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

October 10, 1985

CERTIFIED RETURN RECEIPT REQUESTED
P-592-429-516

Allen W. Smith
North American Equities, NV
1401 17th Street, Suite 1510
Denver, Colorado 80202

Dear Mr. Smith:

RE: Final Permit Approval, Blazon #1 Mine, INA/007/021, Folders No. 2 and 4, Carbon County, Utah

Please find enclosed two copies of the final State permit for the Blazon No. 1 Mine. Appended to the actual permit is the Technical Analysis (TA) and supporting documentation. Please examine the TA and associated stipulations and sign both copies of the attached permit, ACT/007/021, 10/85, on page 4 of that document. Upon signing, please keep one copy of the permit for your records and return one copy Certified Return Receipt Requested to the Divison at your earliest convenience.

In order for the permit to become valid and enforceable, NAE must submit the balance of the reclamation bond required for a total amount of $48,400. Upon receipt and approval of bond, the permit shall be valid.

Approval of the permit is based on the Final Closure and Reclamation Plan submitted to the Division in May 1985, and upon additional data sent to the Division through October 4, 1985. NAE must consolidate these data within 30 days of receipt of this letter. All conflicting, outdated and deleted information that is currently contained in the FCRP shall be removed and correct and current information as to those details found in the later submittals shall be inserted. The Division shall review the organization of the document within two weeks

of receipt of the consolidated data and advise NAE of any requisite organizational changes. Eight copies of the reorganized, approved FCRP must be submitted to DOGM within 60 days of receipt of this letter. Failure to submit reorganized FCRP's on the above schedules may jeopardize incremental reclamation bond release requests should they be made.

The Division appreciates your cooperation in regards to the timely response to our concerns and comment throughout the review period for the permit. Should you have any questions, please feel free to contact the Division.

Best regards,

Dianne R. Nielson

Dianne R. Nielson
Director

JRH:jvb
cc: K. May
L. Braxton
D. Cline
D. Darby
R. Harden
J. Helfrich
L. Kunzler
J. Leatherwood
S. Linner
1011R-45

NON-FEDERAL
(February 1985)

Permit Number INA/007/021

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, INA/007/021, is issued for the state of Utah by the Utah Division of Oil, Gas and Mining (DOGM) to:

North American Equities NV
1401 17th Street, Suite 1510
Denver, Colorado 80202

for the Blazon #1 Mine. North American Equities N. V. is the lessee of certain fee- owned parcels in Section 4, Range 7 East, Township 13 South. The permit is not valid until a performance bond is filed with the Division of Oil, Gas and Mining in the amount of $48,400, payable to the state of Utah, Division of Oil, Gas and Mining and the DOGM has received a copy of this permit signed and dated by the permittee.

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

Sec. 2 The permittee is authorized to conduct reclamation operations on the following described lands (as shown on ownership map) within the permit area at the Blazon #1 Mine situated in the state of Utah, Carbon County, and located:

Township 13 South, Range 7 East: Section 4, SW 1/4, portions of SE 1/4, NE 1/4, NW 1/4

This legal description is for the permit boundary (as shown on the permit area map) of the Blazon #1 mine. The permittee is authorized to conduct reclamation operations connected with mining on the foregoing described property subject to the conditions of the leases, the approved reclamation plan, including all conditions and all other applicable conditions, laws and regulations.

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

Sec. 4 The permit rights may not be transferred, assigned or sold without the approval of the Director, DOGM. Request for transfer, assignment or sale of permit rights must be done in accordance with applicable regulations including but not limited to UMC 788.17-.19.

Sec. 5 The permittee shall allow the authorized representative of the DOGM, including but not limited to inspectors, 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 UMC 840.12, and UMC 842.13; and,

B. be accompanied by private persons for the purpose of conducting an inspection in accordance with UMC 842.12, when the inspection is in response to an alleged violation reported by the private person.

Sec. 6 The permittee shall conduct reclamation operations 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 The permittee shall minimize any adverse impact to the environment or public health and safety resulting from noncompliance, including but not limited to:

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

B. immediate implementation of measures necessary to comply; and

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

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

Sec. 9 The lessee shall conduct its operations:

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

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

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

Sec. 11 The permittee shall comply with the provisions of UCA 26-11-1 et seq (Water Pollution Control) and UCA 26-13-1 et seq (Clean Air).

