	3833.28

TABLE 4: Dry weight annual production for the reclaimed areas of the Huntington No. 4 Mine (Area "A", see Sample Map).

LIFEFORM	LBS/ ACRE	STANDARD DEVIATION	SAMPLE* SIZE
Herbaceous	336.48	114.30	10.(50)
Woody Spp.	61.11	75.89	10.(50)
TOTAL PRODUCTION	397.59	84.00	10.(50)

* Sample size shows the number of sample locations. The number of estimates recorded including "double sampling" is shown in parentheses.

TABLE 5: Total cover and composition summary for the reclaimed areas of the Huntington No. 4 Mine (Area "B", see Sample Map).

TOTAL COVER	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE
Living Cover	40.00	8.06	10
Litter	9.50	1.50	10
Bareground	31.00	7.68	10
Rock	19.50	4.72	10
COMPOSITION			
Shrubs	24.61	25.14	10
Forbs	33.85	21.71	10
Grasses	41.54	18.63	10

TABLE 6: Species cover and frequency summary for the reclaimed areas of the Huntington No. 4 Mine (Area "B", see Sample Map).

SPECIES	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE	RELATIVE FREQUENCY
TREES & SHRUBS				
Chrysothamnus nauseosus	6.50	7.76	10	60.00
Cercocarpus ledifolius	0.50	1.50	10	10.00
Eriogonum corymbosum	1.70	3.47	10	20.00
FORBS				
Astragalus cicer	12.50	11.46	10	90.00
Penstemon palmeri	2.00	3.32	10	30.00
GRASSES				
Agropyron cristatum	5.70	5.69	10	60.00
Elymus spicatus	1.60	3.20	10	20.00
Elymus lanceolatus	8.50	6.34	10	70.00
Stipa hymenoides	1.00	3.00	10	10.00

TABLE 7: Woody species densities of the reclaimed areas of the Huntington No. 4 Mine (Area "B", see Sample Map).

	NUMBER/ACRE
Chrysothamnus nauseosus	3571.92
Eriogonum corymbosum	958.32
Gutierrezia sarothrae	43.56
Pinus ponderosa	87.12
TOTAL	4660.92

TABLE 8: Dry weight annual production for the reclaimed areas of the Huntington No. 4 Mine (Area "B", see Sample Map).

LIFEFORM	LBS/ ACRE	STANDARD DEVIATION	SAMPLE* SIZE
Herbaceous	226.28	86.82	10.(50)
Woody Spp.	107.38	114.04	10.(50)
TOTAL PRODUCTION	333.66	94.06	10.(50)

* Sample size shows the number of sample locations. The number of estimates recorded including "double sampling" is shown in parentheses.

TABLE 9: Total cover and composition summary for the reclaimed areas of the Huntington No. 4 Mine (Area "C", see Sample Map).

TOTAL COVER	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE
Living Cover	39.38	5.27	8
Litter	12.50	7.07	8
Bareground	18.13	7.47	8
Rock	30.00	10.90	8
COMPOSITION			
Shrubs	12.72	13.99	8
Forbs	37.99	26.19	8
Grasses	49.29	23.67	8

TABLE 10: Species cover and frequency summary for the reclaimed areas of the Huntington No. 4 Mine (Area "C", see Sample Map).

SPECIES	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE	RELATIVE FREQUENCY
TREES & SHRUBS				
Chrysothamnus nauseosus	3.75	5.45	8	37.50
Eriogonum corymbosum	0.63	1.65	8	12.50
Rosa woodsii	0.63	1.65	8	12.50
FORBS				
Astragalus cicer	13.75	11.66	8	75.00
Melilotus officinalis	0.63	1.65	8	12.50
Penstemon palmeri	1.25	2.17	8	25.00
GRASSES				
Agropyron cristatum	4.38	3.00	8	75.00
Bromus carinatus	1.25	2.17	8	25.00
Elymus spicatus	4.38	6.34	8	50.00
Elymus lanceolatus	5.38	6.96	8	50.00
Stipa hymenoides	3.38	4.72	8	37.50

TABLE 11: Woody species densities of the reclaimed areas of the Huntington No. 4 Mine (Area "C", see Sample Map).

	NUMBER/ACRE
Chrysothamnus nauseosus	2613.60
Eriogonum corymbosum	871.20
Gutierrezia sarothrae	174.24
TOTAL	3659.04

TABLE 12: Dry weight annual production for the reclaimed areas of the Huntington No. 4 Mine (Area "C", see Sample Map).

LIFEFORM	LBS/ ACRE	STANDARD DEVIATION	SAMPLE* SIZE
Herbaceous	364.59	86.72	8.(40)
Woody Spp.	64.08	76.98	8.(40)
TOTAL PRODUCTION	428.67	114.67	8.(40)

* Sample size shows the number of sample locations. The number of estimates recorded including "double sampling" is shown in parentheses.

TABLE 13: Total cover and composition summary for the reclaimed areas of the Huntington No. 4 Mine (Area "D", see Sample Map).

TOTAL COVER	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE
Living Cover	39.29	5.62	7
Litter	9.29	4.95	7
Bareground	15.00	14.88	7
Rock	36.43	13.29	7
COMPOSITION			
Shrubs	21.80	16.96	7
Forbs	39.49	21.42	7
Grasses	38.71	22.26	7

TABLE 14: Species cover and frequency summary for the reclaimed areas of the Huntington No. 4 Mine (Area "D", see Sample Map).

SPECIES	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE	RELATIVE FREQUENCY
TREES & SHRUBS				
Chrysothamnus nauseosus	7.14	6.47	7	71.43
Rosa woodsii	1.43	3.50	7	14.29
FORBS				
Astragalus cicer	10.00	4.63	7	100.00
Machaeranthera canescens	2.14	2.47	7	42.86
Melilotus officinalis	0.71	1.75	7	14.29
Penstemon palmeri	2.14	5.25	7	14.29
GRASSES				
Agropyron cristatum	4.29	4.16	7	57.14
Elymus spicatus	7.14	7.95	7	71.43
Elymus lanceolatus	2.86	3.64	7	42.86
Stipa hymenoides	1.43	3.50	7	14.29

TABLE 15: Woody species densities of the reclaimed areas of the Huntington No. 4 Mine (Area "D", see Sample Map).

	NUMBER/ACRE
Brickelia microphylla	
Cercocarpus ledifolius	348.48
Eriogonum corymbosum	58.08
Chrysothamnus nauseosus	4936.80
Purshia tridentata	58.08
Rosa woodsii	232.32
TOTAL	5633.76

TABLE 16: Dry weight annual production for the reclaimed areas of the Huntington No. 4 Mine (Area "D", see Sample Map).

LIFEFORM	LBS/ ACRE	STANDARD DEVIATION	SAMPLE* SIZE
Herbaceous	369.17	204.27	7.(35)
Woody Spp.	125.27	118.01	7.(35)
TOTAL PRODUCTION	494.43	271.07	7.(35)

* Sample size shows the number of sample locations. The number of estimates recorded including "double sampling" is shown in parentheses.

TABLE 17: Total cover and composition summary for the reclaimed areas of the Huntington No. 4 Mine (Area "E", see Sample Map).

TOTAL COVER	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE
Living Cover	45.63	5.27	8
Litter	18.13	9.98	8
Bareground	21.88	16.76	8
Rock	14.38	11.02	8
COMPOSITION			
Shrubs	5.59	7.91	8
Forbs	34.68	19.14	8
Grasses	59.73	17.91	8

TABLE 18: Species cover and frequency summary for the reclaimed areas of the Huntington No. 4 Mine (Area "E", see Sample Map).

SPECIES	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE	RELATIVE FREQUENCY
TREES & SHRUBS				
Chrysothamnus nauseosus	2.50	3.54	8	37.50
FORBS				
Astragalus cicer	10.00	10.90	8	62.50
Circium sp.	1.25	2.17	8	25.00
Cynoglossum officinale	1.88	2.42	8	37.50
Machaeranthera canescens	1.25	2.17	8	25.00
Melilotus officinalis	0.63	1.65	8	12.50
Penstemon palmeri	0.63	1.65	8	12.50
GRASSES				
Agropyron cristatum	2.50	3.54	8	37.50
Bromus carinatus	4.38	3.90	8	62.50
Dacytylis glomeratus	1.25	3.31	8	12.50
Elymus lanceolatus	3.13	4.96	8	37.50
Elymus hispidus	5.00	13.23	8	12.50
Poa pratensis	1.88	3.48	8	25.00

TABLE 19: Woody species densities of the reclaimed areas of the Huntington No. 4 Mine (Area "E", see Sample Map).

	NUMBER/ACRE
Cercocarpus ledifolius	116.16
Chrysothamnus nauseosus	2729.76
Pinus ponderosa	58.08
Rosa woodsii	638.88
TOTAL	3542.88

TABLE 20: Dry weight annual production for the reclaimed areas of the Huntington No. 4 Mine (Area "E", see Sample Map).

LIFEFORM	LBS/ ACRE	STANDARD DEVIATION	SAMPLE* SIZE
Herbaceous	493.15	196.87	8.(40)
Woody Spp.	66.75	127.03	8.(40)
TOTAL PRODUCTION	559.89	175.78	8.(40)

* Sample size shows the number of sample locations. The number of estimates recorded including "double sampling" is shown in parentheses.

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TABLE 21: Total cover and composition summary for the combined reclaimed areas of the Huntington No. 4 Mine (Areas A-E, see Sample Map).

TOTAL COVER	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE
Living Cover	40.58	14.46	43
Litter	13.49	7.51	43
Bareground	22.44	13.00	43
Rock	23.49	12.23	43
COMPOSITION			
Shrubs	15.02	18.32	43
Forbs	35.83	23.55	43
Grasses	49.14	23.25	43

TABLE 22: Species cover and frequency summary for the combined reclaimed areas of the Huntington No. 4 Mine (Areas A-E, see Sample Map).

SPECIES	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE	RELATIVE FREQUENCY
TREES & SHRUBS				
Chrysothamnus nauseosus	4.77	6.19	43	48.84
Cercocarpus ledifolius	0.12	0.75	43	2.33
Eriogonum corymbosum	0.51	1.95	43	6.98
Gutierrezia sarothrae	0.05	0.30	43	2.33
Rosa woodsii	0.35	1.67	43	4.65
FORBS				
Astragalus cicer	11.86	10.46	43	81.40
Circium sp.	0.23	1.05	43	4.65
Cynoglossum officinale	0.35	1.27	43	6.98
Machaeranthera canescens	0.70	1.73	43	13.95
Melilotus officinalis	0.35	1.27	43	6.98
Penstemon palmeri	1.51	3.15	43	23.26
GRASSES				
Agropyron cristatum	3.84	4.31	43	53.49
Bromus carinatus	2.09	3.45	43	30.23
Dacytylis glomeratus	0.58	1.93	43	9.30
Elymus spicatus	*5.14*	*7.18*	*43*	*48.84*
Elymus lanceolatus	*5.53*	*6.06*	*43*	*58.14*
Elymus hispidus	*0.93*	*6.03*	*43*	*2.33*
Poa pratensis	0.35	1.67	43	4.65
Stipa hymenoides	1.33	3.39	43	13.95

TABLE 23: Woody species densities of the combined reclaimed areas of the Huntington No. 4 Mine (Areas A-E, see Sample Map).

	NUMBER/ACRE
Brickelia microphylla	
Cercocarpus ledifolius	185.92
Chrysothamnus nauseosus	3555.72
Gutierrezia sarothrae	23.24
Eriogonum corymbosum	336.98
Pinus ponderosa	34.84
Purshia tridentata	34.84
Rosa woodsii	174.30
TOTAL	4530.88

TABLE 24: Dry weight annual production for the combined reclaimed areas of the Huntington No. 4 Mine (Areas A-E, see Sample Map).

LIFEFORM	LBS/ ACRE	STANDARD DEVIATION	SAMPLE* SIZE
Herbaceous	362.46	162.73	43.(215)
Woody Spp.	87.25	109.86	43.(215)
TOTAL PRODUCTION	449.70	170.54	43.(215)

* Sample size shows the number of sample locations. The number of estimates recorded including "double sampling" is shown in parentheses.

TABLE 25: Total cover and composition summary for the reclaimed areas of the Huntington No. 4 Mine (Revegetated Road Areas, see Sample Map).

TOTAL COVER	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE
Living Cover	41.33	8.46	30
Litter	16.83	8.31	30
Bareground	18.83	11.45	30
Rock	23.00	11.37	30
COMPOSITION			
Shrubs	18.74	18.82	30
Forbs	33.58	26.39	30
Grasses	47.67	25.57	30

TABLE 26: Species cover and frequency summary for the reclaimed areas of the Huntington No. 4 Mine (Revegetated Road Areas, see Sample Map).

SPECIES	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE	RELATIVE FREQUENCY
TREES & SHRUBS				
Chrysothamnus nauseosus	7.17	8.03	30	56.67
Cercocarpus ledifolius	0.67	1.70	30	13.33
FORBS				
Astragalus cicer	10.70	11.74	30	66.67
Cynoglossum officinale	0.17	0.90	30	3.33
Machaeranthera canescens	0.33	1.25	30	6.67
Penstemon pachyphullus	3.37	3.59	30	53.33
GRASSES				
Agropyron cristatum	2.33	4.61	30	26.67
Bromus inermis	0.83	2.61	30	10.00
Bromus carinatus	1.10	3.01	30	13.33
Dacytylis glomeratus	0.50	1.98	30	6.67
Elymus lanceolatus	5.83	9.41	30	36.67
Elymus spicatus	4.17	6.84	30	33.33
Elymus salinus	*0.67*	*3.59*	*30*	*3.33*
Stipa hymenoides	3.50	5.94	30	36.67

TABLE 27: Woody species densities of the reclaimed areas of the Huntington No. 4 Mine (Revegetated Road Areas, see Sample Map).

	NUMBER/ACRE
Brickelia microphylla	
Ceratoides ledifolius	159.50
Chrysothamnus nauseosus	2093.80
Gutierrezia sarothrae	14.50
Eriogonum corymbosum	5.80
Pinus ponderosa	2.90
Purshia tridentata	23.20
Symphoricarpos oreophilus	2.90
TOTAL	2302.60

TABLE 28: Dry weight annual production of the reclaimed areas of the Huntington No. 4 Mine (Revegetated Road Areas, see Sample Map).

LIFEFORM	LBS/ ACRE	STANDARD DEVIATION	SAMPLE* SIZE
Herbaceous	356.67	155.74	30.(150)
Woody Spp.	135.40	166.39	30.(150)
TOTAL PRODUCTION	492.06	233.03	30.(150)

* Sample size shows the number of sample locations. The number of estimates recorded including "double sampling" is shown in parentheses.

TABLE 29: Total cover and composition summary for the Reference Area of the Huntington No. 4 Mine (see Sample Map).

TOTAL COVER	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE
Overstory	8.20	14.20	50
Understory	29.40	10.80	50
Combined*	37.60	20.72	50
Litter	21.70	13.21	50
Bareground	14.90	11.64	50
Rock	34.00	18.97	50
COMPOSITION			
Shrubs	22.50	32.30	50
Forbs	0.50	3.50	50
Grasses	77.00	32.53	50

* Overstory and understory cover combined (shows total living cover).

TABLE 30: Species cover and frequency summary for the Reference Area of the Huntington No. 4 Mine (see Sample Map).

SPECIES	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE	RELATIVE FREQUENCY
TREES & SHRUBS				
Cercocarpus ledifolius	0.50	2.29	50	6.00
Juniperus osteosperma	1.80	7.40	50	12.00
Pinus edulis	5.30	10.97	50	26.00
FORBS				
Cryptantha sp.	0.10	.70	50	2.00
GRASSES				
Elymus salinus	20.00	12.45	50	88.00
Stipa hymenoides	1.70	5.35	50	14.00

TABLE 31: Woody species densities of the Reference Area of the Huntington No. 4 Mine (see Sample Map).

	NUMBER/ACRE
Cercocarpus ledifolius	116.20
Gutierrezia sarothrae	17.43
Juniperus osteosperma	34.86
Pinus edulis	110.39
Purshia tridentata	
TOTAL	278.88

TABLE 32: Dry weight annual production of the Reference Area of the Huntington No. 4 Mine (see Sample Map).

LIFEFORM	LBS/ ACRE	STANDARD DEVIATION	SAMPLE* SIZE
Herbaceous	163.37	106.25	50.(250)
Woody Spp.	89.86	143.24	50.(250)
TOTAL PRODUCTION	253.24	126.44	50.(250)

* Sample size shows the number of sample locations. The number of estimates recorded including "double sampling" is shown in parentheses.

TABLE 33: Total cover and composition summary for the Riparian Area of the Huntington No. 4 Mine (see Sample Map).

TOTAL COVER	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE
Living Cover	64.00	7.35	5
Litter	18.00	6.78	5
Bareground	5.00	0.00	5
Rock	13.00	8.12	5
COMPOSITION			
Shrubs	36.79	24.68	5
Forbs	36.88	17.88	5
Grasses	26.33	20.33	5

TABLE 34: Species cover and frequency summary for the Riparian Area of the Huntington No. 4 Mine (see Sample Map).

SPECIES	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE	RELATIVE FREQUENCY
TREES & SHRUBS				
Salix lutea	23.00	16.00	5	80.00
FORBS				
Agoseris aurantiaca	2.00	2.45	5	40.00
Astragalus cicer	10.00	10.49	5	60.00
Equisetum arvensis	7.00	9.27	5	60.00
Geranium richardsonii	1.00	2.00	5	20.00
Medicago sativa	2.00	2.45	5	40.00
Mentha arvensis	1.00	2.00	5	20.00
Trifolium pratensis	1.00	2.00	5	20.00
GRASSES				
Dactylis glomeratus	17.00	14.35	5	100.00

TABLE 35: Woody species densities of the Riparian Area of the Huntington No. 4 Mine (see Sample Map).

	NUMBER/ACRE
Cercocarpus ledifolius	
Chrysothamnus nauseosus	290.40
Cornus sericea	145.20
Rosa woodsii	145.20
Salix lutea	2758.80
TOTAL	3339.60

TABLE 36: Dry weight annual production of the Riparian Area of the Huntington No. 4 Mine (see Sample Map).

LIFEFORM	LBS/ ACRE	STANDARD DEVIATION	SAMPLE* SIZE
Herbaceous	201.61	121.40	5.(25)
Woody Spp.	279.13	290.35	5.(25)
TOTAL PRODUCTION	480.74	198.61	5.(25)

* Sample size shows the number of sample locations. The number of estimates recorded including "double sampling" is shown in parentheses.

TABLE 37: Total cover and composition summary for the Riparian Reference Area of the Huntington No. 4 Mine (see Sample Map).

TOTAL COVER	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE
Living Cover	57.00	9.00	10
Litter	18.00	6.78	10
Bareground	15.80	11.77	10
Rock	9.20	10.03	10
COMPOSITION			
Shrubs	30.70	19.54	10
Forbs	12.48	21.33	10
Grasses	56.81	27.96	10

TABLE 38: Species cover and frequency summary for the Riparian Reference Area of the Huntington No. 4 Mine (see Sample Map).