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

Sec. 13 If during the course of reclamation operations, previously unidentified cultural resources are discovered, the applicant shall ensure that the site(s) is (are) not disturbed and shall notify the State Regulatory Authority (RA). The state RA shall inform the operator of necessary actions required.

Sec. 14 APPEALS - The lessee shall have the right to appeal Division actions as provided under UMC 787.

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

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 the grantor and the permittee at any time to adjust to changed conditions or to correct an oversight. The grantor may amend these conditions at any time without the consent of the permittee in order to make them consistent with any new federal or state statutes and any new regulations.

LPB 10-9-85

THE STATE OF UTAH

By: Dianne R. Nielson

Date: October 10, 1985

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

Authorized Representative of
the Permittee

Date: _____

APPROVED AS TO FORM:

BY: Barbara W Roberts
Assistant Attorney General

Date: October 9, 1985

0487R

STIPULATIONS

North American Equities NV
Blazon #1 Mine
INA/007/021
Carbon County, Utah

October 8, 1985

Stipulation UMC 817.24-(1)-JSL

1. As is planned on the downslope side of the portal bench (Area E), Area C (Little Snyder drainage) must also be netted with a nylon netting to anchor the mulch and protect the soil material.

Stipulation 817.25-(1)-JSL

1. All nutrients recommended excluding 75% of the nitrogen requirement must be broadcast and ripped in at the time when the soil is being scarified. The remaining nitrogen must be applied the following spring after arboreal transplanting.

Stipulations 817.44-(1-2)-RS

1. The permittee shall submit complete and adequate designs for a stable channel through the mine waste development area within 15 days of notification by the regulatory authority regarding need for said designs. Division notification will be based upon an onsite inspection of the conditions existing at the channel following removal of the waste material. The designs must be approved and implemented within 30 days of said notification.

2. The permittee must submit complete and adequate plans for an energy dissapater and culvert headwall for disapation of the flow from the restored channel to culverts D and D' within 7 days of commencement of excavation for the installation of culvert D' and no longer than 20 days following completion of removal of the mine development waste pile phase of the reclamation process. The designs must be approved and implemented at the site within 30 days following the commencement of the excavation for culvert D'.

Stipulation UMC 817.53-(1)-DD

1. The applicant shall notify the Division of Oil, Gas and Mining about the status of the well transfer application by January 30, 1986. If the transfer of the well is not approved by the State Engineer, the applicant shall reclaim the well site within 30 days of notification.

Stipulation UMC 817.57-(1)-DC

The applicant must commit to planting the willow, red-oisier dogwood, and chokecherry (as identified in table 2, September 27, 1985 submittal) within 20 feet of the channel centerline prior to June 1, 1986.

Stipulation UMC 817.113-(1)-LK:

1. Shrub seeding will be done in the fall in conjunction with the seeding of the grasses and forbs (October).

NON-FEDERAL
(February 1985)

Permit Number INA/007/021

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

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LTR #10-9-85

THE STATE OF UTAH

By: Dianne R. Nielson

Date: October 10, 1985

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

Authorized Representative of
the Permittee

Date: _____

APPROVED AS TO FORM:

BY: Barbara W Roberts
Assistant Attorney General

Date: October 9, 1985

0487R

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North American Equities NV
Blazon #1 Mine
INA/007/021
Carbon County, Utah

October 8, 1985

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1. Shrub seeding will be done in the fall in conjunction with the seeding of the grasses and forbs (October).

FINDINGS DOCUMENT

NORTH AMERICAN EQUITIES NV
Blazon Mine
INA/007/021, Carbon County, Utah

October 8, 1985

1. The Final Closure and Reclamation Plan (FCRP) and the permit application are accurate and complete and all requirements of the Surface Mining Control and Reclamation Act (the "Act"), and the approved Utah State Program have been complied with (UMC 786.19[a]).

2. The applicant proposes acceptable practices for the reclamation of disturbed lands. The Division of Oil, Gas and Mining (DOGM) has determined that reclamation, as required by the Act, can be feasibly accomplished under the Final Closure and Reclamation Plan (See Technical Analysis (TA) Section UMC 817.111-.117) (UMC 786.19(b)).

3. An assessment of the probable cumulative impacts of all anticipated coal mining and reclamation activities in the general area on the hydrologic balance has been made by the DOGM. A determination has been made that the reclamation proposed under the application has been designed to prevent damage to the hydrologic balance in the permit area and associated off-site areas.

4. The proposed permit area is:

   A. Not included within an area designated unsuitable for underground coal mining operations (September 27, 1985 submittal p. II-3).

   B. Not within an area under study for designated lands unsuitable for underground coal mining operations (September 27, 1985 submittal p. II-3).

   C. Not on any lands subject to the prohibitions or limitations of 30 CFR 761.11[a] (national parks, etc.), 761.11[f] (public buildings, etc.) and 761.11[g] (cemeteries).

   D. Not within 100 feet of the outside right-of-way line of a public road (Map 3, September 27, 1985 submittal to Final Closure and Reclamation Plan).

E. Not within 300 feet of any occupied dwelling (Map 3, September 27, 1985 submittal)(UMC 786.19[d]).

5. DOGM's issuance of a permit is in compliance with the National Historic Preservation Act and implementing regulations (36 CFR 800) (UMC 786.19[e]). See letter from SHPO dated September 11, 1984 attached to TA.

6. The applicant has the legal right to enter and begin underground activities in the permit area through fee leases and surface owner concurrence (September 27, 1985 submittal, p. II-2) (UMC 786.19[f]). Since this permit is for reclamation only, there will be no underground activities in the permit area.

7. The applicant has shown that prior violations of applicable law and regulations have been corrected (personal communication, Tom Wright, DOGM Inspection and Enforcement Staff, September 19 1985) (UMC 786.19[g]).

8. North American Equities NV, has paid all fees required for the Abandoned Mine Reclamation Fund (personal communication, John Sender, OSM fee compliance Officer, September 16, 1985) (UMC 786.19[h]).

9. The applicant does not control and has not controlled mining operations with a demonstrated pattern of willful violations of the Act of such nature, duration and with such resulting irreparable damage to the environment as to indicate an intent not to comply with the provisions of the Act (personal communication, Ron Daniels, Coordinator of Mineral Research, September 19, 1985) (UMC 786.19[i]).

10. No underground coal mining activities will be performed under the permit since this permit is for reclamation only (UMC 786.19[j]). No other mines are operational or have been proposed for the immediate vicinity.

11. A detailed analysis of the proposed bond had been made. The bond estimate is $48,400. The DOGM has made appropriate adjustments to reflect costs which would be incurred by the State, if it was required to contract the final reclamation activities for the minesite. The bond shall be posted (UMC 786.19[k]) with DOGM prior to final permit issuance. NAE currently has on file with the Division, $30,538.75 in escrow at First Interstate Bank, #72-2711-00-3.

12. The Soil Conservation Service has determined that no prime farmland occurs in the permit area (September 27, 1985 submittal, Chapter VII, P. A-4). The regulatory authority has determined that no Alluvial Valley Floors occur on the proposed permit area (See TA Section UMC 822) (UMC 786.19[1]).

13. The proposed postmining land-use of the permit area has been approved by the Division of Oil, Gas and Mining (UMC 786.19[n]). The land surface in the permit area is private. The Division has approved an alternative land use of industrial/commercial for a portion of the permit area (see TA section UMC 817.133).

14. The regulatory authority has made all specific approvals required by the Act, and the approved State Program (UMC 786.19[n]).

15. The proposed reclamation will not affect the continued existence of any threatened or endangered species or result in the destruction or adverse modification of their critical habitats (September 27, 1985 submittal, pp. 817.97-2, 3) (UMC 786.19[o]). Since no Federal Surface or Coal is involved the U. S. Fish & Wildlife Service has made no comments relative to Threatened or Endangered Species on the permit area.

16. All procedures for public participation required by the Act, and the approved Utah State Program have been complied with (UMC 786.23(a)[ii]).