SPECIES	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE	RELATIVE FREQUENCY
TREES & SHRUBS				
Cornus sericea	4.00	8.31	10	20.00
Rosa woodsii	1.50	4.50	10	10.00
Salix lutea	12.00	14.35	10	50.00
FORBS				
Epilobium sp.	1.50	3.20	10	20.00
Equisetum arvense	4.00	8.00	10	20.00
Galium bifolium	2.00	4.00	10	20.00
GRASSES				
Agrostis stolonifera	2.50	7.50	10	10.00
Bromus inermis	2.00	6.00	10	10.00
Calamagrostis canadensis	6.65	19.50	10	10.00
Dactylis glomeratus	16.00	13.19	10	70.00
Phleum alpinum	2.50	7.50	10	10.00
Poa pratensis	2.50	7.50	10	10.00

TABLE 39: Woody species densities of the Riparian Reference Area of the Huntington No. 4 Mine (see Sample Map).

	NUMBER/ACRE
Abies concolor	43.56
Acer negundo	43.56
Cornus stolonifera	827.64
Populus tremuloides	261.36
Populus angustifolia	43.56
Rosa woodsii	871.20
Salix lutea	1132.56
TOTAL	3223.44

TABLE 40: Dry weight annual production of the Riparian Reference Area of the Huntington No. 4 Mine (see Sample Map).

LIFEFORM	LBS/ ACRE	STANDARD DEVIATION	SAMPLE* SIZE
Herbaceous	186.85	129.08	10.(50)
Woody Spp.	156.56	143.39	10.(50)
TOTAL PRODUCTION	359.07	159.47	10.(50)

* Sample size shows the number of sample locations. The number of estimates recorded including "double sampling" is shown in parentheses.

TABLE 41: Statistical summary sheet for the Reclaimed Areas and Reference Areas at the Huntington No. 4 Mine.

LOWER RECLAIMED AREAS (A-E Combined)			
Living Cover*	x=40.58	s=14.46	n=43
Density	x=4530.88	s= --	n=30
Production	x=449.70	s=170.54	n=43
REFERENCE AREA			
Living Cover*	x=37.60	s=20.72	n=50
Density	x=278.88	s= --	n=30
Production	x=253.24	s=126.44	n=50
STATISTICAL ANALYSES			
Living Cover	t=0.792	df=91	SL=NS
Density	t=**	df= --	SL= --
Production	t=6.364	df=91	SL=p<.001

UPPER RECLAIMED ACCESS ROAD AREAS			
Living Cover	x=41.33	s=8.46	n=30
Density	x=2302.60	s= --	n=60
Production	x=492.06	s=233.03	n=30
REFERENCE AREA			
Living Cover*	x=37.60	s=20.72	n=50
Density	x=278.88	s= --	n=30
Production	x=253.24	s=126.44	n=50
STATISTICAL ANALYSES			
Living Cover	t=0.938	df=78	SL=NS
Density	t=**	df= --	SL= --
Production	t=5.947	df=78	SL=p<.001

x = sample mean, s = sample standard deviation,
n = sample size, NS = nonsignificant,
* represents understory and overstory cover combined.
** not calculated (differences obvious)

TABLE 41: (Continued)

RECLAIMED RIPARIAN AREA			
Living Cover	x=64.00	s=7.35	n=5
Density	x=3339.60	s= --	n=2
Production	x=480.74	s=198.61	n=5
RIPARIAN REFERENCE AREA			
Living Cover*	x=57.00	s=9.00	n=10
Density	x=3223.44	s= --	n=4
Production	x=359.07	s=159.47	n=10
STATISTICAL ANALYSES			
Living Cover	t=1.499	df=13	SL=NS
Density	t=**	df= --	SL= NS
Production	t=1.288	df=13	SL=NS

x = sample mean, s = sample standard deviation,
n = sample size, NS = nonsignificant,
* represents understory and overstory cover combined.
** not calculated (similarities obvious)

COLOR PHOTOGRAPHS

Area "A"

Area "B"

Area "C"

Area "D"

Area "E"

Reclaimed Road (1 of 2)

Reclaimed Road (2 of 2)

Reference Area (1 of 2)

Reference Area (2 of 2)

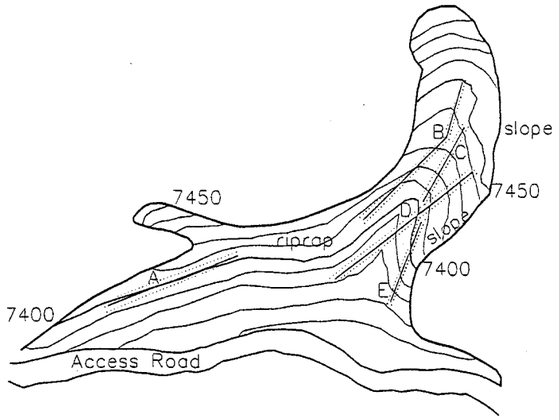
Reclaimed Riparian Area

Riparian Reference Area (1 of 2)

Riparian Reference Area (2 of 2)

SAMPLE MAP

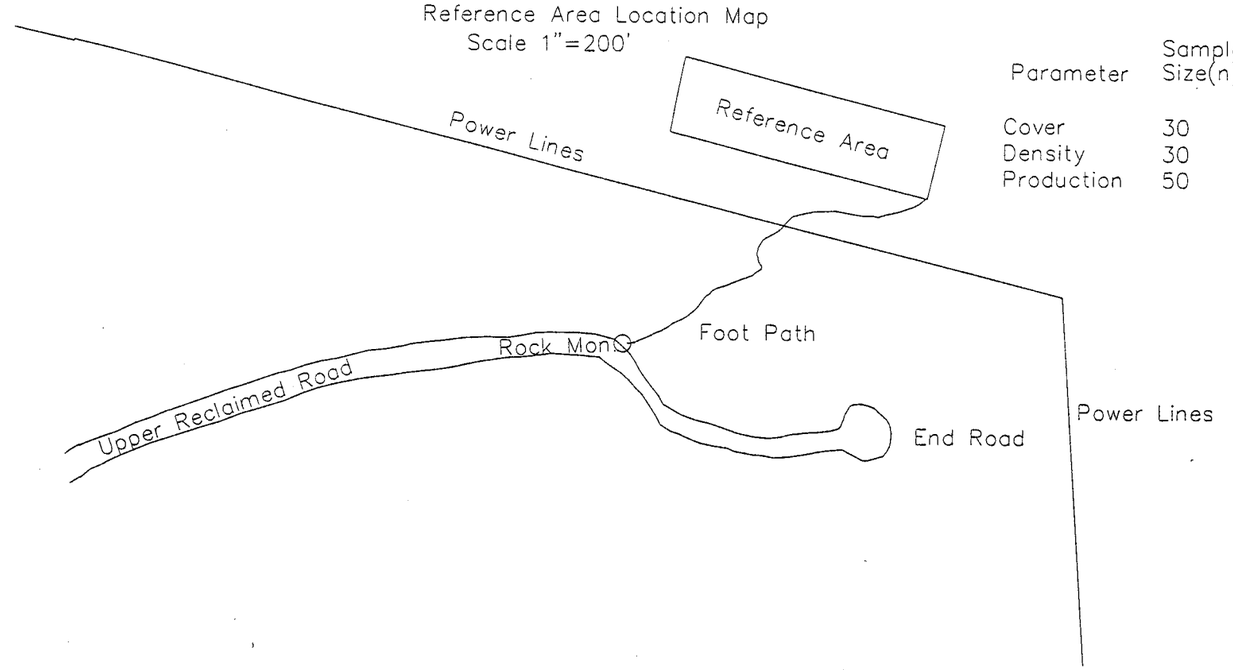
Lower Reclaimed Areas



Scale 1"=200'

Sample Area	Parameter	Sample Size(n)
A	Cover	10
	Density	8
	Production	10
B	Cover	10
	Density	8
	Production	10
C	Cover	8
	Density	8
	Production	7
D	Cover	7
	Density	6
	Production	7
E	Cover	8
	Density	6
	Production	8
Comb.	Cover	43
	Density	30
	Production	43

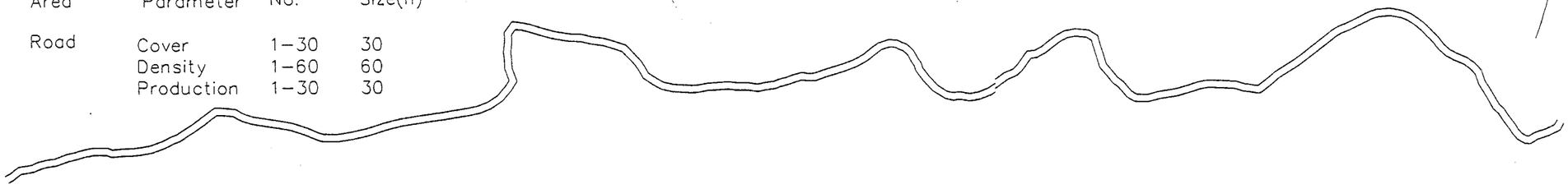
Reference Area Location Map
Scale 1"=200'



Parameter	Sample Size(n)
Cover	30
Density	30
Production	50

Upper Reclaimed Areas
Scale 1"=500'

Sample Area	Parameter	Sample No.	Sample Size(n)
Road	Cover	1-30	30
	Density	1-60	60
	Production	1-30	30



HUNTINGTON NO.4 MINE
SAMPLE LOCATION MAP
1994

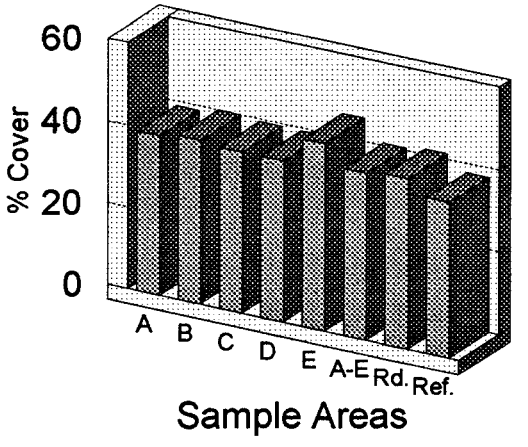
MT. NEBO SCIENTIFIC
RESEARCH AND CONSULTING

DRAWN	J. MAGENO	HUNT4.DWG
CHECKED	P. COLLINS	
DATE	3-21-95	
SCALE	varies	

FIGURES

Fig. 1: Total Living Cover

Reclaimed vs. Reference (1994)



A-E = Areas Combined
Rd. = Reclaimed Read
Ref = Reference Area

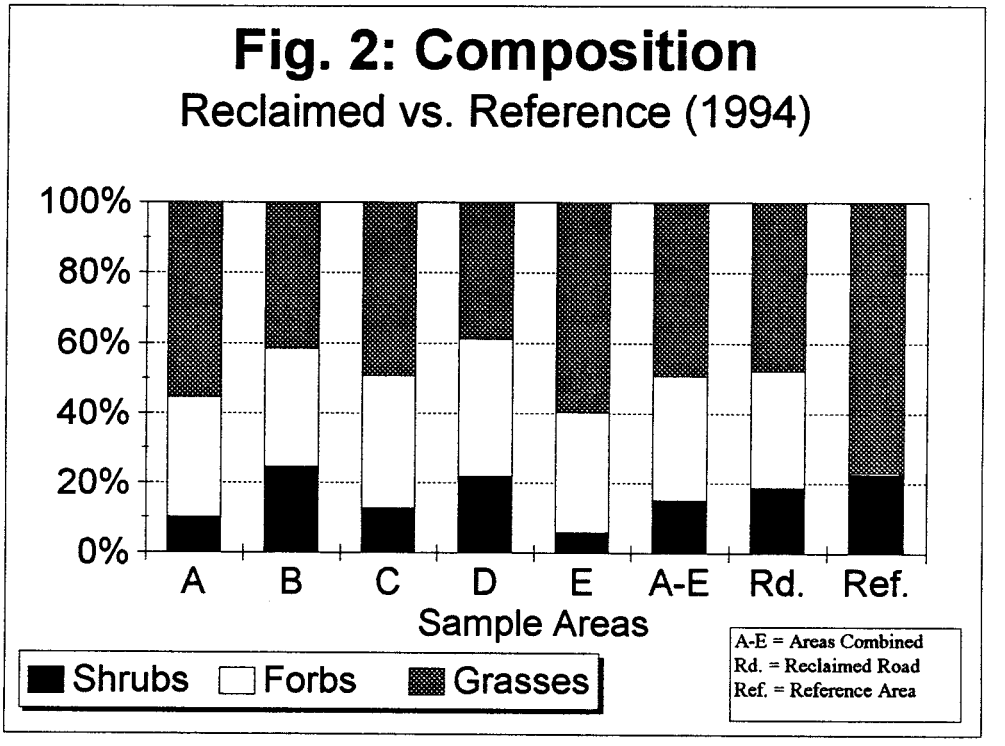


Fig. 2: Composition
Reclaimed vs. Reference (1994)
100%
80%
60%
40%
20%
0%
A
B
C
D
E
A-E
Rd.
Ref.
Sample Areas
Shrubs
Forbs
Grasses
A-E = Areas Combined
Rd. = Reclaimed Road
Ref. = Reference Area

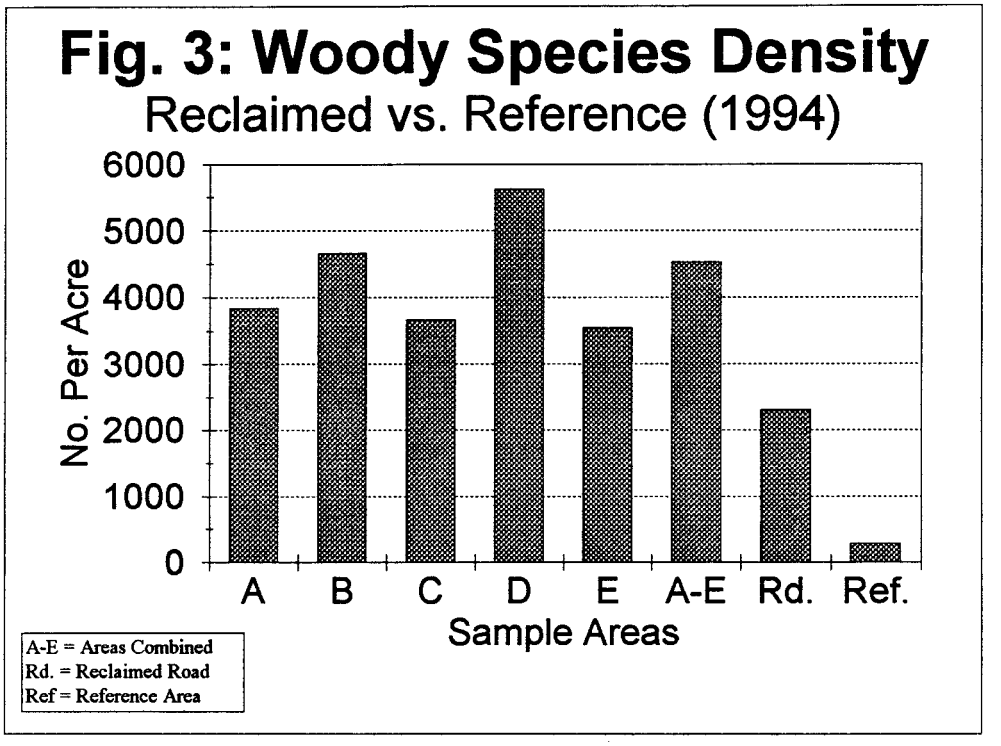


Fig. 3: Woody Species Density
Reclaimed vs. Reference (1994)
6000
5000
4000
3000
2000
1000
0
No. Per Acre
A
B
C
D
E
A-E
Rd.
Ref.
Sample Areas
A-E = Areas Combined
Rd. = Reclaimed Road
Ref = Reference Area

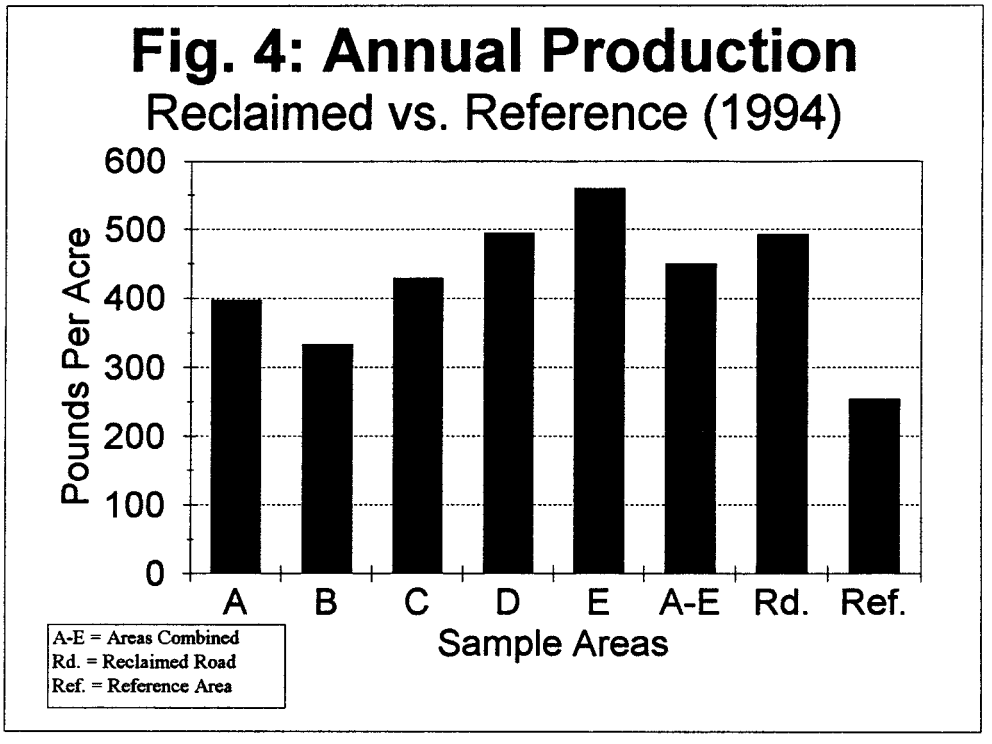
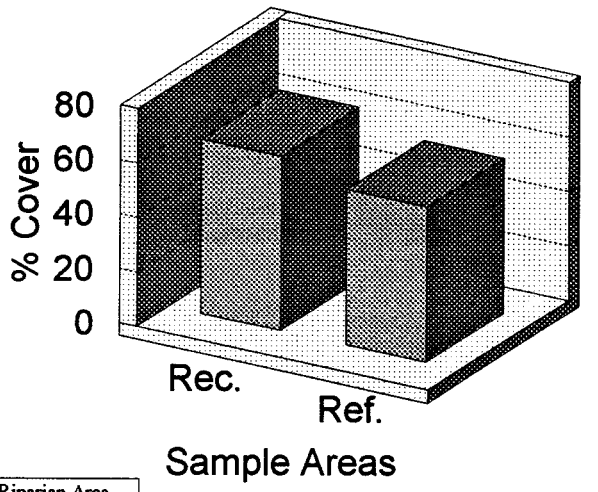


Fig. 4: Annual Production
Reclaimed vs. Reference (1994)
Pounds Per Acre
600
500
400
300
200
100
0
A
B
C
D
E
A-E
Rd.
Ref.
Sample Areas
A-E = Areas Combined
Rd. = Reclaimed Road
Ref. = Reference Area