David W. Darby for Susan Linner 10-9-85
Permit Supervisor

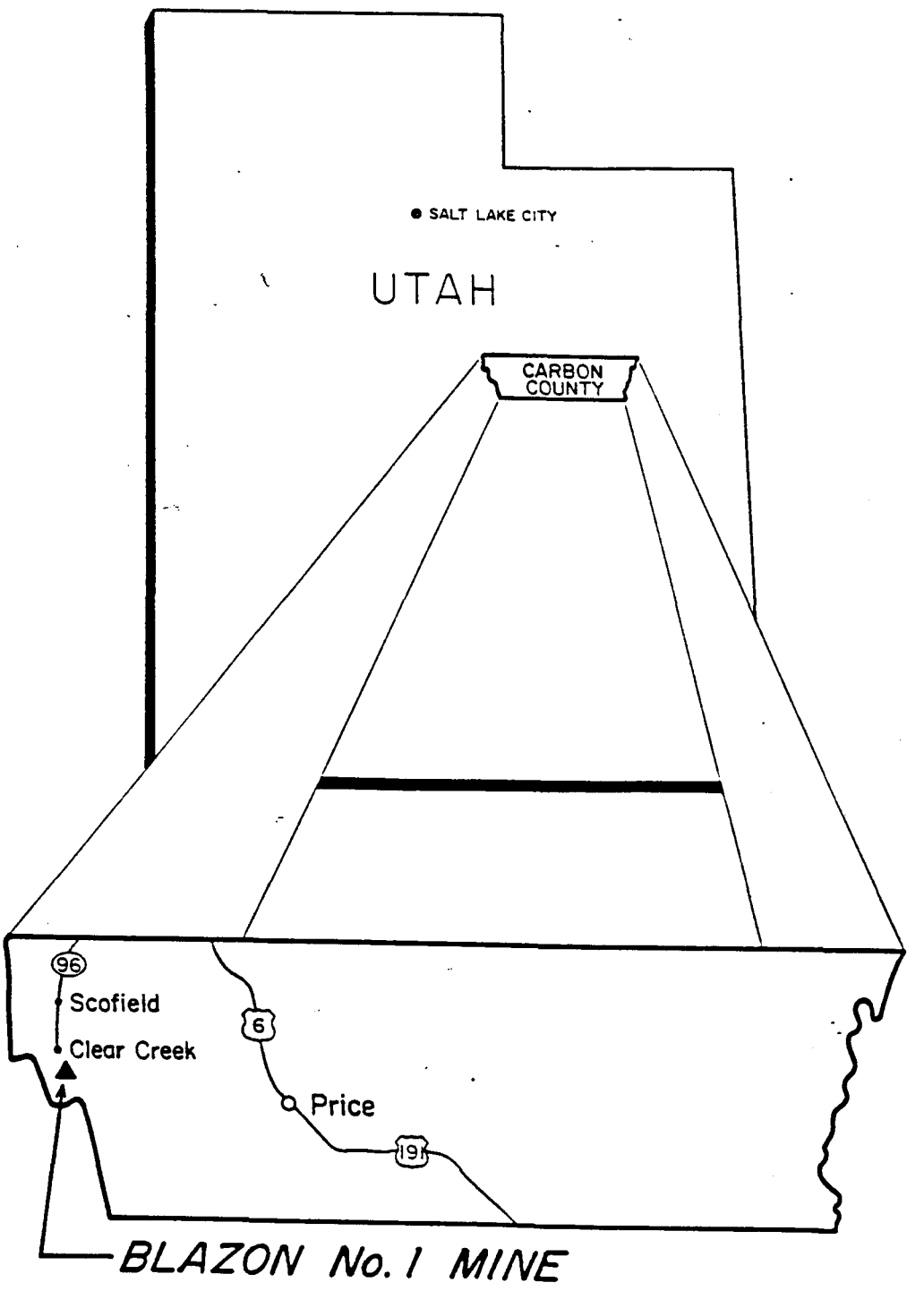
Kenneth E. May 10/9/85
Associate Director, Mining
Division of Oil, Gas and Mining

Lowell P Braxton 10-9-85
Administrator,
Mineral Resource Development
and Reclamation Program