Fig. 5: Total Living Cover

Reclaimed Riparian vs. Reference -1994



Rec. = Reclaimed Riparian Area
Ref. = Riparian Reference Area

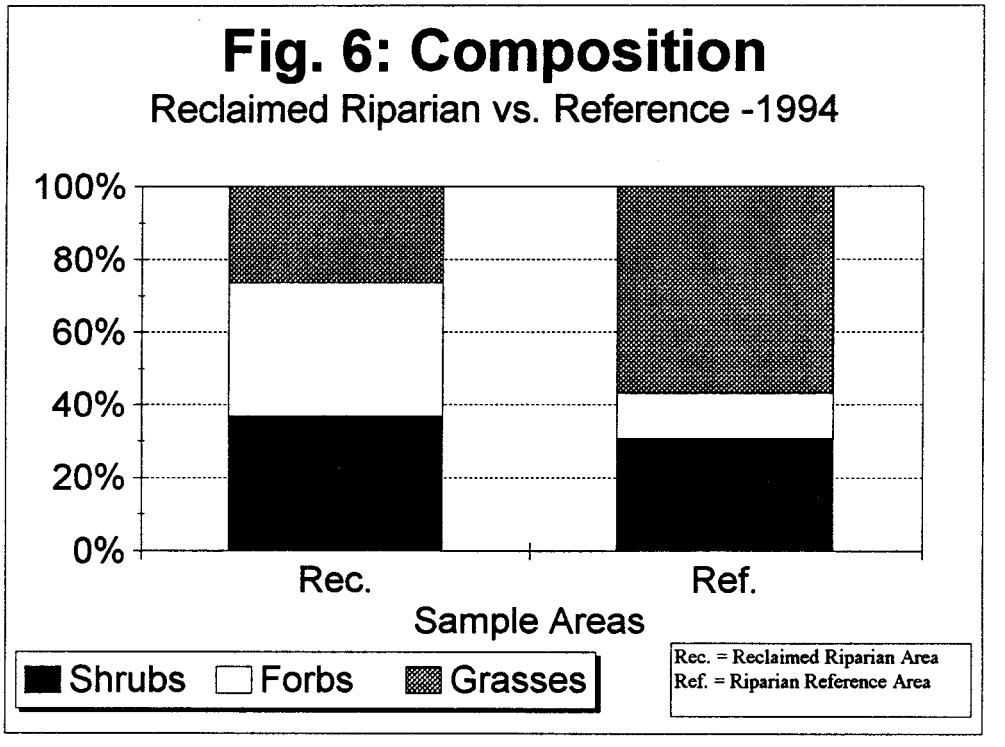


Fig. 6: Composition
Reclaimed Riparian vs. Reference -1994
100%
80%
60%
40%
20%
0%
Rec.
Ref.
Sample Areas
Shrubs
Forbs
Grasses
Rec. = Reclaimed Riparian Area
Ref. = Riparian Reference Area

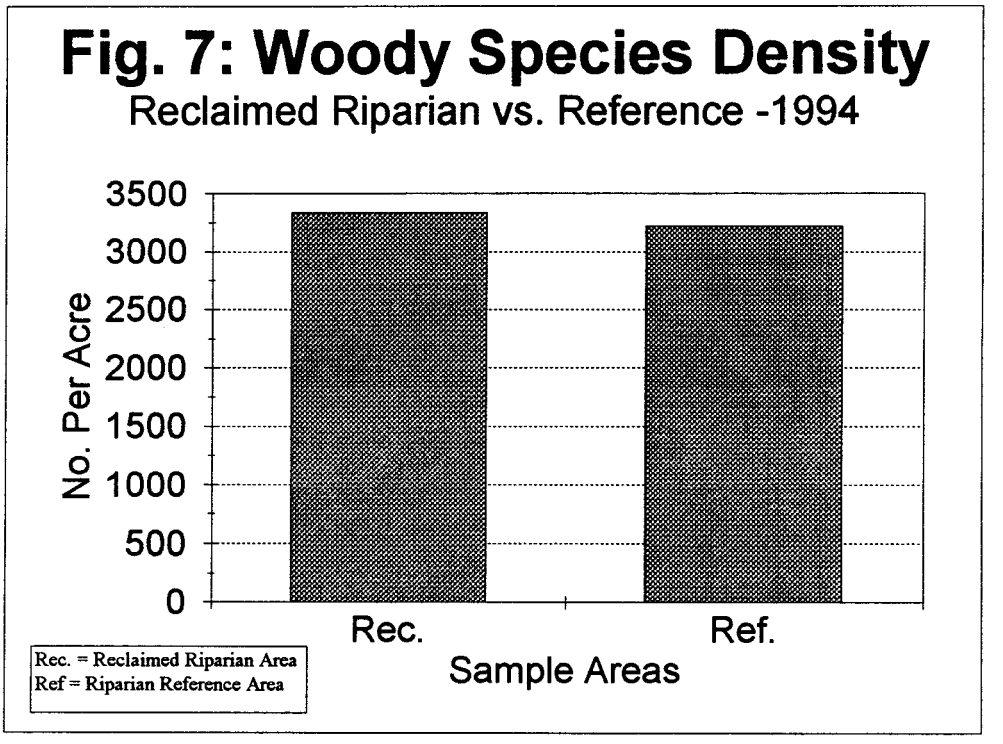


Fig. 7: Woody Species Density
Reclaimed Riparian vs. Reference -1994
3500
3000
2500
2000
1500
1000
500
0
No. Per Acre
Rec.
Ref.
Sample Areas
Rec. = Reclaimed Riparian Area
Ref = Riparian Reference Area

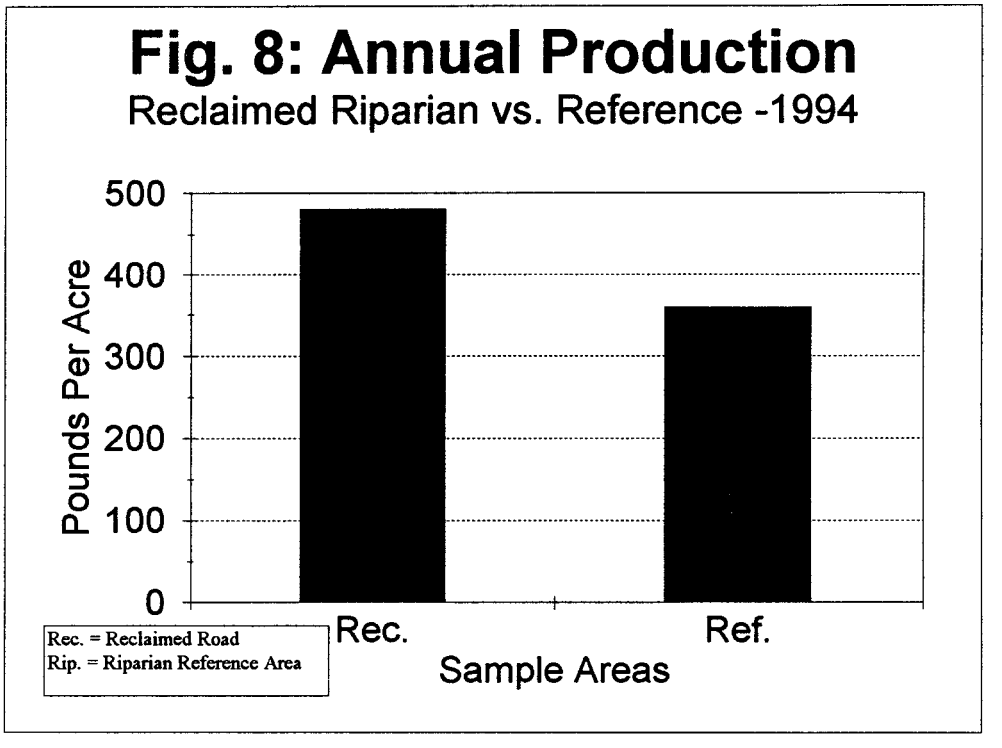


Fig. 8: Annual Production
Reclaimed Riparian vs. Reference -1994
500
400
300
200
100
0
Pounds Per Acre
Rec.
Ref.
Sample Areas
Rec. = Reclaimed Road
Rip. = Riparian Reference Area

APPENDIX A:

RAW DATA
(Cover, Composition, Frequency)

BEAVERCREEK/BLACKHAWK
Huntington #4
Reveg Lower Pads, Slopes etc.
A - Lower Area South (1-10)
Exposure: Variable
Slope: Variable

Sample Date: 29 Aug 1994	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
TREES & SHRUBS										
Gutierrezia sarothrae	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
Chrysothamnus nauseosus	0.00	0.00	0.00	0.00	0.00	10.00	15.00	5.00	10.00	0.00
FORBS										
Macharanthera canescens	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
Astragalus cicer	0.00	20.00	0.00	30.00	15.00	10.00	5.00	5.00	10.00	30.00
Penstemon palmeri	0.00	0.00	0.00	0.00	0.00	5.00	0.00	5.00	0.00	5.00
GRASSES										
Stipa hymenoides	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00
Elymus spicatus	0.00	0.00	5.00	5.00	5.00	10.00	5.00	0.00	15.00	0.00
Bromus carinatus	10.00	10.00	10.00	5.00	5.00	5.00	0.00	0.00	0.00	0.00
Agropyron cristatum	5.00	0.00	0.00	0.00	0.00	3.00	5.00	10.00	0.00	0.00
Dactylis glomeratus	0.00	5.00	0.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00
Elymus lanceolatus	20.00	5.00	10.00	0.00	5.00	5.00	10.00	0.00	5.00	5.00
COVER										
Total Living Cover	35.00	40.00	25.00	45.00	35.00	50.00	40.00	35.00	40.00	45.00
Litter	25.00	25.00	25.00	15.00	10.00	25.00	15.00	10.00	15.00	10.00
Bareground	15.00	15.00	35.00	20.00	30.00	15.00	15.00	45.00	10.00	30.00
Rock	25.00	20.00	15.00	20.00	25.00	10.00	30.00	10.00	35.00	15.00
% COMPOSITION										
Shrubs	0.00	0.00	0.00	0.00	0.00	24.00	37.50	14.29	25.00	0.00
Forbs	0.00	50.00	0.00	66.67	42.86	30.00	12.50	28.57	25.00	88.89
Grasses	100.00	50.00	100.00	33.33	57.14	46.00	50.00	57.14	50.00	11.11

BEAVERCREEK/BLACKHAWK
Huntington #4
Reveg Lower Pads, Slopes etc.
A - Lower Area South (1-10)
Exposure: Variable
Slope: Variable
Sample Date: 29 Aug 1994

Mean	SDev	Freq	
			TREES & SHRUBS
0.20	0.60	10.00	Gutierrezia sarothrae
4.00	5.39	40.00	Chrysothamnus nauseosus
			FORBS
0.50	1.50	10.00	Macharanthera canescens
12.50	10.55	80.00	Astragalus cicer
1.50	2.29	30.00	Penstemon palmeri
			GRASSES
1.00	3.00	10.00	Stipa hymenoides
4.50	4.72	60.00	Elymus spicatus
4.50	4.15	60.00	Bromus carinatus
2.30	3.26	40.00	Agropyron cristatum
1.50	2.29	30.00	Dactylis glomeratus
6.50	5.50	80.00	Elymus lanceolatus

		COVER
39.00	6.63	Total Living Cover
17.50	6.42	Litter
23.00	10.77	Bareground
20.50	7.89	Rock
		% COMPOSITION
10.08	13.40	Shrubs
34.45	27.04	Forbs
55.47	25.71	Grasses

BEAVERCREEK/BLACKHAWK
Huntington #4
Reveg Lower Pads, Slopes etc.
B - Lower Area North (11-20)
Exposure: Variable
Slope: Variable

Sample Date: 29 Aug 1994	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
TREES & SHRUBS										
Chrysothamnus nauseosus	5.00	0.00	5.00	10.00	0.00	15.00	25.00	0.00	5.00	0.00
Cercocarpus ledifolius	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eriogonums corymbosum	10.00	0.00	7.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FORBS										
Astragalus cicer	5.00	40.00	10.00	5.00	15.00	5.00	0.00	5.00	15.00	25.00
Penstemon palmeri	0.00	0.00	5.00	0.00	0.00	10.00	0.00	0.00	5.00	0.00
GRASSES										
Stipa hymenoides	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00
Elymus spicatus	0.00	8.00	8.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agropyron cristatum	0.00	7.00	5.00	0.00	0.00	0.00	10.00	15.00	15.00	5.00
Elymus lanceolatus	10.00	0.00	0.00	10.00	20.00	10.00	0.00	15.00	10.00	10.00
COVER										
Total Living Cover	35.00	55.00	40.00	25.00	35.00	40.00	35.00	45.00	50.00	40.00
Litter	10.00	10.00	10.00	10.00	10.00	10.00	5.00	10.00	10.00	10.00
Bareground	25.00	25.00	30.00	45.00	40.00	30.00	40.00	25.00	20.00	30.00
Rock	30.00	10.00	20.00	20.00	15.00	20.00	20.00	20.00	20.00	20.00
% COMPOSITION										
Shrubs	57.14	0.00	30.00	40.00	0.00	37.50	71.43	0.00	10.00	0.00
Forbs	14.29	72.73	37.50	20.00	42.86	37.50	0.00	11.11	40.00	62.50
Grasses	28.57	27.27	32.50	40.00	57.14	25.00	28.57	88.89	50.00	37.50

BEAVERCREEK/BLACKHAWK
Huntington #4
Reveg Lower Pads, Slopes etc.
B - Lower Area North (11-20)
Exposure: Variable
Slope: Variable
Sample Date: 29 Aug 1994

Mean	SDev	Freq	
			TREES & SHRUBS
6.50	7.76	60.00	Chrysothamnus nauseosus
0.50	1.50	10.00	Cercocarpus ledifolius
1.70	3.47	20.00	Eriogonums corymbosum
			FORBS
12.50	11.46	90.00	Astragalus cicer
2.00	3.32	30.00	Penstemon palmeri
			GRASSES
1.00	3.00	10.00	Stipa hymenoides
1.60	3.20	20.00	Elymus spicatus
5.70	5.69	60.00	Agropyron cristatum
8.50	6.34	70.00	Elymus lanceolatus

		COVER
40.00	8.06	Total Living Cover
9.50	1.50	Litter
31.00	7.68	Bareground
19.50	4.72	Rock
		% COMPOSITION
24.61	25.14	Shrubs
33.85	21.71	Forbs
41.54	18.63	Grasses

BEAVERCREEK/BLACKHAWK
Huntington #4
Reveg Lower Pads, Slopes etc.
C - Lower Area Slopes (21-28)
Exposure: Variable
Slope: Variable

Sample Date: 30 Aug 1994	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	Mean	SDev	Freq
TREES & SHRUBS											
Chrysothamnus nauseosus	0.00	15.00	10.00	5.00	0.00	0.00	0.00	0.00	3.75	5.45	37.50
Eriogonum corymbosum	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63	1.65	12.50
Rosa woodsii	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63	1.65	12.50
FORBS											
Melilotus officinalis	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63	1.65	12.50
Astragalus cicer	5.00	0.00	10.00	25.00	35.00	20.00	15.00	0.00	13.75	11.66	75.00
Penstemon palmeri	0.00	0.00	5.00	0.00	0.00	0.00	5.00	0.00	1.25	2.17	25.00
GRASSES											
Stipa hymenoides	0.00	12.00	10.00	0.00	5.00	0.00	0.00	0.00	3.38	4.72	37.50
Elymus spicatus	5.00	0.00	0.00	0.00	0.00	20.00	5.00	5.00	4.38	6.34	50.00
Agropyron cristatum	10.00	0.00	5.00	5.00	5.00	0.00	5.00	5.00	4.38	3.00	75.00
Bromus carinatus	5.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	1.25	2.17	25.00
Elymus lanceolatus	0.00	13.00	0.00	0.00	5.00	0.00	5.00	20.00	5.38	6.96	50.00
COVER											
Total Living Cover	40.00	40.00	40.00	35.00	50.00	40.00	40.00	30.00	39.38	5.27	
Litter	20.00	10.00	15.00	5.00	5.00	15.00	25.00	5.00	12.50	7.07	
Bareground	15.00	30.00	25.00	25.00	20.00	10.00	10.00	10.00	18.13	7.47	
Rock	25.00	20.00	20.00	35.00	25.00	35.00	25.00	55.00	30.00	10.90	
% COMPOSITION											
Shrubs	25.00	37.50	25.00	14.29	0.00	0.00	0.00	0.00	12.72	13.99	
Forbs	25.00	0.00	37.50	71.43	70.00	50.00	50.00	0.00	37.99	26.19	
Grasses	50.00	62.50	37.50	14.29	30.00	50.00	50.00	100.00	49.29	23.67	

BEAVERCREEK/BLACKHAWK
Huntington #4
Reveg Lower Pads, Slopes etc.
D - Below Slopes (29-35)
Exposure: Variable
Slope: Variable

Sample Date: 30 Aug 1994	1.00	2.00	3.00	4.00	5.00	6.00	7.00	Mean	SDev	Freq
TREES & SHRUBS										
Chrysothamnus nauseosus	10.00	0.00	5.00	20.00	5.00	10.00	0.00	7.14	6.47	71.43
Rosa woodsii	0.00	0.00	0.00	0.00	10.00	0.00	0.00	1.43	3.50	14.29
FORBS										
Penstemon palmeri	0.00	0.00	15.00	0.00	0.00	0.00	0.00	2.14	5.25	14.29
Astragalus cicer	10.00	5.00	10.00	5.00	10.00	10.00	20.00	10.00	4.63	100.00
Melilotus officinalis	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	1.75	14.29
Machaeranthera canescens	0.00	0.00	0.00	0.00	5.00	5.00	5.00	2.14	2.47	42.86
GRASSES										
Stipa hymenoides	0.00	0.00	0.00	10.00	0.00	0.00	0.00	1.43	3.50	14.29
Elymus spicatus	5.00	25.00	5.00	5.00	10.00	0.00	0.00	7.14	7.95	71.43
Agropyron cristatum	0.00	5.00	0.00	0.00	10.00	10.00	5.00	4.29	4.16	57.14
Elymus lanceolatus	0.00	5.00	0.00	0.00	0.00	5.00	10.00	2.86	3.64	42.86
COVER										
Total Living Cover	30.00	40.00	35.00	40.00	50.00	40.00	40.00	39.29	5.62	
Litter	15.00	5.00	5.00	5.00	15.00	15.00	5.00	9.29	4.95	
Bareground	10.00	45.00	30.00	5.00	5.00	5.00	5.00	15.00	14.88	
Rock	45.00	10.00	30.00	50.00	30.00	40.00	50.00	36.43	13.29	
% COMPOSITION										
Shrubs	33.33	0.00	14.29	50.00	30.00	25.00	0.00	21.80	16.96	
Forbs	50.00	12.50	71.43	12.50	30.00	37.50	62.50	39.49	21.42	
Grasses	16.67	87.50	14.29	37.50	40.00	37.50	37.50	38.71	22.26	

BEAVERCREEK/BLACKHAWK
Huntington #4
Reveg Lower Pads, Slopes etc.
E - Lowest Area (36-43)
Exposure: Variable
Slope: Variable

Sample Date: 30 Aug 1994	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	Mean	SDev	Freq
TREES & SHRUBS											
Chrysothamnus nauseosus	5.00	0.00	10.00	5.00	0.00	0.00	0.00	0.00	2.50	3.54	37.50
FORBS											
Machaeranthera canescens	0.00	0.00	5.00	5.00	0.00	0.00	0.00	0.00	1.25	2.17	25.00
Circium sp.	0.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00	1.25	2.17	25.00
Melilotus officinalis	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.63	1.65	12.50
Astragalus cicer	0.00	5.00	0.00	0.00	10.00	25.00	10.00	30.00	10.00	10.90	62.50
Cynoglossum officinale	0.00	5.00	0.00	5.00	0.00	0.00	5.00	0.00	1.88	2.42	37.50
Penstemon palmeri	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.63	1.65	12.50
GRASSES											
Elymus lanceolatus	0.00	0.00	0.00	0.00	15.00	0.00	5.00	5.00	3.13	4.96	37.50
Dactylis glomeratus	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	1.25	3.31	12.50
Poa pratensis	0.00	10.00	0.00	5.00	0.00	0.00	0.00	0.00	1.88	3.48	25.00
Agropyron cristatum	0.00	0.00	10.00	0.00	0.00	5.00	5.00	0.00	2.50	3.54	37.50
Bromus carinatus	5.00	0.00	5.00	10.00	10.00	0.00	5.00	0.00	4.38	3.90	62.50
Elymus hispidus	40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	13.23	12.50
Elymus spicatus	0.00	25.00	0.00	0.00	0.00	20.00	20.00	10.00	9.38	10.14	50.00
COVER											
Total Living Cover	50.00	50.00	45.00	40.00	35.00	50.00	50.00	45.00	45.63	5.27	
Litter	40.00	10.00	15.00	5.00	15.00	20.00	25.00	15.00	18.13	9.98	
Bareground	5.00	5.00	30.00	50.00	45.00	20.00	10.00	10.00	21.88	16.76	
Rock	5.00	35.00	10.00	5.00	5.00	10.00	15.00	30.00	14.38	11.02	
% COMPOSITION											
Shrubs	10.00	0.00	22.22	12.50	0.00	0.00	0.00	0.00	5.59	7.91	
Forbs	0.00	30.00	22.22	50.00	28.57	50.00	30.00	66.67	34.68	19.14	
Grasses	90.00	70.00	55.56	37.50	71.43	50.00	70.00	33.33	59.73	17.91	

BEAVERCREEK/BLACKHAWK
Huntington #4
Sites A thru E Combined
Exposure: Variable
Slope: Variable

A = 1 thru 10

Sample Date: 30 Aug 1994	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
TREES & SHRUBS										
Chrysothamnus nauseosus	0.00	0.00	0.00	0.00	0.00	10.00	15.00	5.00	10.00	0.00
Gutierrezia sarothrae	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
Cercocarpus ledifolius	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eriogonum corymbosum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rosa woodsii	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FORBS										
Penstemon palmeri	0.00	0.00	0.00	0.00	0.00	5.00	0.00	5.00	0.00	5.00
Astragalus cicer	0.00	20.00	0.00	30.00	15.00	10.00	5.00	5.00	10.00	30.00
Melilotus officinalis	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cynoglossum officinale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Machaeranthera canescens	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
Circium sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRASSES										
Stipa hymenoides	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00
Elymus spicatus	0.00	0.00	5.00	5.00	5.00	10.00	5.00	0.00	15.00	0.00
Agropyron cristatum	5.00	0.00	0.00	0.00	0.00	3.00	5.00	10.00	0.00	0.00
Bromus carinatus	10.00	10.00	10.00	5.00	5.00	5.00	0.00	0.00	0.00	0.00
Elymus lanceolatus	20.00	5.00	10.00	0.00	5.00	5.00	10.00	0.00	5.00	5.00
Dacytylis glomeratus	0.00	5.00	0.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00
Poa pratensis	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Elymus hispidus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COVER										
Total Living Cover	35.00	40.00	25.00	45.00	35.00	50.00	40.00	35.00	40.00	45.00
Litter	25.00	25.00	25.00	15.00	10.00	25.00	15.00	10.00	15.00	10.00
Bareground	15.00	15.00	35.00	20.00	30.00	15.00	15.00	45.00	10.00	30.00
Rock	25.00	20.00	15.00	20.00	25.00	10.00	30.00	10.00	35.00	15.00
% COMPOSITION										
Shrubs	0.00	0.00	0.00	0.00	0.00	24.00	37.50	14.29	25.00	0.00
Forbs	0.00	50.00	0.00	66.67	42.86	30.00	12.50	28.57	25.00	88.89
Grasses	100.00	50.00	100.00	33.33	57.14	46.00	50.00	57.14	50.00	11.11

B = 11 thru 20										C = 21 thru 28		
11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00
5.00	0.00	5.00	10.00	0.00	15.00	25.00	0.00	5.00	0.00	0.00	15.00	10.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.00	0.00	7.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00
0.00	0.00	5.00	0.00	0.00	10.00	0.00	0.00	5.00	0.00	0.00	0.00	5.00
5.00	40.00	10.00	5.00	15.00	5.00	0.00	5.00	15.00	25.00	5.00	0.00	10.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	12.00	10.00
0.00	8.00	8.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00
0.00	7.00	5.00	0.00	0.00	0.00	10.00	15.00	15.00	5.00	10.00	0.00	5.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00
10.00	0.00	0.00	10.00	20.00	10.00	0.00	15.00	10.00	10.00	0.00	13.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35.00	55.00	40.00	25.00	35.00	40.00	35.00	45.00	50.00	40.00	40.00	40.00	40.00
10.00	10.00	10.00	10.00	10.00	10.00	5.00	10.00	10.00	10.00	20.00	10.00	15.00
25.00	25.00	30.00	45.00	40.00	30.00	40.00	25.00	20.00	30.00	15.00	30.00	25.00
30.00	10.00	20.00	20.00	15.00	20.00	20.00	20.00	20.00	20.00	25.00	20.00	20.00
57.14	0.00	30.00	40.00	0.00	37.50	71.43	0.00	10.00	0.00	25.00	37.50	25.00
14.29	72.73	37.50	20.00	42.86	37.50	0.00	11.11	40.00	62.50	25.00	0.00	37.50
28.57	27.27	32.50	40.00	57.14	25.00	28.57	88.89	50.00	37.50	50.00	62.50	37.50

D = 29 thru 35

24.00	25.00	26.00	27.00	28.00	29.00	30.00	31.00	32.00	33.00	34.00	35.00	36.00
5.00	0.00	0.00	0.00	0.00	10.00	0.00	5.00	20.00	5.00	10.00	0.00	5.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00
0.00	0.00	0.00	5.00	0.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00
25.00	35.00	20.00	15.00	0.00	10.00	5.00	10.00	5.00	10.00	10.00	20.00	0.00
0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00
0.00	0.00	20.00	5.00	5.00	5.00	25.00	5.00	5.00	10.00	0.00	0.00	0.00
5.00	5.00	0.00	5.00	5.00	0.00	5.00	0.00	0.00	10.00	10.00	5.00	0.00
0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
0.00	5.00	0.00	5.00	20.00	0.00	5.00	0.00	0.00	0.00	5.00	10.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.00
35.00	50.00	40.00	40.00	30.00	30.00	40.00	35.00	40.00	50.00	40.00	40.00	50.00
5.00	5.00	15.00	25.00	5.00	15.00	5.00	5.00	5.00	15.00	15.00	5.00	40.00
25.00	20.00	10.00	10.00	10.00	10.00	45.00	30.00	5.00	5.00	5.00	5.00	5.00
35.00	25.00	35.00	25.00	55.00	45.00	10.00	30.00	50.00	30.00	40.00	50.00	5.00
14.29	0.00	0.00	0.00	0.00	33.33	0.00	14.29	50.00	30.00	25.00	0.00	10.00
71.43	70.00	50.00	50.00	0.00	50.00	12.50	71.43	12.50	30.00	37.50	62.50	0.00
14.29	30.00	50.00	50.00	100.00	16.67	87.50	14.29	37.50	40.00	37.50	37.50	90.00

BEAVERCREEK/BLACKHAWK
Huntington #4
Sites A thru E Combined
Exposure: Variable
Slope: Variable
Sample Date: 30 Aug 1994

E = 36 thru 43

37.00	38.00	39.00	40.00	41.00	42.00	43.00	Mean	SDev	Freq	
										TREES & SHRUBS
0.00	10.00	5.00	0.00	0.00	0.00	0.00	4.77	6.19	48.84	Chrysothamnus nauseosus
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.30	2.33	Gutierrezia sarothrae
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.75	2.33	Cercocarpus ledifolius
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	1.95	6.98	Eriogonum corymbosum
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35	1.67	4.65	Rosa woodsii
										FORBS
0.00	0.00	5.00	0.00	0.00	0.00	0.00	1.51	3.15	23.26	Penstemon palmeri
5.00	0.00	0.00	10.00	25.00	10.00	30.00	11.86	10.46	81.40	Astragalus cicer
0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.35	1.27	6.98	Melilotus officinalis
5.00	0.00	5.00	0.00	0.00	5.00	0.00	0.35	1.27	6.98	Cynoglossum officinale
0.00	5.00	5.00	0.00	0.00	0.00	0.00	0.70	1.73	13.95	Machaeranthera canescens
5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.23	1.05	4.65	Circium sp.
										GRASSES
0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.33	3.39	13.95	Stipa hymenoides
25.00	0.00	0.00	0.00	20.00	20.00	10.00	5.14	7.18	48.84	Elymus spicatus
0.00	10.00	0.00	0.00	5.00	5.00	0.00	3.84	4.31	53.49	Agropyron cristatum
0.00	5.00	10.00	10.00	0.00	5.00	0.00	2.09	3.45	30.23	Bromus carinatus
0.00	0.00	0.00	15.00	0.00	5.00	5.00	5.53	6.06	58.14	Elymus lanceolatus
0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.58	1.93	9.30	Dacytylis glomeratus
10.00	0.00	5.00	0.00	0.00	0.00	0.00	0.35	1.67	4.65	Poa pratensis
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93	6.03	2.33	Elymus hispidus
										COVER
50.00	45.00	40.00	35.00	50.00	50.00	45.00	40.58	14.46		Total Living Cover
10.00	15.00	5.00	15.00	20.00	25.00	15.00	13.49	7.51		Litter
5.00	30.00	50.00	45.00	20.00	10.00	10.00	22.44	13.00		Bareground
35.00	10.00	5.00	5.00	10.00	15.00	30.00	23.49	12.23		Rock
										% COMPOSITION
0.00	22.22	12.50	0.00	0.00	0.00	0.00	15.02	18.32		Shrubs
30.00	22.22	50.00	28.57	50.00	30.00	66.67	35.83	23.55		Forbs
70.00	55.56	37.50	71.43	50.00	70.00	33.33	49.14	23.25		Grasses

BEAVERCREEK/BLACKHAWK
Huntington #4
Reclaimed Road
Exposure: Variable
Slope: Variable

Sample Date: 30 Aug 1994	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
TREES & SHRUBS										
Chrysothamnus nauseosus	10.00	0.00	30.00	15.00	15.00	15.00	5.00	10.00	10.00	0.00
Cercocarpus ledifolius	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00
FORBS										
Machaeranthera canescens	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Penstemon pachyphyllus	5.00	5.00	0.00	7.00	5.00	2.00	5.00	0.00	7.00	0.00
Astragalus cicer	0.00	5.00	0.00	5.00	0.00	3.00	0.00	5.00	8.00	0.00
Cynoglossum officinale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRASSES										
Stipa hymenoides	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00	5.00	0.00
Bromus inermis	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00
Dactylis glomerata	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agropyron cristatum	5.00	0.00	0.00	0.00	0.00	5.00	5.00	0.00	5.00	10.00
Bromus carinatus	10.00	10.00	10.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00
Elymus lanceolatus	20.00	10.00	10.00	0.00	0.00	10.00	25.00	0.00	0.00	15.00
Elymus spicatus	0.00	5.00	0.00	0.00	15.00	5.00	0.00	0.00	0.00	0.00
Elymus salinus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COVER										
Total Living Cover	50.00	40.00	50.00	30.00	35.00	40.00	40.00	40.00	35.00	25.00
Litter	25.00	25.00	30.00	5.00	10.00	10.00	25.00	25.00	25.00	10.00
Bareground	5.00	15.00	5.00	25.00	5.00	20.00	25.00	15.00	25.00	45.00
Rock	20.00	20.00	15.00	40.00	50.00	30.00	10.00	20.00	15.00	20.00
% COMPOSITION										
Shrubs	20.00	0.00	60.00	50.00	42.86	37.50	12.50	37.50	28.57	0.00
Forbs	10.00	25.00	0.00	40.00	14.29	12.50	12.50	12.50	42.86	0.00
Grasses	70.00	75.00	40.00	10.00	42.86	50.00	75.00	50.00	28.57	100.00

11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00
0.00	5.00	0.00	0.00	15.00	5.00	15.00	20.00	5.00	0.00	0.00	0.00	0.00
0.00	0.00	5.00	0.00	0.00	5.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	5.00	0.00	0.00
10.00	0.00	0.00	10.00	5.00	5.00	10.00	0.00	0.00	5.00	0.00	10.00	0.00
5.00	15.00	20.00	40.00	5.00	20.00	0.00	0.00	0.00	10.00	0.00	25.00	20.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	10.00	0.00	0.00	5.00	5.00	10.00	0.00	15.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00
20.00	10.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	5.00	35.00	0.00	0.00	0.00
0.00	0.00	20.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	10.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.00	0.00	0.00
50.00	40.00	45.00	50.00	50.00	45.00	35.00	40.00	35.00	50.00	25.00	35.00	40.00
20.00	10.00	30.00	5.00	25.00	10.00	10.00	25.00	10.00	25.00	5.00	10.00	25.00
10.00	25.00	5.00	5.00	5.00	20.00	35.00	5.00	30.00	5.00	25.00	35.00	30.00
20.00	25.00	20.00	40.00	20.00	25.00	20.00	30.00	25.00	20.00	45.00	20.00	5.00
0.00	12.50	11.11	0.00	30.00	22.22	42.86	50.00	28.57	0.00	0.00	0.00	0.00
30.00	37.50	44.44	100.00	20.00	55.56	28.57	0.00	14.29	30.00	20.00	100.00	50.00
70.00	50.00	44.44	0.00	50.00	22.22	28.57	50.00	57.14	70.00	80.00	0.00	50.00

BEAVERCREEK/BLACKHAWK
Huntington #4
Reclaimed Road
Exposure: Variable
Slope: Variable
Sample Date: 30 Aug 1994

24.00	25.00	26.00	27.00	28.00	29.00	30.00	Mean	SDev	Freq	
										TREES & SHRUBS
5.00	0.00	20.00	15.00	0.00	0.00	0.00	7.17	8.03	56.67	Chrysothamnus nauseosus
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	1.70	13.33	Cercocarpus ledifolius
										FORBS
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	1.25	6.67	Machaeranthera canescens
0.00	0.00	5.00	5.00	0.00	0.00	0.00	3.37	3.59	53.33	Penstemon pachyphyllus
5.00	25.00	15.00	30.00	0.00	35.00	25.00	10.70	11.74	66.67	Astragalus cicer
5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.90	3.33	Cynoglossum officinale
										GRASSES
0.00	0.00	0.00	5.00	25.00	5.00	5.00	3.50	5.94	36.67	Stipa hymenoides
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	2.61	10.00	Bromus inermis
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	1.98	6.67	Dactylis glomerata
0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.33	4.61	26.67	Agropyron cristatum
0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10	3.01	13.33	Bromus carinatus
25.00	0.00	0.00	0.00	0.00	0.00	0.00	5.83	9.41	36.67	Elymus lanceolatus
0.00	25.00	15.00	0.00	0.00	10.00	10.00	4.17	6.84	33.33	Elymus spicatus
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	3.59	3.33	Elymus salinus
										COVER
40.00	50.00	55.00	55.00	25.00	50.00	40.00	41.33	8.46		Total Living Cover
10.00	25.00	5.00	20.00	20.00	10.00	15.00	16.83	8.31		Litter
40.00	20.00	20.00	20.00	20.00	20.00	5.00	18.83	11.45		Bareground
10.00	5.00	20.00	5.00	35.00	20.00	40.00	23.00	11.37		Rock
										% COMPOSITION
12.50	0.00	36.36	27.27	0.00	0.00	0.00	18.74	18.82		Shrubs
25.00	50.00	36.36	63.64	0.00	70.00	62.50	33.58	26.39		Forbs
62.50	50.00	27.27	9.09	100.00	30.00	37.50	47.67	25.57		Grasses

BEAVERCREEK/BLACKHAWK
Huntington #4
Reference Area
Exposure: SSW
Slope: 34 deg.