Dianne R. Nielson 10-10-85
Director
Division of Oil Gas and Mining

Barbara McRae
Approved as to Form
Special Assistant Attorney General

jvb
0485R



GENERAL LOCATION

FIGURE 1

CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT

North American Equities NV
Blazon #1 Mine
INA/007/021
Carbon County, Utah

October 8, 1985

Introduction

The purpose of this report is to provide a Cumulative Hydrologic Impact Assessment (CHIA) for North American Equities, NV, Blazon #1 Mine located in Carbon County, Utah. A mine plan was originally submitted to the Utah Division of Oil, Gas and Mining (DOGM) by TOE Investment Company NV (now North American Equities NV) on April 10, 1979 and was approved under the States Interim Coal Program. On March 23, 1981, an application was submitted for a permit under Utah's Permanent Program regulations. The permit application was declared complete on April 9, 1984. On February 14, 1985, NAE notified DOGM that the mine would be permanently closed and reclaimed. On June 4, 1985, after NAE had notified DOGM of its intent to permanently close and reclaim the site, a Final Closure and Reclamation Plan was submitted. The plan was updated through October 4, 1985, when it was considered approveable by DOGM.

The CHIA therefore, encompasses the probable cumulative impacts of the developmental mining in the general area and whether the reclamation activities proposed under the Final Closure and Reclamation Plan have been designed to prevent damage to the hydrologic balance outside of the permit area. This report complies with federal legislation passed under the Surface Mining Control and Reclamation ACT (SMCRA) and subsequent Utah and federal regulatory programs under UMC 786.19(c) and 30CFR 784.14(f), respectively.

Existing Surface and Ground Water Resources

The existing surface and ground water resources at the Blazon No. 1 Mine are discussed in the CHIA in the Mud Creek Drainage Basin with respect to Valley Camp of Utah's Belina Mines which was prepared for the Office of Surface Mining (OSM) in May 1984 by Engineering Sciences, Denver, Colorado. Reference is herein made to that document for a description of the hydrology and geology of the area.

The surface water resources at the mine site consist of two perennial streams (Mud Creek and Snider Canyon) and an ephemeral drainage (Little Snider Canyon). These drainages meet in the mine plan area and convey runoff and snowmelt to Scofield Reservoir via Mud Creek.

Ground water resources in the Blackhawk Formation in the mine site area consist of localized perched aquifers associated with the interbedded siltstone and sandstone lenses. Some of these perched zones intersect the ground surface and discharge as seeps and springs. Within the mine plan area, five springs or seeps have been identified (Permit Application Package (PAP) Map 5, 5/84). Below the Blackhawk Formation, the Starpoint Sandstone has been identified as a potential regional aquifer (PAP, 5/84, p. 783.15-1 to 4). Presently, little information is available regarding water resources in the Starpoint Formation.

An alluvial aquifer associated with Mud Creek has been identified by completion of water supply well 91-1669 (PAP, Map 5, 5/84).

Potential Impacts

Based on information submitted and supported by the PAP submitted in 1981 and the Final Reclamation and Closure Plan submitted in 1985 potential impacts to the surface water regime in the area include two sources. One would be the increased sediment levels from the reclamation construction activities such as culvert removal, regrading and recontouring, and the spreading of topsoil. The second would be a possible reduction in perennial steam flow as a result of interception of water in the stream channel alluvium which could result from subsidence due to the developmental mining.

Potential impacts to the ground water regime, based on information submitted and supported in the PAP, are: 1) dewatering of the localized perched aquifers by intersection of perched zones and underground workings; 2)puncture of perching strata layers by roof bolting; and/or 3)subsidence fractures intersecting perched zones.

Findings

Given the existing surface water regime in the mine area, and given the existing measures which have been undertaken during mining operations and will be implemented during reclamation activities, the DOGM finds that no significant impacts will result from erosion and sediment production from the mine site. The rationale for this finding is as follows:

1. The applicant has proposed adequate plans for controlling surface runoff from the disturbed and reclaimed areas by constructing a sedimentation pond and runoff collection ditches below the disturbed facilities area. Portions of the reclaimed area that do not have runoff routed into the sedimentation pond will be treated using silt fence and strawbales.

2. Discharge from the sediment pond will be monitored to determine that water quality effluent limitations are met.

3. Drainage from Little Snider Canyon, an undisturbed drainage area above the mine site, is diverted under the disturbed pad area.

4. A water monitoring program on Mud Creek has been implemented in order to determine any changes in water quality or quantity due to mining and reclamation activities.