Sample Date: 31 Aug 1994	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
TREES & SHRUBS										
Pinus edulis	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	5.00
Cercocarpus ledifolius	0.00	0.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00
Juniperus osteosperma	0.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00
FORBS										
Cryptantha sp.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRASSES										
Elymus salinus	15.00	35.00	40.00	10.00	25.00	20.00	45.00	20.00	30.00	20.00
Stipa hymenoides	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
COVER										
OverStory	0.00	0.00	0.00	35.00	20.00	0.00	0.00	0.00	25.00	35.00
Understory	15.00	35.00	40.00	30.00	40.00	20.00	45.00	20.00	40.00	25.00
Litter	5.00	25.00	15.00	25.00	45.00	10.00	30.00	5.00	30.00	10.00
Bareground	10.00	10.00	5.00	10.00	5.00	20.00	10.00	50.00	20.00	35.00
Rock	70.00	30.00	40.00	35.00	10.00	50.00	15.00	25.00	10.00	30.00
% COMPOSITION										
Shrubs	0.00	0.00	0.00	50.00	37.50	0.00	0.00	0.00	25.00	20.00
Forbs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grasses	100.00	100.00	100.00	50.00	62.50	100.00	100.00	100.00	75.00	80.00

11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00
20.00	0.00	0.00	0.00	20.00	15.00	30.00	0.00	5.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.00	50.00	35.00	20.00	15.00	20.00	5.00	0.00	15.00	20.00	15.00	25.00	35.00
0.00	0.00	0.00	0.00	0.00	5.00	0.00	20.00	0.00	10.00	0.00	0.00	0.00
0.00	50.00	0.00	15.00	0.00	0.00	0.00	0.00	10.00	10.00	0.00	10.00	0.00
35.00	50.00	35.00	25.00	35.00	40.00	35.00	20.00	20.00	30.00	15.00	35.00	35.00
25.00	40.00	20.00	20.00	25.00	10.00	25.00	25.00	25.00	20.00	5.00	15.00	25.00
10.00	5.00	5.00	30.00	5.00	15.00	5.00	10.00	10.00	5.00	5.00	25.00	15.00
30.00	5.00	40.00	25.00	35.00	35.00	35.00	45.00	45.00	45.00	75.00	25.00	25.00
57.14	0.00	0.00	20.00	57.14	37.50	85.71	0.00	25.00	0.00	0.00	28.57	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
42.86	100.00	100.00	80.00	42.86	62.50	14.29	100.00	75.00	100.00	100.00	71.43	100.00

24.00	25.00	26.00	27.00	28.00	29.00	30.00	31.00	32.00	33.00	34.00	35.00	36.00
30.00	0.00	10.00	0.00	50.00	0.00	0.00	20.00	0.00	0.00	35.00	0.00	0.00
0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	50.00	5.00	0.00	0.00	0.00	0.00	5.00	0.00
0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.00	10.00	15.00	15.00	0.00	0.00	0.00	5.00	35.00	40.00	0.00	15.00	20.00
0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40.00	0.00	10.00	0.00	35.00	0.00	0.00	0.00	0.00	20.00	50.00	0.00	0.00
40.00	20.00	35.00	15.00	50.00	50.00	5.00	25.00	35.00	40.00	35.00	20.00	20.00
50.00	5.00	10.00	35.00	5.00	20.00	5.00	65.00	10.00	25.00	25.00	10.00	55.00
5.00	5.00	10.00	25.00	5.00	10.00	5.00	5.00	20.00	10.00	20.00	10.00	20.00
5.00	70.00	45.00	25.00	40.00	20.00	85.00	5.00	35.00	25.00	20.00	60.00	5.00
75.00	25.00	28.57	0.00	100.00	100.00	100.00	80.00	0.00	0.00	100.00	25.00	0.00
0.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25.00	50.00	71.43	100.00	0.00	0.00	0.00	20.00	100.00	100.00	0.00	75.00	100.00

37.00	38.00	39.00	40.00	41.00	42.00	43.00	44.00	45.00	46.00	47.00	48.00
0.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20.00	25.00	20.00	30.00	20.00	40.00	25.00	10.00	20.00	30.00	15.00	35.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00	15.00	0.00	0.00
20.00	25.00	20.00	45.00	20.00	40.00	25.00	15.00	20.00	35.00	15.00	35.00
15.00	25.00	10.00	15.00	25.00	25.00	15.00	10.00	25.00	25.00	40.00	30.00
40.00	5.00	5.00	20.00	30.00	15.00	5.00	25.00	25.00	30.00	5.00	15.00
25.00	45.00	65.00	20.00	25.00	20.00	55.00	50.00	30.00	10.00	40.00	20.00
0.00	0.00	0.00	33.33	0.00	0.00	0.00	0.00	0.00	14.29	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	100.00	100.00	66.67	100.00	100.00	100.00	100.00	100.00	85.71	100.00	100.00

BEAVERCREEK/BLACKHAWK
Huntington #4
Reference Area
Exposure: SSW
Slope: 34 deg.
Sample Date: 31 Aug 1994

49.00	50.00	Mean	SDev	Freq	
					TREES & SHRUBS
0.00	0.00	5.30	10.97	26.00	Pinus edulis
0.00	0.00	0.50	2.29	6.00	Cercocarpus ledifolius
0.00	0.00	1.80	7.40	12.00	Juniperus osteosperma
					FORBS
0.00	0.00	0.10	0.70	2.00	Cryptantha sp.
					GRASSES
15.00	0.00	20.00	12.45	88.00	Elymus salinus
0.00	30.00	1.70	5.35	14.00	Stipa hymenoides
					COVER
0.00	0.00	8.20	14.20		OverStory
15.00	30.00	29.40	10.80		Understory
15.00	10.00	21.70	13.21		Litter
50.00	5.00	14.90	11.64		Bareground
20.00	55.00	34.00	18.97		Rock
					% COMPOSITION
0.00	0.00	22.50	32.30		Shrubs
0.00	0.00	0.50	3.50		Forbs
100.00	100.00	77.00	32.53		Grasses

BEAVERCREEK/BLACKHAWK
Huntington #4
Riparian
Exposure: E
Slope: 2 deg

Sample Date: 31 Aug 1994	1.00	2.00	3.00	4.00	5.00	Mean	SDev	Freq
TREES & SHRUBS								
Salix lutea	20.00	50.00	20.00	25.00	0.00	23.00	16.00	80.00
FORBS								
Trifolium pratense	0.00	0.00	0.00	0.00	5.00	1.00	2.00	20.00
Agoseris aurantiaca	0.00	0.00	5.00	5.00	0.00	2.00	2.45	40.00
Mentha arvensis	0.00	0.00	5.00	0.00	0.00	1.00	2.00	20.00
Astragalus cicer	5.00	0.00	25.00	0.00	20.00	10.00	10.49	60.00
Geranium richardsonii	5.00	0.00	0.00	0.00	0.00	1.00	2.00	20.00
Equisetum arvensis	5.00	5.00	0.00	25.00	0.00	7.00	9.27	60.00
Medicago sativa	0.00	0.00	5.00	5.00	0.00	2.00	2.45	40.00
GRASSES								
Dactylis glomeratus	15.00	10.00	10.00	5.00	45.00	17.00	14.35	100.00
COVER								
Total Living Cover	50.00	65.00	70.00	65.00	70.00	64.00	7.35	
Litter	20.00	25.00	5.00	20.00	20.00	18.00	6.78	
Bareground	5.00	5.00	5.00	5.00	5.00	5.00	0.00	
Rock	25.00	5.00	20.00	10.00	5.00	13.00	8.12	
% COMPOSITION								
Shrubs	40.00	76.92	28.57	38.46	0.00	36.79	24.68	
Forbs	30.00	7.69	57.14	53.85	35.71	36.88	17.88	
Grasses	30.00	15.38	14.29	7.69	64.29	26.33	20.33	

BEAVERCREEK/BLACKHAWK
Huntington #4
Riparian Reference Area
Exposure: E
Slope: 2 deg
Sample Date: 31 Aug 1994

	1 thru 5 West					6 thru 10 East				
	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
TREES & SHRUBS										
Salix lutea	20.00	25.00	15.00	0.00	0.00	0.00	45.00	15.00	0.00	0.00
Cornus sericea	0.00	0.00	0.00	15.00	25.00	0.00	0.00	0.00	0.00	0.00
Rosa woodsii	0.00	0.00	0.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00
FORBS										
Epilobium sp.	0.00	0.00	10.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
Equisetum arvense	0.00	0.00	20.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00
Galium bifolium	0.00	0.00	0.00	10.00	10.00	0.00	0.00	0.00	0.00	0.00
GRASSES										
Dactylis glomeratus	30.00	25.00	5.00	0.00	20.00	15.00	0.00	35.00	30.00	0.00
Calamagrostis canadensis	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65.00
Bromus inermis	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.00	0.00
Poa pratensis	0.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00
Agrostis stolonifera	0.00	0.00	0.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00
Phleum alpinum	0.00	0.00	0.00	0.00	0.00	0.00	25.00	0.00	0.00	0.00
COVER										
Total Living Cover	50.00	50.00	50.00	75.00	55.00	55.00	70.00	50.00	50.00	65.00
Litter	20.00	25.00	20.00	20.00	10.00	5.00	25.00	25.00	10.00	20.00
Bareground	25.00	20.00	25.00	4.00	30.00	35.00	4.00	5.00	5.00	5.00
Rock	5.00	5.00	5.00	1.00	5.00	5.00	1.00	20.00	35.00	10.00
% COMPOSITION										
Shrubs	40.00	50.00	30.00	20.00	45.45	27.27	64.29	30.00	0.00	0.00
Forbs	0.00	0.00	60.00	46.67	18.18	0.00	0.00	0.00	0.00	0.00
Grasses	60.00	50.00	10.00	33.33	36.36	72.73	35.71	70.00	100.00	100.00

BEAVERCREEK/BLACKHAWK
Huntington #4
Riparian Reference Area
Exposure: E
Slope: 2 deg
Sample Date: 31 Aug 1994

10.00	Mean	SDev	Freq	
				TREES & SHRUBS
0.00	12.00	14.35	50.00	Salix lutea
0.00	4.00	8.31	20.00	Cornus sericea
0.00	1.50	4.50	10.00	Rosa woodsii
				FORBS
0.00	1.50	3.20	20.00	Epilobium sp.
0.00	4.00	8.00	20.00	Equisetum arvense
0.00	2.00	4.00	20.00	Galium bifolium
				GRASSES
0.00	16.00	13.19	70.00	Dactylis glomeratus
65.00	6.50	19.50	10.00	Calamagrostis canadensis
0.00	2.00	6.00	10.00	Bromus inermis
0.00	2.50	7.50	10.00	Poa pratensis
0.00	2.50	7.50	10.00	Agrostis stolonifera
0.00	2.50	7.50	10.00	Phleum alpinum
				COVER
65.00	57.00	9.00		Total Living Cover
20.00	18.00	6.78		Litter
5.00	15.80	11.77		Bareground
10.00	9.20	10.03		Rock
				% COMPOSITION
0.00	30.70	19.54		Shrubs
0.00	12.48	21.33		Forbs
100.00	56.81	27.96		Grasses

APPENDIX B:

RAW DATA
(Production)

BLACKHAWK: HUNTINGTON #4

' ower Reveg.

RODUCTION

8/29/94

AREA "A"	Wt.Herb.g/m2	Proportion	Tot.Herb.g/m	Tot.Herb.lbs/m2	Herb.lbs/Ac	Wt.Wood.g/m2	Proportion	Tot.Wood.g/m	Tot.Wood.lbs/m2	Wood.lbs/Ac	Tot.lbs/Ac	Prop. a
1.00	21.00	0.50	42.00	0.09	374.78	0.00	0.50	0.00	0.00	0.00	374.78	0.70
2.00	33.00	0.50	66.00	0.15	588.94	0.00	0.50	0.00	0.00	0.00	588.94	0.50
3.00	16.00	0.50	32.00	0.07	285.55	0.00	0.50	0.00	0.00	0.00	285.55	1.00
4.00	23.00	0.50	46.00	0.10	410.47	0.00	0.50	0.00	0.00	0.00	410.47	2.00
5.00	18.00	0.50	36.00	0.08	321.24	0.00	0.50	0.00	0.00	0.00	321.24	1.00
6.00	12.00	0.50	24.00	0.05	214.16	12.00	0.50	24.00	0.05	214.16	428.32	0.80
7.00	10.00	0.50	20.00	0.04	178.47	10.00	0.50	20.00	0.04	178.47	356.93	1.00
8.00	15.00	0.50	30.00	0.07	267.70	8.00	0.50	16.00	0.04	142.77	410.47	1.00
9.00	22.00	0.50	44.00	0.10	392.63	8.00	0.50	16.00	0.04	142.77	535.40	0.70
10.00	29.00	0.50	58.00	0.13	517.55	0.00	0.50	0.00	0.00	0.00	517.55	0.70
AREA "B"												
11.00	6.00	0.50	12.00	0.03	107.08	10.00	0.50	20.00	0.04	178.47	285.55	1.00
12.00	40.00	0.50	80.00	0.18	713.87	0.00	0.50	0.00	0.00	0.00	713.87	0.25
13.00	18.00	0.50	36.00	0.08	321.24	13.00	0.50	26.00	0.06	232.01	553.25	1.00
14.00	5.00	0.50	10.00	0.02	89.23	7.00	0.50	14.00	0.03	124.93	214.16	1.00
15.00	9.00	0.50	18.00	0.04	160.62	0.00	0.50	0.00	0.00	0.00	160.62	1.30
16.00	17.00	0.50	34.00	0.07	303.39	11.00	0.50	22.00	0.05	196.31	499.71	0.50
17.00	6.00	0.50	12.00	0.03	107.08	22.00	0.50	44.00	0.10	392.63	499.71	1.00
18.00	16.00	0.50	32.00	0.07	285.55	0.00	0.50	0.00	0.00	0.00	285.55	0.75
19.00	34.00	0.50	68.00	0.15	606.79	1.00	1.00	1.00	0.00	8.92	615.71	0.20
20.00	35.00	0.50	70.00	0.15	624.63	0.00	0.50	0.00	0.00	0.00	624.63	0.25
AREA "C"												
21.00	11.00	0.50	22.00	0.05	196.31	5.00	0.50	10.00	0.02	89.23	285.55	1.00
22.00	18.00	0.50	36.00	0.08	321.24	7.00	0.50	14.00	0.03	124.93	446.17	2.00
23.00	22.00	0.50	44.00	0.10	392.63	10.00	0.50	20.00	0.04	178.47	571.09	1.50
24.00	27.00	0.50	54.00	0.12	481.86	0.00	0.50	0.00	0.00	0.00	481.86	1.00
25.00	53.00	0.50	106.00	0.23	945.87	0.00	0.50	0.00	0.00	0.00	945.87	0.50
26.00	25.00	0.50	50.00	0.11	446.17	0.00	0.50	0.00	0.00	0.00	446.17	1.00
27.00	28.00	0.50	56.00	0.12	499.71	0.00	0.50	0.00	0.00	0.00	499.71	0.50
28.00	12.00	0.50	24.00	0.05	214.16	0.00	0.50	0.00	0.00	0.00	214.16	3.00

aHerb.lbs/Ac	aWood.lbs/Ac	aTot.lbs/Ac	Prop. b	bHerb.lbs/Ac	bWood.lbs/Ac	bTot.lbs/Ac	Prop. c	cHerb.lbs/Ac	cWood.lbs/Ac	cTot.lbs/Ac	Prop. d	dHerb.lbs/Ac
262.35	0.00	262.35	0.70	262.35	0.00	262.35	1.00	374.78	0.00	374.78	1.00	374.78
294.47	0.00	294.47	1.00	588.94	0.00	588.94	0.25	147.23	0.00	147.23	0.25	147.23
285.55	0.00	285.55	1.00	285.55	0.00	285.55	0.70	199.88	0.00	199.88	1.50	428.32
820.95	0.00	820.95	1.25	513.09	0.00	513.09	1.00	410.47	0.00	410.47	1.50	615.71
321.24	0.00	321.24	1.00	321.24	0.00	321.24	3.00	963.72	0.00	963.72	1.00	321.24
171.33	171.33	342.66	0.50	107.08	107.08	214.16	0.60	128.50	128.50	256.99	0.40	85.66
178.47	178.47	356.93	1.00	178.47	178.47	356.93	1.00	178.47	178.47	356.93	1.00	178.47
267.70	142.77	410.47	1.00	267.70	142.77	410.47	1.50	401.55	214.16	615.71	1.25	334.62
274.84	99.94	374.78	0.75	294.47	107.08	401.55	1.00	392.63	142.77	535.40	1.00	392.63
362.29	0.00	362.29	0.70	362.29	0.00	362.29	1.00	517.55	0.00	517.55	0.50	258.78
107.08	178.47	285.55	1.50	160.62	267.70	428.32	0.75	80.31	133.85	214.16	1.00	107.08
178.47	0.00	178.47	0.25	178.47	0.00	178.47	0.25	178.47	0.00	178.47	0.35	249.85
321.24	232.01	553.25	1.00	321.24	232.01	553.25	1.00	321.24	232.01	553.25	1.00	321.24
89.23	124.93	214.16	2.00	178.47	249.85	428.32	1.00	89.23	124.93	214.16	2.00	178.47
208.81	0.00	208.81	1.00	160.62	0.00	160.62	1.30	208.81	0.00	208.81	1.00	160.62
151.70	98.16	249.85	1.00	303.39	196.31	499.71	1.00	303.39	196.31	499.71	0.50	151.70
107.08	392.63	499.71	0.30	32.12	117.79	149.91	1.00	107.08	392.63	499.71	0.75	80.31
214.16	0.00	214.16	0.75	214.16	0.00	214.16	1.50	428.32	0.00	428.32	1.00	285.55
121.36	1.78	123.14	0.50	303.39	4.46	307.85	0.50	303.39	4.46	307.85	0.30	182.04
156.16	0.00	156.16	0.50	312.32	0.00	312.32	0.50	312.32	0.00	312.32	0.20	124.93
196.31	89.23	285.55	1.00	196.31	89.23	285.55	1.50	294.47	133.85	428.32	1.00	196.31
642.48	249.85	892.33	1.00	321.24	124.93	446.17	2.00	642.48	249.85	892.33	1.00	321.24
588.94	267.70	856.64	1.00	392.63	178.47	571.09	1.00	392.63	178.47	571.09	1.00	392.63
481.86	0.00	481.86	0.70	337.30	0.00	337.30	0.50	240.93	0.00	240.93	1.00	481.86
472.94	0.00	472.94	0.30	283.76	0.00	283.76	0.25	236.47	0.00	236.47	0.25	236.47
446.17	0.00	446.17	0.50	223.08	0.00	223.08	0.70	312.32	0.00	312.32	0.50	223.08
249.85	0.00	249.85	1.20	599.65	0.00	599.65	0.75	374.78	0.00	374.78	1.00	499.71
642.48	0.00	642.48	2.00	428.32	0.00	428.32	1.00	214.16	0.00	214.16	1.00	214.16

dWood.lbs/Ac	dTot.lbs/Ac	MeanHerb	StdHerb	MeanWood	StdWood	MeanTot	StdTot
0.00	374.78	329.81	55.08	0.00	0.00	329.81	55.08
0.00	147.23	353.36	199.72	0.00	0.00	353.36	199.72
0.00	428.32	296.97	73.58	0.00	0.00	296.97	73.58
0.00	615.71	554.14	153.58	0.00	0.00	554.14	153.58
0.00	321.24	449.74	256.99	0.00	0.00	449.74	256.99
85.66	171.33	141.35	46.13	141.35	46.13	282.69	92.26
178.47	356.93	178.47	0.00	178.47	0.00	356.93	0.00
178.47	513.09	307.85	53.54	164.19	28.55	472.04	82.09
142.77	535.40	349.44	53.26	127.07	19.37	476.51	72.63
0.00	258.78	403.69	100.36	0.00	0.00	403.69	100.36
		Tot.Mean Herb=	**Tot.Std. Herb=**	**Tot.Mean Woody=**	**Tot.Std. Woody=**	**Tot.Mean Total=**	**Tot.Std. Total=**
		336.48	***114.30***	***61.11***	***75.89***	***397.59***	***84.00***
178.47	285.55	112.43	26.23	187.39	43.72	299.82	69.94
0.00	249.85	299.82	208.86	0.00	0.00	299.82	208.86
232.01	553.25	321.24	0.00	232.01	0.00	553.25	0.00
249.85	428.32	124.93	43.72	174.90	61.20	299.82	104.92
0.00	160.62	179.89	23.61	0.00	0.00	179.89	23.61
98.16	249.85	242.71	74.32	157.05	48.09	399.77	122.40
294.47	374.78	86.73	29.21	318.03	107.09	404.76	136.30
0.00	285.55	285.55	78.20	0.00	0.00	285.55	78.20
2.68	184.71	303.39	167.28	4.46	2.46	307.85	169.74
0.00	124.93	306.07	177.11	0.00	0.00	306.07	177.11
		Tot.Mean Herb=	**Tot.Std. Herb=**	**Tot.Mean Woody=**	**Tot.Std. Woody=**	**Tot.Mean Total=**	**Tot.Std. Total=**
		226.28	***86.82***	***107.38***	***114.04***	***333.66***	***94.06***
89.23	285.55	215.94	39.26	98.16	17.85	314.10	57.11
124.93	446.17	449.74	157.37	174.90	61.20	624.63	218.58
178.47	571.09	431.89	78.53	196.31	35.69	628.20	114.22
0.00	481.86	404.76	99.22	0.00	0.00	404.76	99.22
0.00	236.47	435.10	269.86	0.00	0.00	435.10	269.86
0.00	223.08	330.16	100.16	0.00	0.00	330.16	100.16
0.00	499.71	444.74	120.76	0.00	0.00	444.74	120.76
0.00	214.16	342.66	171.33	0.00	0.00	342.66	171.33
		Tot.Mean Herb=	**Tot.Std. Herb=**	**Tot.Mean Woody=**	**Tot.Std. Woody=**	**Tot.Mean Total=**	**Tot.Std. Total=**
		364.59	***86.72***	***64.08***	***76.98***	***428.67***	***114.67***

AREA "D"

29.00	8.00	0.50	16.00	0.04	142.77	7.00	0.50	14.00	0.03	124.93	267.70	1.00
30.00	12.00	0.50	24.00	0.05	214.16	0.00	0.50	0.00	0.00	0.00	214.16	1.00
31.00	26.00	0.50	52.00	0.11	464.01	5.00	0.50	10.00	0.02	89.23	553.25	1.70
32.00	22.00	0.50	44.00	0.10	392.63	14.00	0.50	28.00	0.06	249.85	642.48	1.00
33.00	21.00	0.50	42.00	0.09	374.78	17.00	0.50	34.00	0.07	303.39	678.17	1.00
34.00	36.00	0.50	72.00	0.16	642.48	13.00	0.50	26.00	0.06	232.01	874.49	1.00
35.00	21.00	0.50	42.00	0.09	374.78	0.00	0.50	0.00	0.00	0.00	374.78	2.00

AREA "E"

36.00	26.00	0.50	52.00	0.11	464.01	6.00	0.50	12.00	0.03	107.08	571.09	0.75
37.00	26.00	0.50	52.00	0.11	464.01	0.00	0.50	0.00	0.00	0.00	464.01	0.50
38.00	14.00	0.50	28.00	0.06	249.85	22.00	0.50	44.00	0.10	392.63	642.48	0.50
39.00	25.00	0.50	50.00	0.11	446.17	2.00	0.50	4.00	0.01	35.69	481.86	2.00
40.00	24.00	0.50	48.00	0.11	428.32	0.00	0.50	0.00	0.00	0.00	428.32	1.00
41.00	43.00	0.50	86.00	0.19	767.41	0.00	0.50	0.00	0.00	0.00	767.41	2.00
42.00	28.00	0.50	56.00	0.12	499.71	0.00	0.50	0.00	0.00	0.00	499.71	1.00
43.00	18.00	0.50	36.00	0.08	321.24	0.00	0.50	0.00	0.00	0.00	321.24	2.00

142.77	124.93	267.70	1.00	142.77	124.93	267.70	1.00	142.77	124.93	267.70	1.50	214.16
214.16	0.00	214.16	1.00	214.16	0.00	214.16	1.00	214.16	0.00	214.16	1.00	214.16
788.82	151.70	940.52	1.00	464.01	89.23	553.25	1.00	464.01	89.23	553.25	0.70	324.81
392.63	249.85	642.48	1.00	392.63	249.85	642.48	1.50	588.94	374.78	963.72	0.50	196.31
374.78	303.39	678.17	1.00	374.78	303.39	678.17	1.00	374.78	303.39	678.17	1.50	562.17
642.48	232.01	874.49	1.50	963.72	348.01	1311.73	1.50	963.72	348.01	1311.73	0.30	192.74
749.56	0.00	749.56	3.00	1124.34	0.00	1124.34	1.00	374.78	0.00	374.78	1.00	374.78
348.01	80.31	428.32	1.50	696.02	160.62	856.64	0.10	46.40	10.71	57.11	0.75	348.01
232.01	0.00	232.01	0.70	324.81	0.00	324.81	0.70	324.81	0.00	324.81	1.30	603.22
124.93	196.31	321.24	0.50	124.93	196.31	321.24	1.00	249.85	392.63	642.48	2.00	499.71
892.33	71.39	963.72	1.00	446.17	35.69	481.86	1.50	669.25	53.54	722.79	2.00	892.33
428.32	0.00	428.32	0.50	214.16	0.00	214.16	1.00	428.32	0.00	428.32	1.00	428.32
1534.81	0.00	1534.81	1.00	767.41	0.00	767.41	1.00	767.41	0.00	767.41	1.00	767.41
499.71	0.00	499.71	1.00	499.71	0.00	499.71	1.00	499.71	0.00	499.71	1.00	499.71
642.48	0.00	642.48	1.00	321.24	0.00	321.24	2.00	642.48	0.00	642.48	1.00	321.24

187.39	401.55	157.05	28.55	137.42	24.99	294.47	53.54
0.00	214.16	214.16	0.00	0.00	0.00	214.16	0.00
62.46	387.27	501.13	153.62	96.37	29.54	597.51	183.16
124.93	321.24	392.63	124.16	249.85	79.01	642.48	203.17
455.09	1017.26	412.26	74.96	333.73	60.68	745.99	135.63
69.60	262.35	681.03	283.27	245.93	102.29	926.96	385.57
0.00	374.78	599.65	299.82	0.00	0.00	599.65	299.82
		Tot.Mean Herb=	**Tot.Std. Herb=**	**Tot.Mean Woody=**	**Tot.Std. Woody=**	**Tot.Mean Total=**	**Tot.Std. Total=**
		369.17	***204.27***	***125.27***	***118.01***	***494.43***	***271.07***

80.31	428.32	380.49	209.89	87.81	48.44	468.30	258.32
0.00	603.22	389.77	129.92	0.00	0.00	389.77	129.92
785.25	1284.96	249.85	136.85	392.63	215.05	642.48	351.90
71.39	963.72	669.25	199.53	53.54	15.96	722.79	215.49
0.00	428.32	385.49	85.66	0.00	0.00	385.49	85.66
0.00	767.41	920.89	306.96	0.00	0.00	920.89	306.96
0.00	499.71	499.71	0.00	0.00	0.00	499.71	0.00
0.00	321.24	449.74	157.37	0.00	0.00	449.74	157.37
		Tot.Mean Herb=	**Tot.Std. Herb=**	**Tot.Mean Woody=**	**Tot.Std. Woody=**	**Tot.Mean Total=**	**Tot.Std. Total=**
		493.15	***196.87***	***66.75***	***127.03***	***559.89***	***175.78***

BLACKHAWK: HUNTINGTON #4

' ower Reveg.

RODUCTION

8/29/94

AREA "A"	Wt.Herb.g/m2	Proportion	Tot.Herb.g/m	Tot.Herb.lbs/m2	Herb.lbs/Ac	Wt.Wood.g/m2	Proportion	Tot.Wood.g/m	Tot.Wood.lbs/m2	Wood.lbs/Ac	Tot.lbs/Ac
1.00	21.00	0.50	42.00	0.09	374.78	0.00	0.50	0.00	0.00	0.00	374.78
2.00	33.00	0.50	66.00	0.15	588.94	0.00	0.50	0.00	0.00	0.00	588.94
3.00	16.00	0.50	32.00	0.07	285.55	0.00	0.50	0.00	0.00	0.00	285.55
4.00	23.00	0.50	46.00	0.10	410.47	0.00	0.50	0.00	0.00	0.00	410.47
5.00	18.00	0.50	36.00	0.08	321.24	0.00	0.50	0.00	0.00	0.00	321.24
6.00	12.00	0.50	24.00	0.05	214.16	12.00	0.50	24.00	0.05	214.16	428.32
7.00	10.00	0.50	20.00	0.04	178.47	10.00	0.50	20.00	0.04	178.47	356.93
8.00	15.00	0.50	30.00	0.07	267.70	8.00	0.50	16.00	0.04	142.77	410.47
9.00	22.00	0.50	44.00	0.10	392.63	8.00	0.50	16.00	0.04	142.77	535.40
10.00	29.00	0.50	58.00	0.13	517.55	0.00	0.50	0.00	0.00	0.00	517.55
AREA "B"											
11.00	6.00	0.50	12.00	0.03	107.08	10.00	0.50	20.00	0.04	178.47	285.55
12.00	40.00	0.50	80.00	0.18	713.87	0.00	0.50	0.00	0.00	0.00	713.87
13.00	18.00	0.50	36.00	0.08	321.24	13.00	0.50	26.00	0.06	232.01	553.25
14.00	5.00	0.50	10.00	0.02	89.23	7.00	0.50	14.00	0.03	124.93	214.16
15.00	9.00	0.50	18.00	0.04	160.62	0.00	0.50	0.00	0.00	0.00	160.62
16.00	17.00	0.50	34.00	0.07	303.39	11.00	0.50	22.00	0.05	196.31	499.71
17.00	6.00	0.50	12.00	0.03	107.08	22.00	0.50	44.00	0.10	392.63	499.71
18.00	16.00	0.50	32.00	0.07	285.55	0.00	0.50	0.00	0.00	0.00	285.55
19.00	34.00	0.50	68.00	0.15	606.79	1.00	1.00	1.00	0.00	8.92	615.71
20.00	35.00	0.50	70.00	0.15	624.63	0.00	0.50	0.00	0.00	0.00	624.63
AREA "C"											
21.00	11.00	0.50	22.00	0.05	196.31	5.00	0.50	10.00	0.02	89.23	285.55
22.00	18.00	0.50	36.00	0.08	321.24	7.00	0.50	14.00	0.03	124.93	446.17
23.00	22.00	0.50	44.00	0.10	392.63	10.00	0.50	20.00	0.04	178.47	571.09
24.00	27.00	0.50	54.00	0.12	481.86	0.00	0.50	0.00	0.00	0.00	481.86
25.00	53.00	0.50	106.00	0.23	945.87	0.00	0.50	0.00	0.00	0.00	945.87
26.00	25.00	0.50	50.00	0.11	446.17	0.00	0.50	0.00	0.00	0.00	446.17
27.00	28.00	0.50	56.00	0.12	499.71	0.00	0.50	0.00	0.00	0.00	499.71
28.00	12.00	0.50	24.00	0.05	214.16	0.00	0.50	0.00	0.00	0.00	214.16
AREA "D"											
29.00	8.00	0.50	16.00	0.04	142.77	7.00	0.50	14.00	0.03	124.93	267.70
30.00	12.00	0.50	24.00	0.05	214.16	0.00	0.50	0.00	0.00	0.00	214.16
31.00	26.00	0.50	52.00	0.11	464.01	5.00	0.50	10.00	0.02	89.23	553.25
32.00	22.00	0.50	44.00	0.10	392.63	14.00	0.50	28.00	0.06	249.85	642.48
33.00	21.00	0.50	42.00	0.09	374.78	17.00	0.50	34.00	0.07	303.39	678.17
34.00	36.00	0.50	72.00	0.16	642.48	13.00	0.50	26.00	0.06	232.01	874.49
35.00	21.00	0.50	42.00	0.09	374.78	0.00	0.50	0.00	0.00	0.00	374.78
AREA "E"											
36.00	26.00	0.50	52.00	0.11	464.01	6.00	0.50	12.00	0.03	107.08	571.09
37.00	26.00	0.50	52.00	0.11	464.01	0.00	0.50	0.00	0.00	0.00	464.01
38.00	14.00	0.50	28.00	0.06	249.85	22.00	0.50	44.00	0.10	392.63	642.48
39.00	25.00	0.50	50.00	0.11	446.17	2.00	0.50	4.00	0.01	35.69	481.86
40.00	24.00	0.50	48.00	0.11	428.32	0.00	0.50	0.00	0.00	0.00	428.32
41.00	43.00	0.50	86.00	0.19	767.41	0.00	0.50	0.00	0.00	0.00	767.41
42.00	28.00	0.50	56.00	0.12	499.71	0.00	0.50	0.00	0.00	0.00	499.71
43.00	18.00	0.50	36.00	0.08	321.24	0.00	0.50	0.00	0.00	0.00	321.24

Prop. a	aHerb.lbs/Ac	aWood.lbs/Ac	aTot.lbs/Ac	Prop. b	bHerb.lbs/Ac	bWood.lbs/Ac	bTot.lbs/Ac	Prop. c	cHerb.lbs/Ac	cWood.lbs/Ac	cTot.lbs/Ac	Prop. d	dHerb.lbs/Ac
0.70	262.35	0.00	262.35	0.70	262.35	0.00	262.35	1.00	374.78	0.00	374.78	1.00	374.78
0.50	294.47	0.00	294.47	1.00	588.94	0.00	588.94	0.25	147.23	0.00	147.23	0.25	147.23
1.00	285.55	0.00	285.55	1.00	285.55	0.00	285.55	0.70	199.88	0.00	199.88	1.50	428.32
2.00	820.95	0.00	820.95	1.25	513.09	0.00	513.09	1.00	410.47	0.00	410.47	1.50	615.71
1.00	321.24	0.00	321.24	1.00	321.24	0.00	321.24	3.00	963.72	0.00	963.72	1.00	321.24
0.80	171.33	171.33	342.66	0.50	107.08	107.08	214.16	0.60	128.50	128.50	256.99	0.40	85.66
1.00	178.47	178.47	356.93	1.00	178.47	178.47	356.93	1.00	178.47	178.47	356.93	1.00	178.47
1.00	267.70	142.77	410.47	1.00	267.70	142.77	410.47	1.50	401.55	214.16	615.71	1.25	334.62
0.70	274.84	99.94	374.78	0.75	294.47	107.08	401.55	1.00	392.63	142.77	535.40	1.00	392.63
0.70	362.29	0.00	362.29	0.70	362.29	0.00	362.29	1.00	517.55	0.00	517.55	0.50	258.78
1.00	107.08	178.47	285.55	1.50	160.62	267.70	428.32	0.75	80.31	133.85	214.16	1.00	107.08
0.25	178.47	0.00	178.47	0.25	178.47	0.00	178.47	0.25	178.47	0.00	178.47	0.35	249.85
1.00	321.24	232.01	553.25	1.00	321.24	232.01	553.25	1.00	321.24	232.01	553.25	1.00	321.24
1.00	89.23	124.93	214.16	2.00	178.47	249.85	428.32	1.00	89.23	124.93	214.16	2.00	178.47
1.30	208.81	0.00	208.81	1.00	160.62	0.00	160.62	1.30	208.81	0.00	208.81	1.00	160.62
0.50	151.70	98.16	249.85	1.00	303.39	196.31	499.71	1.00	303.39	196.31	499.71	0.50	151.70
1.00	107.08	392.63	499.71	0.30	32.12	117.79	149.91	1.00	107.08	392.63	499.71	0.75	80.31
0.75	214.16	0.00	214.16	0.75	214.16	0.00	214.16	1.50	428.32	0.00	428.32	1.00	285.55
0.20	121.36	1.78	123.14	0.50	303.39	4.46	307.85	0.50	303.39	4.46	307.85	0.30	182.04
0.25	156.16	0.00	156.16	0.50	312.32	0.00	312.32	0.50	312.32	0.00	312.32	0.20	124.93
1.00	196.31	89.23	285.55	1.00	196.31	89.23	285.55	1.50	294.47	133.85	428.32	1.00	196.31
2.00	642.48	249.85	892.33	1.00	321.24	124.93	446.17	2.00	642.48	249.85	892.33	1.00	321.24
1.50	588.94	267.70	856.64	1.00	392.63	178.47	571.09	1.00	392.63	178.47	571.09	1.00	392.63
1.00	481.86	0.00	481.86	0.70	337.30	0.00	337.30	0.50	240.93	0.00	240.93	1.00	481.86
0.50	472.94	0.00	472.94	0.30	283.76	0.00	283.76	0.25	236.47	0.00	236.47	0.25	236.47
1.00	446.17	0.00	446.17	0.50	223.08	0.00	223.08	0.70	312.32	0.00	312.32	0.50	223.08
0.50	249.85	0.00	249.85	1.20	599.65	0.00	599.65	0.75	374.78	0.00	374.78	1.00	499.71
3.00	642.48	0.00	642.48	2.00	428.32	0.00	428.32	1.00	214.16	0.00	214.16	1.00	214.16
1.00	142.77	124.93	267.70	1.00	142.77	124.93	267.70	1.00	142.77	124.93	267.70	1.50	214.16
1.00	214.16	0.00	214.16	1.00	214.16	0.00	214.16	1.00	214.16	0.00	214.16	1.00	214.16
1.70	788.82	151.70	940.52	1.00	464.01	89.23	553.25	1.00	464.01	89.23	553.25	0.70	324.81
1.00	392.63	249.85	642.48	1.00	392.63	249.85	642.48	1.50	588.94	374.78	963.72	0.50	196.31
1.00	374.78	303.39	678.17	1.00	374.78	303.39	678.17	1.00	374.78	303.39	678.17	1.50	562.17
1.00	642.48	232.01	874.49	1.50	963.72	348.01	1311.73	1.50	963.72	348.01	1311.73	0.30	192.74
2.00	749.56	0.00	749.56	3.00	1124.34	0.00	1124.34	1.00	374.78	0.00	374.78	1.00	374.78
0.75	348.01	80.31	428.32	1.50	696.02	160.62	856.64	0.10	46.40	10.71	57.11	0.75	348.01
0.50	232.01	0.00	232.01	0.70	324.81	0.00	324.81	0.70	324.81	0.00	324.81	1.30	603.22
0.50	124.93	196.31	321.24	0.50	124.93	196.31	321.24	1.00	249.85	392.63	642.48	2.00	499.71
2.00	892.33	71.39	963.72	1.00	446.17	35.69	481.86	1.50	669.25	53.54	722.79	2.00	892.33
1.00	428.32	0.00	428.32	0.50	214.16	0.00	214.16	1.00	428.32	0.00	428.32	1.00	428.32
2.00	1534.81	0.00	1534.81	1.00	767.41	0.00	767.41	1.00	767.41	0.00	767.41	1.00	767.41
1.00	499.71	0.00	499.71	1.00	499.71	0.00	499.71	1.00	499.71	0.00	499.71	1.00	499.71
2.00	642.48	0.00	642.48	1.00	321.24	0.00	321.24	2.00	642.48	0.00	642.48	1.00	321.24

dWood.lbs/Ac	dTot.lbs/Ac	MeanHerb	StdHerb	MeanWood	StdWood	MeanTot	StdTot
0.00	374.78	329.81	55.08	0.00	0.00	329.81	55.08
0.00	147.23	353.36	199.72	0.00	0.00	353.36	199.72
0.00	428.32	296.97	73.58	0.00	0.00	296.97	73.58
0.00	615.71	554.14	153.58	0.00	0.00	554.14	153.58
0.00	321.24	449.74	256.99	0.00	0.00	449.74	256.99
85.66	171.33	141.35	46.13	141.35	46.13	282.69	92.26
178.47	356.93	178.47	0.00	178.47	0.00	356.93	0.00
178.47	513.09	307.85	53.54	164.19	28.55	472.04	82.09
142.77	535.40	349.44	53.26	127.07	19.37	476.51	72.63
0.00	258.78	403.69	100.36	0.00	0.00	403.69	100.36
178.47	285.55	112.43	26.23	187.39	43.72	299.82	69.94
0.00	249.85	299.82	208.86	0.00	0.00	299.82	208.86
232.01	553.25	321.24	0.00	232.01	0.00	553.25	0.00
249.85	428.32	124.93	43.72	174.90	61.20	299.82	104.92
0.00	160.62	179.89	23.61	0.00	0.00	179.89	23.61
98.16	249.85	242.71	74.32	157.05	48.09	399.77	122.40
294.47	374.78	86.73	29.21	318.03	107.09	404.76	136.30
0.00	285.55	285.55	78.20	0.00	0.00	285.55	78.20
2.68	184.71	303.39	167.28	4.46	2.46	307.85	169.74
0.00	124.93	306.07	177.11	0.00	0.00	306.07	177.11
89.23	285.55	215.94	39.26	98.16	17.85	314.10	57.11
124.93	446.17	449.74	157.37	174.90	61.20	624.63	218.58
178.47	571.09	431.89	78.53	196.31	35.69	628.20	114.22
0.00	481.86	404.76	99.22	0.00	0.00	404.76	99.22
0.00	236.47	435.10	269.86	0.00	0.00	435.10	269.86
0.00	223.08	330.16	100.16	0.00	0.00	330.16	100.16
0.00	499.71	444.74	120.76	0.00	0.00	444.74	120.76
0.00	214.16	342.66	171.33	0.00	0.00	342.66	171.33
187.39	401.55	157.05	28.55	137.42	24.99	294.47	53.54
0.00	214.16	214.16	0.00	0.00	0.00	214.16	0.00
62.46	387.27	501.13	153.62	96.37	29.54	597.51	183.16
124.93	321.24	392.63	124.16	249.85	79.01	642.48	203.17
455.09	1017.26	412.26	74.96	333.73	60.68	745.99	135.63
69.60	262.35	681.03	283.27	245.93	102.29	926.96	385.57
0.00	374.78	599.65	299.82	0.00	0.00	599.65	299.82
80.31	428.32	380.49	209.89	87.81	48.44	468.30	258.32
0.00	603.22	389.77	129.92	0.00	0.00	389.77	129.92
785.25	1284.96	249.85	136.85	392.63	215.05	642.48	351.90
71.39	963.72	669.25	199.53	53.54	15.96	722.79	215.49
0.00	428.32	385.49	85.66	0.00	0.00	385.49	85.66
0.00	767.41	920.89	306.96	0.00	0.00	920.89	306.96
0.00	499.71	499.71	0.00	0.00	0.00	499.71	0.00
0.00	321.24	449.74	157.37	0.00	0.00	449.74	157.37