Given the existing geologic conditions of the site and the very limited amount of mining that has occurred at the site, the DOGM finds that mining at the site will have little or no impact on the groundwater resource. Reclamation activities have no potential impact to the ground water regime. The rationale for this finding is as follows:

1. The PAP proposed underground mining that would occur underneath Snider Canyon and Mud Creek. However, due to the cessation of mining operations in 1982 no mining actually occured beneath these two perennial drainages. Therefore, interruption of the stream flow due to subsidence will not occur.

2. The seeps and springs that are located on the permit area are not hydrologically connected to the developmental underground workings. Therefore, interruption of the springflow due to mining will not occur.

3. Reclamation construction activities will not occur at the source of any of the springs or seeps in the permit area. Therefore, interruption of the springflow due to reclamation construction activities will not occur.

The operational and reclamation design for the Blazon #1 Mine is herein determined to be consistent with preventing damage to the hydrologic balance outside the mine plan area.

APPENDIX

BOND ESTIMATE

NORTH AMERICAN EQUITIES
RECLAMATION BOND COST ESTIMATE
ACT/007/021
October 1985

SUMMARY SHEET

	DESCRIPTION	AMOUNT
I.	CONTRACTOR MOBILIZATION	$2,000.00
II.	REMOVAL OF STRUCTURES/FACILITIES	-0-
III.	REMOVAL OF FOOTINGS AND FOUNDATIONS	$621.17
IV.	REMOVAL OF CULVERTS	$783.52
V.	REMOVAL OF SIGN AND MARKERS	$44.80
VI.	RELOCATION OF MINE DEVELOPMENT WASTE	$14,138.94
VII.	MISCELLANEOUS EARTHWORK AND FINAL GRADING	$1,390.00
VIII.	TOPSOIL REPLACEMENT	$458.02
VIII.	EXCELSIOR BLANKET (NETTING)	$2,244.75
IX.	SEEDING AND PLANTING	$1,988.50
X.	MULCHING AND CRIMPING	$225.00
XI.	SCARIFICATION	$1,042.62
XII.	RIPRAP MATERIAL	$2,875.00
XIII.	MONITORING & MAINTENANCE - VEGETATION/SOIL/WATER/RILL&GULLIES	$14,612.38
	SUBTOTAL FOR RECLAMATION COSTS -	$ 42,424.70
	10% CONTINGENCY	$ 4,242.47
	TOTAL RECLAMATION BOND COST ESTIMATE IN 1985 DOLLARS	$ 46,667.17
	ESCALLATION TO 1986$ (3.76%) -	$ 1,754.69
	TOTAL RECLAMATION BOND COST ESTIMATE IN 1986$ -	$ 48,421.86
	AMOUNT ROUNDED TO THE NEAREST $100.00 -	$ 48,400.00

TOTAL BOND AMOUNT REQUIRED = $ 48,400.00

NORTH AMERICAN EQUITIES
RECLAMATION BOND COST ESTIMATE
ACT/007/021
October 1985

I. CONTRACTOR MOBILIZATION

Estimate - $2,000.00 $2,000.00

II. REMOVAL OF STRUCTURES/FACILITIES

The following structure/facilities as identified in the Blazon No. 1 Mine Final Closure and Reclamation Plan have/will be sold by NAE and removed from the Blazon No. 1 Mine at no cost to NAE.

Coal Loading Bin
Mine Fan
Electrical Substation
Storage Shed
Disesel Fuel Tank
Run-of-Mine Conveyors
Conveyor Structure

III. REMOVAL OF FOOTINGS AND FOUNDATIONS

The footings and foundations from the following structures will be broken up and disposed of in the portal backfill:

Coal Loading Bin
Underground Waste Chute
Conveyor Transfer Point
Conveyor Structure
Mine Fan
Diesel Fuel Tank

Parameters

100 Cu Yd of Material to be broken and Removed (loose)
Use 980 Cat Loader
Tram 1,200 feet to portal backfill
55 min per hour

Productivity - Haul

Cycle

Load	- 0.50 Minutes
Haul	- 2.74
Dump	- 1.00
Return	- 2.20
TOTAL CYCLE	- 6.44 Minutes

(55 min/hr)/(6.44 min/cy) x (5.25 cu yd/cy) = 44.8yd^3/hr

Cost - Haul

From Blue Book Rental Guide
(100 Cu Yd)/(44.8 Cu Ydhr) = 2.23 hr
(2.23 hr) x ($195.88/hr) = $436.81

Productivity - Breaking Foundations

Assume 85 Cu Yd / Hr.