Tot.Mean Herb=	Tot.Std. Herb=	Tot.Mean Woody=	Tot.Std. Woody=	Tot.Mean Total=	Tot.Std. Total=
362.46	*162.73*	*87.25*	*109.86*	*449.70*	*170.54*

BLACKHAWK: HUNTINGTON #4

`eclaimed Road

.RODUCTION

8/30/94

AREA	Wt.Herb.g/m2	Proportion	Tot.Herb.g/m	Tot.Herb.lbs/m2	Herb.lbs/Ac	Wt.Wood.g/m2	Proportion	Tot.Wood.g/m	Tot.Wood.lbs/m2	Wood.lbs/Ac	Tot.lbs/Ac	Prop. a
1.00	29.00	0.50	58.00	0.13	517.55	5.00	0.50	10.00	0.02	89.23	606.79	0.75
2.00	37.00	1.00	37.00	0.08	330.16	0.00	0.50	0.00	0.00	0.00	330.16	1.00
3.00	11.00	0.50	22.00	0.05	196.31	13.00	0.50	26.00	0.06	232.01	428.32	1.00
4.00	23.00	1.00	23.00	0.05	205.24	13.00	1.00	13.00	0.03	116.00	321.24	0.75
5.00	19.00	1.00	19.00	0.04	169.54	27.00	1.00	27.00	0.06	240.93	410.47	0.75
6.00	28.00	1.00	28.00	0.06	249.85	36.00	1.00	36.00	0.08	321.24	571.09	0.75
7.00	15.00	1.00	15.00	0.03	133.85	8.00	1.00	8.00	0.02	71.39	205.24	1.00
8.00	30.00	1.00	30.00	0.07	267.70	31.00	1.00	31.00	0.07	276.62	544.32	0.50
9.00	36.00	1.00	36.00	0.08	321.24	15.00	1.00	15.00	0.03	133.85	455.09	3.00
10.00	7.00	1.00	7.00	0.02	62.46	0.00	1.00	0.00	0.00	0.00	62.46	3.00
11.00	45.00	0.50	90.00	0.20	803.10	0.00	1.00	0.00	0.00	0.00	803.10	1.00
12.00	31.00	0.50	62.00	0.14	553.25	1.00	0.50	2.00	0.00	17.85	571.09	1.00
13.00	35.00	0.50	70.00	0.15	624.63	1.00	1.00	1.00	0.00	8.92	633.56	0.25
14.00	41.00	0.50	82.00	0.18	731.71	0.00	0.50	0.00	0.00	0.00	731.71	0.50
15.00	20.00	0.50	40.00	0.09	356.93	14.00	0.50	28.00	0.06	249.85	606.79	2.00
16.00	27.00	0.50	54.00	0.12	481.86	7.00	0.50	14.00	0.03	124.93	606.79	0.25
17.00	22.00	0.50	44.00	0.10	392.63	0.00	0.50	0.00	0.00	0.00	392.63	1.00
18.00	8.00	0.50	16.00	0.04	142.77	24.00	0.50	48.00	0.11	428.32	571.09	0.50
19.00	18.00	0.50	36.00	0.08	321.24	6.00	0.50	12.00	0.03	107.08	428.32	1.00
20.00	11.00	0.50	22.00	0.05	196.31	0.00	0.50	0.00	0.00	0.00	196.31	1.00
21.00	22.00	0.50	44.00	0.10	392.63	0.00	0.50	0.00	0.00	0.00	392.63	0.50
22.00	33.00	0.50	66.00	0.15	588.94	0.00	0.50	0.00	0.00	0.00	588.94	1.50
23.00	26.00	0.50	52.00	0.11	464.01	0.00	0.50	0.00	0.00	0.00	464.01	1.00
24.00	14.00	0.50	28.00	0.06	249.85	1.00	0.50	2.00	0.00	17.85	267.70	1.50
25.00	25.00	0.50	50.00	0.11	446.17	0.00	0.50	0.00	0.00	0.00	446.17	1.50
26.00	24.00	0.50	48.00	0.11	428.32	20.00	0.50	40.00	0.09	356.93	785.25	0.50
27.00	29.00	0.50	58.00	0.13	517.55	27.00	0.50	54.00	0.12	481.86	999.41	0.50
28.00	12.00	0.50	24.00	0.05	214.16	0.00	0.50	0.00	0.00	0.00	214.16	1.00
29.00	38.00	0.50	76.00	0.17	678.17	38.00	0.50	76.00	0.17	678.17	1356.35	1.00
30.00	30.00	0.50	60.00	0.13	535.40	30.00	0.50	60.00	0.13	535.40	1070.80	0.50

aHerb.lbs/Ac	aWood.lbs/Ac	aTot.lbs/Ac	Prop. b	bHerb.lbs/Ac	bWood.lbs/Ac	bTot.lbs/Ac	Prop. c	cHerb.lbs/Ac	cWood.lbs/Ac	cTot.lbs/Ac	Prop. d	dHerb.lbs/Ac
388.16	66.92	455.09	0.80	414.04	71.39	485.43	0.75	388.16	66.92	455.09	0.65	336.41
330.16	0.00	330.16	1.00	330.16	0.00	330.16	1.00	330.16	0.00	330.16	1.00	330.16
196.31	232.01	428.32	0.75	147.23	174.00	321.24	0.75	147.23	174.00	321.24	0.35	68.71
153.93	87.00	240.93	1.20	246.28	139.20	385.49	1.00	205.24	116.00	321.24	1.00	205.24
127.16	180.70	307.85	1.50	254.31	361.39	615.71	1.00	169.54	240.93	410.47	1.00	169.54
187.39	240.93	428.32	1.00	249.85	321.24	571.09	1.20	299.82	385.49	685.31	1.00	249.85
133.85	71.39	205.24	0.80	107.08	57.11	164.19	0.70	93.69	49.97	143.67	0.80	107.08
133.85	138.31	272.16	0.50	133.85	138.31	272.16	0.50	133.85	138.31	272.16	2.00	535.40
963.72	401.55	1365.27	1.00	321.24	133.85	455.09	1.00	321.24	133.85	455.09	1.50	481.86
187.39	0.00	187.39	1.00	62.46	0.00	62.46	2.00	124.93	0.00	124.93	2.00	124.93
803.10	0.00	803.10	0.50	401.55	0.00	401.55	0.50	401.55	0.00	401.55	1.00	803.10
553.25	17.85	571.09	0.25	138.31	4.46	142.77	1.00	553.25	17.85	571.09	1.00	553.25
156.16	2.23	158.39	0.50	312.32	4.46	316.78	0.50	312.32	4.46	316.78	1.00	624.63
365.86	0.00	365.86	1.00	731.71	0.00	731.71	1.00	731.71	0.00	731.71	1.00	731.71
713.87	499.71	1213.57	1.00	356.93	249.85	606.79	1.00	356.93	249.85	606.79	1.00	356.93
120.46	31.23	151.70	0.50	240.93	62.46	303.39	1.00	481.86	124.93	606.79	0.50	240.93
392.63	0.00	392.63	0.50	196.31	0.00	196.31	0.50	196.31	0.00	196.31	0.25	98.16
71.39	214.16	285.55	1.00	142.77	428.32	571.09	0.50	71.39	214.16	285.55	1.00	142.77
321.24	107.08	428.32	0.70	224.87	74.96	299.82	2.00	642.48	214.16	856.64	2.00	642.48
196.31	0.00	196.31	1.00	196.31	0.00	196.31	1.50	294.47	0.00	294.47	1.00	196.31
196.31	0.00	196.31	1.00	392.63	0.00	392.63	1.00	392.63	0.00	392.63	0.50	196.31
883.41	0.00	883.41	1.00	588.94	0.00	588.94	1.00	588.94	0.00	588.94	0.50	294.47
464.01	0.00	464.01	0.50	232.01	0.00	232.01	1.00	464.01	0.00	464.01	1.00	464.01
374.78	26.77	401.55	1.50	374.78	26.77	401.55	1.50	374.78	26.77	401.55	1.50	374.78
669.25	0.00	669.25	0.20	89.23	0.00	89.23	1.00	446.17	0.00	446.17	1.00	446.17
214.16	178.47	392.63	0.75	321.24	267.70	588.94	1.00	428.32	356.93	785.25	0.70	299.82
258.78	240.93	499.71	0.75	388.16	361.39	749.56	0.25	129.39	120.46	249.85	0.15	77.63
214.16	0.00	214.16	1.00	214.16	0.00	214.16	3.00	642.48	0.00	642.48	4.00	856.64
678.17	678.17	1356.35	0.50	339.09	339.09	678.17	0.75	508.63	508.63	1017.26	1.00	678.17
267.70	267.70	535.40	1.00	535.40	535.40	1070.80	1.00	535.40	535.40	1070.80	2.00	1070.80

dWood.lbs/Ac	dTot.lbs/Ac	MeanHerb	StdHerb	MeanWood	StdWood	MeanTot	StdTot
58.00	394.41	408.87	59.91	70.49	10.33	479.36	70.24
0.00	330.16	330.16	0.00	0.00	0.00	330.16	0.00
81.20	149.91	151.16	46.70	178.64	55.20	329.81	101.90
116.00	321.24	203.18	29.31	114.84	16.57	318.03	45.88
240.93	410.47	178.02	41.53	252.98	59.02	431.00	100.54
321.24	571.09	247.35	35.69	318.03	45.88	565.38	81.57
57.11	164.19	115.11	16.06	61.39	8.57	176.50	24.63
553.25	1088.65	240.93	156.09	248.96	161.30	489.89	317.39
200.77	682.63	481.86	248.83	200.77	103.68	682.63	352.51
0.00	124.93	112.43	46.74	0.00	0.00	112.43	46.74
0.00	803.10	642.48	196.72	0.00	0.00	642.48	196.72
17.85	571.09	470.26	165.97	15.17	5.35	485.43	171.33
8.92	633.56	406.01	187.39	5.80	2.68	411.81	190.07
0.00	731.71	658.54	146.34	0.00	0.00	658.54	146.34
249.85	606.79	428.32	142.77	299.82	99.94	728.14	242.71
62.46	303.39	313.21	144.56	81.20	37.48	394.41	182.04
0.00	98.16	255.21	117.79	0.00	0.00	255.21	117.79
428.32	571.09	114.22	34.97	342.66	104.92	456.87	139.89
214.16	856.64	430.46	176.65	143.49	58.88	573.95	235.54
0.00	196.31	215.94	39.26	0.00	0.00	215.94	39.26
0.00	196.31	314.10	96.17	0.00	0.00	314.10	96.17
0.00	294.47	588.94	186.24	0.00	0.00	588.94	186.24
0.00	464.01	417.61	92.80	0.00	0.00	417.61	92.80
26.77	401.55	349.79	49.97	24.99	3.57	374.78	53.54
0.00	446.17	419.40	186.32	0.00	0.00	419.40	186.32
249.85	549.68	338.37	81.72	281.98	68.10	620.35	149.82
72.28	149.91	274.30	162.51	255.39	151.31	529.69	313.82
0.00	856.64	428.32	270.89	0.00	0.00	428.32	270.89
678.17	1356.35	576.45	135.63	576.45	135.63	1152.89	271.27
1070.80	2141.60	588.94	262.29	588.94	262.29	1177.88	524.58

Tot.Mean Herb=	Tot.Std. Herb=	Tot.Mean Woody=	Tot.Std. Woody=	Tot.Mean Total=	Tot.Std. Total=
356.67	*155.74*	*136.40*	*166.39*	*492.06*	*233.03*

BLACKHAWK: HUNTINGTON #4

'REFERENCE

RODUCTION

8/31/94

AREA	Wt.Herb.g/m2	Proportion	Tot.Herb.g/m	Tot.Herb.lbs/m2	Herb.lbs/Ac	Wt.Wood.g/m2	Proportion	Tot.Wood.g/m	Tot.Wood.lbs/m2	Wood.lbs/Ac	Tot.lbs/Ac	Prop. a
1.00	9.00	0.50	18.00	0.04	160.62	0.00	0.50	0.00	0.00	0.00	160.62	3.00
2.00	17.00	0.50	34.00	0.07	303.39	0.00	0.50	0.00	0.00	0.00	303.39	0.50
3.00	14.00	0.50	28.00	0.06	249.85	0.00	0.50	0.00	0.00	0.00	249.85	1.00
4.00	15.00	0.50	30.00	0.07	267.70	0.00	0.50	0.00	0.00	0.00	267.70	1.00
5.00	12.00	0.50	24.00	0.05	214.16	1.00	0.50	2.00	0.00	17.85	232.01	1.00
6.00	8.00	0.50	16.00	0.04	142.77	0.00	0.50	0.00	0.00	0.00	142.77	2.00
7.00	18.00	0.50	36.00	0.08	321.24	0.00	0.50	0.00	0.00	0.00	321.24	0.75
8.00	4.00	0.50	8.00	0.02	71.39	0.00	0.50	0.00	0.00	0.00	71.39	3.00
9.00	7.00	0.50	14.00	0.03	124.93	9.00	0.50	18.00	0.04	160.62	285.55	0.50
10.00	7.00	0.50	14.00	0.03	124.93	5.00	0.50	10.00	0.02	89.23	214.16	1.00
11.00	7.00	0.50	14.00	0.03	124.93	8.00	0.50	16.00	0.04	142.77	267.70	1.00
12.00	19.00	0.50	38.00	0.08	339.09	0.00	0.50	0.00	0.00	0.00	339.09	0.10
13.00	10.00	0.50	20.00	0.04	178.47	0.00	0.50	0.00	0.00	0.00	178.47	0.50
14.00	6.00	0.50	12.00	0.03	107.08	2.00	0.50	4.00	0.01	35.69	142.77	1.00
15.00	4.00	0.50	8.00	0.02	71.39	14.00	0.50	28.00	0.06	249.85	321.24	1.00
16.00	9.00	0.50	18.00	0.04	160.62	18.00	0.50	36.00	0.08	321.24	481.86	0.10
17.00	3.00	1.00	3.00	0.01	26.77	17.00	0.50	34.00	0.07	303.39	330.16	1.00
18.00	3.00	0.50	6.00	0.01	53.54	0.00	0.50	0.00	0.00	0.00	53.54	2.00
19.00	2.00	0.50	4.00	0.01	35.69	7.00	0.50	14.00	0.03	124.93	160.62	4.00
20.00	9.00	0.50	18.00	0.04	160.62	0.00	0.50	0.00	0.00	0.00	160.62	0.50
21.00	3.00	0.50	6.00	0.01	53.54	0.00	0.50	0.00	0.00	0.00	53.54	4.00
22.00	9.00	0.50	18.00	0.04	160.62	6.00	0.50	12.00	0.03	107.08	267.70	1.00
23.00	12.00	0.50	24.00	0.05	214.16	0.00	0.50	0.00	0.00	0.00	214.16	1.50
24.00	4.00	0.50	8.00	0.02	71.39	22.00	0.50	44.00	0.10	392.63	464.01	2.00
25.00	11.00	0.50	22.00	0.05	196.31	3.00	0.50	6.00	0.01	53.54	249.85	1.00
26.00	9.00	0.50	18.00	0.04	160.62	0.00	0.50	0.00	0.00	0.00	160.62	1.00
27.00	5.00	0.50	10.00	0.02	89.23	0.00	0.50	0.00	0.00	0.00	89.23	2.00
28.00	0.00	0.50	0.00	0.00	0.00	17.00	0.25	68.00	0.15	606.79	606.79	1.00
29.00	0.00	0.50	0.00	0.00	0.00	28.00	0.50	56.00	0.12	499.71	499.71	0.01
30.00	0.00	0.50	0.00	0.00	0.00	18.00	0.50	36.00	0.08	321.24	321.24	1.00
31.00	2.00	0.50	4.00	0.01	35.69	19.00	0.50	38.00	0.08	339.09	374.78	1.00
32.00	17.00	0.50	34.00	0.07	303.39	0.00	0.50	0.00	0.00	0.00	303.39	0.70
33.00	16.00	0.50	32.00	0.07	285.55	0.00	0.50	0.00	0.00	0.00	285.55	0.50
34.00	0.00	0.50	0.00	0.00	0.00	16.00	0.50	32.00	0.07	285.55	285.55	0.50
35.00	11.00	0.50	22.00	0.05	196.31	9.00	0.50	18.00	0.04	160.62	356.93	4.00
36.00	6.00	0.50	12.00	0.03	107.08	0.00	0.50	0.00	0.00	0.00	107.08	0.50
37.00	6.00	0.50	12.00	0.03	107.08	0.00	0.50	0.00	0.00	0.00	107.08	1.00
38.00	12.00	0.50	24.00	0.05	214.16	0.00	0.50	0.00	0.00	0.00	214.16	2.00
39.00	6.00	0.50	12.00	0.03	107.08	0.00	0.50	0.00	0.00	0.00	107.08	3.00
40.00	7.00	0.50	14.00	0.03	124.93	9.00	0.50	18.00	0.04	160.62	285.55	0.20
41.00	4.00	0.50	8.00	0.02	71.39	0.00	0.50	0.00	0.00	0.00	71.39	2.00
42.00	22.00	0.50	44.00	0.10	392.63	0.00	0.50	0.00	0.00	0.00	392.63	0.25
43.00	13.00	0.50	26.00	0.06	232.01	0.00	0.50	0.00	0.00	0.00	232.01	0.50
44.00	6.00	0.50	12.00	0.03	107.08	0.00	0.50	0.00	0.00	0.00	107.08	1.00
45.00	9.00	0.50	18.00	0.04	160.62	0.00	0.50	0.00	0.00	0.00	160.62	3.00
46.00	10.00	0.50	20.00	0.04	178.47	10.00	0.50	20.00	0.04	178.47	356.93	0.50
47.00	5.00	0.50	10.00	0.02	89.23	0.00	0.50	0.00	0.00	0.00	89.23	3.00
48.00	9.00	0.50	18.00	0.04	160.62	0.00	0.50	0.00	0.00	0.00	160.62	1.00
49.00	4.00	0.50	8.00	0.02	71.39	0.00	0.50	0.00	0.00	0.00	71.39	1.00
50.00	9.00	1.00	9.00	0.02	80.31	0.00	0.50	0.00	0.00	0.00	80.31	1.00

aHerb.lbs/Ac	aWood.lbs/Ac	aTot.lbs/Ac	Prop. b	bHerb.lbs/Ac	bWood.lbs/Ac	bTot.lbs/Ac	Prop. c	cHerb.lbs/Ac	cWood.lbs/Ac	cTot.lbs/Ac	Prop. d	dHerb.lbs/Ac
481.86	0.00	481.86	2.00	321.24	0.00	321.24	3.00	481.86	0.00	481.86	7.00	1124.34
151.70	0.00	151.70	1.00	303.39	0.00	303.39	0.75	227.54	0.00	227.54	1.00	303.39
249.85	0.00	249.85	1.00	249.85	0.00	249.85	0.25	62.46	0.00	62.46	1.00	249.85
267.70	0.00	267.70	1.00	267.70	0.00	267.70	1.00	267.70	0.00	267.70	4.00	1070.80
214.16	17.85	232.01	1.00	214.16	17.85	232.01	5.00	1070.80	89.23	1160.03	1.00	214.16
285.55	0.00	285.55	2.00	285.55	0.00	285.55	3.00	428.32	0.00	428.32	1.00	142.77
240.93	0.00	240.93	0.50	160.62	0.00	160.62	0.25	80.31	0.00	80.31	0.25	80.31
214.16	0.00	214.16	2.00	142.77	0.00	142.77	3.00	214.16	0.00	214.16	5.00	356.93
62.46	80.31	142.77	1.50	187.39	240.93	428.32	0.50	62.46	80.31	142.77	1.00	124.93
124.93	89.23	214.16	1.00	124.93	89.23	214.16	0.25	31.23	22.31	53.54	3.00	374.78
124.93	142.77	267.70	1.00	124.93	142.77	267.70	1.00	124.93	142.77	267.70	1.00	124.93
33.91	0.00	33.91	0.25	84.77	0.00	84.77	0.30	101.73	0.00	101.73	0.75	254.31
89.23	0.00	89.23	2.00	356.93	0.00	356.93	1.00	178.47	0.00	178.47	1.00	178.47
107.08	35.69	142.77	1.00	107.08	35.69	142.77	1.00	107.08	35.69	142.77	2.00	214.16
71.39	249.85	321.24	0.25	17.85	62.46	80.31	1.00	71.39	249.85	321.24	1.00	71.39
16.06	32.12	48.19	1.00	160.62	321.24	481.86	0.20	32.12	64.25	96.37	1.00	160.62
26.77	303.39	330.16	0.10	2.68	30.34	33.02	0.25	6.69	75.85	82.54	2.00	53.54
107.08	0.00	107.08	3.00	160.62	0.00	160.62	2.00	107.08	0.00	107.08	3.00	160.62
142.77	499.71	642.48	1.00	35.69	124.93	160.62	2.00	71.39	249.85	321.24	2.00	71.39
80.31	0.00	80.31	0.15	24.09	0.00	24.09	0.50	80.31	0.00	80.31	0.20	32.12
214.16	0.00	214.16	2.00	107.08	0.00	107.08	3.00	160.62	0.00	160.62	1.00	53.54
160.62	107.08	267.70	1.00	160.62	107.08	267.70	2.00	321.24	214.16	535.40	1.00	160.62
321.24	0.00	321.24	2.00	428.32	0.00	428.32	0.50	107.08	0.00	107.08	1.00	214.16
142.77	785.25	928.03	1.00	71.39	392.63	464.01	1.00	71.39	392.63	464.01	2.00	142.77
196.31	53.54	249.85	1.00	196.31	53.54	249.85	0.25	49.08	13.38	62.46	0.50	98.16
160.62	0.00	160.62	1.00	160.62	0.00	160.62	0.10	16.06	0.00	16.06	1.00	160.62
178.47	0.00	178.47	2.00	178.47	0.00	178.47	1.00	89.23	0.00	89.23	2.00	178.47
0.00	606.79	606.79	1.00	0.00	606.79	606.79	1.00	0.00	606.79	606.79	0.25	0.00
0.00	5.00	5.00	0.10	0.00	49.97	49.97	1.50	0.00	749.56	749.56	0.05	0.00
0.00	321.24	321.24	1.00	0.00	321.24	321.24	3.00	0.00	963.72	963.72	1.00	0.00
35.69	339.09	374.78	1.00	35.69	339.09	374.78	2.00	71.39	678.17	749.56	0.50	17.85
212.38	0.00	212.38	3.00	910.18	0.00	910.18	0.10	30.34	0.00	30.34	0.25	75.85
142.77	0.00	142.77	1.00	285.55	0.00	285.55	0.25	71.39	0.00	71.39	1.00	285.55
0.00	142.77	142.77	1.00	0.00	285.55	285.55	1.00	0.00	285.55	285.55	0.50	0.00
785.25	642.48	1427.73	1.00	196.31	160.62	356.93	1.00	196.31	160.62	356.93	0.50	98.16
53.54	0.00	53.54	1.00	107.08	0.00	107.08	1.00	107.08	0.00	107.08	2.00	214.16
107.08	0.00	107.08	1.00	107.08	0.00	107.08	1.00	107.08	0.00	107.08	2.00	214.16
428.32	0.00	428.32	0.25	53.54	0.00	53.54	1.00	214.16	0.00	214.16	0.50	107.08
321.24	0.00	321.24	0.10	10.71	0.00	10.71	1.00	107.08	0.00	107.08	1.50	160.62
24.99	32.12	57.11	0.80	99.94	128.50	228.44	0.50	62.46	80.31	142.77	1.50	187.39
142.77	0.00	142.77	1.00	71.39	0.00	71.39	3.00	214.16	0.00	214.16	1.00	71.39
98.16	0.00	98.16	0.50	196.31	0.00	196.31	1.50	588.94	0.00	588.94	0.50	196.31
116.00	0.00	116.00	1.00	232.01	0.00	232.01	1.00	232.01	0.00	232.01	3.00	696.02
107.08	0.00	107.08	1.00	107.08	0.00	107.08	2.00	214.16	0.00	214.16	3.00	321.24
481.86	0.00	481.86	2.00	321.24	0.00	321.24	0.50	80.31	0.00	80.31	0.50	80.31
89.23	89.23	178.47	1.00	178.47	178.47	356.93	1.00	178.47	178.47	356.93	1.00	178.47
267.70	0.00	267.70	2.00	178.47	0.00	178.47	2.00	178.47	0.00	178.47	2.00	178.47
160.62	0.00	160.62	1.00	160.62	0.00	160.62	0.50	80.31	0.00	80.31	0.50	80.31
71.39	0.00	71.39	0.50	35.69	0.00	35.69	0.25	17.85	0.00	17.85	4.00	285.55
80.31	0.00	80.31	2.00	160.62	0.00	160.62	1.00	80.31	0.00	80.31	1.00	80.31

dWood.lbs/Ac	dTot.lbs/Ac	MeanHerb	StdHerb	MeanWood	StdWood	MeanTot	StdTot
0.00	1124.34	513.98	327.60	0.00	0.00	513.98	327.60
0.00	303.39	257.88	60.68	0.00	0.00	257.88	60.68
0.00	249.85	212.38	74.96	0.00	0.00	212.38	74.96
0.00	1070.80	428.32	321.24	0.00	0.00	428.32	321.24
17.85	232.01	385.49	342.66	32.12	28.55	417.61	371.21
0.00	142.77	256.99	106.84	0.00	0.00	256.99	106.84
0.00	80.31	176.68	93.66	0.00	0.00	176.68	93.66
0.00	356.93	199.88	94.71	0.00	0.00	199.88	94.71
160.62	285.55	112.43	46.74	144.56	60.10	256.99	106.84
267.70	642.48	156.16	115.18	111.54	82.27	267.70	197.45
142.77	267.70	124.93	0.00	142.77	0.00	267.70	0.00
0.00	254.31	162.76	114.79	0.00	0.00	162.76	114.79
0.00	178.47	196.31	87.43	0.00	0.00	196.31	87.43
71.39	285.55	128.50	42.83	42.83	14.28	171.33	57.11
249.85	321.24	60.68	21.42	212.38	74.96	273.05	96.37
321.24	481.86	106.01	67.08	212.02	134.15	318.03	201.23
606.79	660.33	23.29	18.11	263.95	205.23	287.24	223.34
0.00	160.62	117.79	40.07	0.00	0.00	117.79	40.07
249.85	321.24	71.39	39.10	249.85	136.85	321.24	175.95
0.00	32.12	75.49	48.61	0.00	0.00	75.49	48.61
0.00	53.54	117.79	62.44	0.00	0.00	117.79	62.44
107.08	267.70	192.74	64.25	128.50	42.83	321.24	107.08
0.00	214.16	256.99	109.20	0.00	0.00	256.99	109.20
785.25	928.03	99.94	34.97	549.68	192.35	649.62	227.32
26.77	124.93	147.23	62.08	40.15	16.93	187.39	79.01
0.00	160.62	131.71	57.82	0.00	0.00	131.71	57.82
0.00	178.47	142.77	43.72	0.00	0.00	142.77	43.72
151.70	151.70	0.00	0.00	515.77	182.04	515.77	182.04
24.99	24.99	0.00	0.00	265.84	303.75	265.84	303.75
321.24	321.24	0.00	0.00	449.74	256.99	449.74	256.99
169.54	187.39	39.26	17.49	373.00	166.12	412.26	183.60
0.00	75.85	306.43	317.10	0.00	0.00	306.43	317.10
0.00	285.55	214.16	90.30	0.00	0.00	214.16	90.30
142.77	142.77	0.00	0.00	228.44	69.94	228.44	69.94
80.31	178.47	294.47	248.32	240.93	203.17	535.40	451.49
0.00	214.16	117.79	52.46	0.00	0.00	117.79	52.46
0.00	214.16	128.50	42.83	0.00	0.00	128.50	42.83
0.00	107.08	203.45	128.50	0.00	0.00	203.45	128.50
0.00	160.62	141.35	102.13	0.00	0.00	141.35	102.13
240.93	428.32	99.94	55.31	128.50	71.11	228.44	126.42
0.00	71.39	114.22	57.11	0.00	0.00	114.22	57.11
0.00	196.31	294.47	175.59	0.00	0.00	294.47	175.59
0.00	696.02	301.61	202.26	0.00	0.00	301.61	202.26
0.00	321.24	171.33	85.66	0.00	0.00	171.33	85.66
0.00	80.31	224.87	155.73	0.00	0.00	224.87	155.73
178.47	356.93	160.62	35.69	160.62	35.69	321.24	71.39
0.00	178.47	178.47	56.44	0.00	0.00	178.47	56.44
0.00	80.31	128.50	39.34	0.00	0.00	128.50	39.34
0.00	285.55	96.37	96.83	0.00	0.00	96.37	96.83
0.00	80.31	96.37	32.12	0.00	0.00	96.37	32.12

Tot.Mean Herb=	Tot.Std. Herb=	Tot.Mean Woody=	Tot.Std. Woody=	Tot.Mean Total=	Tot.Std. Total=
163.37	*106.25*	*89.86*	*143.24*	*253.24*	*126.44*

BLACKHAWK: HUNTINGTON #4

ower Reveg.

PARIAN

8/13/94

REF. EAST	Wt.Herb.g/m2	Proportion	Tot.Herb.g/m	Tot.Herb.lbs/m2	Herb.lbs/Ac	Wt.Wood.g/m2	Proportion	Tot.Wood.g/m	Tot.Wood.lbs/m2	Wood.lbs/Ac	Tot.lbs/Ac	Prop. a
1.00	11.00	0.50	22.00	0.05	196.31	10.00	0.50	20.00	0.04	178.47	374.78	1.00
2.00	5.00	0.50	10.00	0.02	89.23	12.00	0.50	24.00	0.05	214.16	303.39	2.00
3.00	6.00	0.30	20.00	0.04	178.47	12.00	0.50	24.00	0.05	214.16	392.63	1.00
4.00	15.00	0.30	50.00	0.11	446.17	3.00	0.50	6.00	0.01	53.54	499.71	1.00
5.00	7.00	0.25	28.00	0.06	249.85	16.00	0.25	64.00	0.14	571.09	820.95	0.50
REF. WEST												
6.00	6.00	0.50	12.00	0.03	107.08	4.00	0.50	8.00	0.02	71.39	178.47	1.00
7.00	3.00	0.50	6.00	0.01	53.54	15.00	0.50	30.00	0.07	267.70	321.24	1.00
8.00	7.00	0.50	14.00	0.03	124.93	4.00	0.25	16.00	0.04	142.77	267.70	1.00
9.00	14.00	0.50	28.00	0.06	249.85	0.00	0.50	0.00	0.00	0.00	249.85	0.50
10.00	15.00	0.50	30.00	0.07	267.70	0.00	0.50	0.00	0.00	0.00	267.70	0.50
REVEG.												
1.00	6.00	0.50	12.00	0.03	107.08	13.00	0.50	26.00	0.06	232.01	339.09	3.00
2.00	2.00	0.50	4.00	0.01	35.69	19.00	0.25	76.00	0.17	678.17	713.87	2.00
3.00	12.00	0.25	48.00	0.11	428.32	9.00	0.50	18.00	0.04	160.62	588.94	1.00
4.00	6.00	0.50	12.00	0.03	107.08	10.00	0.50	20.00	0.04	178.47	285.55	1.00
5.00	15.00	0.50	30.00	0.07	267.70	0.00	0.50	0.00	0.00	0.00	267.70	0.75

aHerb.lbs/Ac	aWood.lbs/Ac	aTot.lbs/Ac	Prop. b	bHerb.lbs/Ac	bWood.lbs/Ac	bTot.lbs/Ac	Prop. c	cHerb.lbs/Ac	cWood.lbs/Ac	cTot.lbs/Ac	MeanHerb	StdHerb
196.31	178.47	374.78	1.00	196.31	178.47	374.78	0.50	98.16	89.23	187.39	171.77	42.50
178.47	428.32	606.79	1.00	89.23	214.16	303.39	1.00	89.23	214.16	303.39	111.54	38.64
178.47	214.16	392.63	1.00	178.47	214.16	392.63	1.00	178.47	214.16	392.63	178.47	0.00
446.17	53.54	499.71	2.00	892.33	107.08	999.41	1.00	446.17	53.54	499.71	557.71	193.20
124.93	285.55	410.47	1.00	249.85	571.09	820.95	0.50	124.93	285.55	410.47	187.39	62.46
107.08	71.39	178.47	1.00	107.08	71.39	178.47	1.00	107.08	71.39	178.47	107.08	0.00
53.54	267.70	321.24	2.00	107.08	535.40	642.48	1.60	85.66	428.32	513.98	74.96	22.72
124.93	142.77	267.70	1.00	124.93	142.77	267.70	1.00	124.93	142.77	267.70	124.93	0.00
124.93	0.00	124.93	0.50	124.93	0.00	124.93	1.00	249.85	0.00	249.85	187.39	62.46
133.85	0.00	133.85	0.50	133.85	0.00	133.85	0.50	133.85	0.00	133.85	167.31	57.96
											Tot.Mean Herb=	**Tot.Std. Herb=**
											186.85	***129.08***
321.24	696.02	1017.26	1.00	107.08	232.01	339.09	1.00	107.08	232.01	339.09	160.62	92.73
71.39	1356.35	1427.73	1.00	35.69	678.17	713.87	0.50	17.85	339.09	356.93	40.15	19.45
428.32	160.62	588.94	0.50	214.16	80.31	294.47	0.75	321.24	120.46	441.70	348.01	88.79
107.08	178.47	285.55	2.00	214.16	356.93	571.09	1.00	107.08	178.47	285.55	133.85	46.37
200.77	0.00	200.77	1.00	267.70	0.00	267.70	1.50	401.55	0.00	401.55	284.43	72.93
											Tot.Mean Herb=	**Tot.Std. Herb=**
											201.61	***121.40***

MeanWood	StdWood	MeanTot	StdTot
156.16	38.64	327.93	81.14
267.70	92.73	379.24	131.37
214.16	0.00	392.63	0.00
66.92	23.18	624.63	216.38
428.32	142.77	615.71	205.24
0.00			
71.39	0.00	178.47	0.00
374.78	113.58	449.74	136.29
142.77	0.00	267.70	0.00
0.00	0.00	187.39	62.46
0.00	0.00	167.31	57.96

Tot.Mean Woody=	Tot.Std. Woody=	Tot.Mean Total=	Tot.Std. Total=
156.56	***143.39***	***359.07***	***159.47***

348.01	200.92	508.63	293.66
762.94	369.51	803.10	388.96
130.50	33.29	478.51	122.08
223.08	77.28	356.93	123.65
0.00	0.00	284.43	72.93

t.Mean Woody=	Tot.Std. Woody=	Tot.Mean Total=	Tot.Std. Total=
279.13	***290.35***	***480.74***	***198.61***

ANNUAL

IMPOUNDMENT

CERTIFICATIONS

MOUNTAIN COAL COMPANY
1994 ANNUAL POND INSPECTION REPORT

POND: SED. POND

LOCATION: HUNT. CYN. NO. 4

IMPOUNDMENTS

(1) Stability	Slopes Stable. Vegetated.
(2) Structural Weakness/Erosion	None Noted.
(3) Potential Safety Hazards	None Noted.
(4) Depth of Impounded Water	N/A - Dry.
(5) Existing Storage Capacity	0.962 Ac. Ft.
(6) Monitoring Procedures	Quarterly Inspection. U.P.D.E.S. Discharge.

SEDIMENT PONDS ONLY

(7) Sediment Accumulation (Elev.)	89.1 (U)	77.3 (L)
(8) Sediment Cleanout Level (Elev.)	92.2 (U)	81.6 (L)
(9) Principle Spillway (Elev.)	93.2 (U)	84.6 (L)
(10) Emergency Spillway (Elev.)	98.0 (U)	84.6 (L)
(11) Existing Sediment Capacity (To Cleanout)	0.136 (U)	0.337 (L)

GENERAL

(12) Comments/Recommendations	Pond Cleaned 11/92. Re-Surveyed 5/93. No Discharge/Dry.

STATEMENT

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized in the State of Utah to inspect and certify the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meets or exceeds the minimum design requirements under all applicable federal, state and local requlations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

Dan W. Guy

(Signature)

11-10-94

(Date)

REGISTERED PROFESSIONAL ENGINEER
DAN W. GUY
No. 154168
STATE OF UTAH