Cost
(80 Cu Yd)/(85 Cu Yd/ Hr)x($195.88/hr)=$184.36

Sub Total $621.17

IV. REMOVAL OF CULVERTS

Culverts to be removed:
Culvets A, E, F and Portion of Culvert D

Parameters
980C Loader
Haul - 150 feet to portal backfill

Cost

Estimate 4 hours of loader time
(4hrs) x ($195.88/hr) = $783.52

Sub Total $783.52

V. REMOVAL OF SIGN AND MARKERS

Assume 2 hours labor @ $22.40/hr $44.80

VI. RELOCATION OF MINE DEVELOPMENT WASTE

Volume to be removed - 4,000 Cubic Yards of Mine Development Waste

Cover Materials - 2,859 Cubic Yards of Suitable Cover Materials

TOTAL MATERIAL MOVED - 6,859 CUBIC YARDS

Haul Parameters
Pushed to loader by D7 - Cat
Loaded on trucks by 980C loader
Hauled by two 12 yd trucks

Productivity - Truck

Truck Cycle Time

Load 3 cycles @ 0.52 min/cycle		1.56 Minutes
Haul 1,200 ft @ 8mph		1.70
Dump		0.50
Return assume 8mph		1.70
	Total	5.46 Minutes

(55min.hr)/(5.46min/cycle) = 10.07 cy/hr
Use two trucks = (2)(10.07cy/hr) = 20.14 cy/hr
(20.14cycle/hr)x(12cuyd/cycle) = 241.7 cuyd/hr
(6859cuyd)/(241.7cuyd/hr) = 28.4 hours

Productivity - Loader/Dozer
Assume to work same hours as truck

Cost - Blue Book Rental Rates

Trucks (2) -	$128.20/hr
Loader -	$195.88/hr
D7 Dozer -	$173.77/hr
Sub total -	$497.85/hr

Cost
($497.85/hr)x(28.4hrs) = $14,138.94

VII. MISCELLANEOUS EARTHWORK AND FINAL GRADING

Parameters
Stabilize base of Area A
Grading and rounding of areas B and F
Excavation for headwall and 42" culvert beside culvert D
Ditches berms and in area A
Repair and gregrading of access road to tranformer pole and water tanks
Other miscellaneous earthwork as may be required

Assume 16 hours work
Assume D7 dozer

Cost
(8hrs)x($173.77/hr) = $1,390.00

VIII. TOPSOIL REPLACEMENT

Parameters
290 Cubic Yards Stockpiled Topsoil Material
Average Haul Distance 750 feet.
Grade less than 4%
Use 980C Cat Loader
Use 2 - 12 cy Trucks
Spread with D7 Dozer

Productivity

Truck Cycle Time	
Load 3 cycles @ 0.52 min/cycle	1.56 minutes
Haul(loader) 750 ft @ 8mph	1.07
Dump	0.50
Return assume 8 mph	1.07
Total Cycle Time	4.20 Minutes

(55min/hr)/(4.20min/cy) = 13.1 cy/hr
Use two trucks = (2)x(13.1cy/hr) = 26.2 cy/hr
(26.2 cy/hr)x(12cuyd/cy) = 314.4 cuyd/hr
(290 cuyd)/(314.4 cuyd/hr) = 0.92 hr

Cost - Blue Book Rental Rates

Trucks (2) -	$128.20/hr
Loader -	$195.88/hr
D7 Dozer -	$173.77/hr
Sub Total -	$497.85/hr

Cost

($497.85/hr)x(0.92 hrs) = $458.02

VIII. EXCELSIOR BLANKET (NETTING)

Parameters
0.75 acres
Nylon fiber, degradable blanket

Materials Costs from Native Plants
Labor - $21/hr @ 25 hr/ac
Netting - $2,468/ac

(0.75ac)[($21/hr)(25hr/ac)+($2,468/ac)] = $2,244.75

IX. SEEDING AND PLANTING

Parameters
1.5 acres
Broadcast Methods
Seed Mix Costs from Native Plants(see attached)

Costs

Seed mix (1.5ac)x($844.67) =	$1,267.00	
Seedlings and Plantings(installed) =	$600.00	
Fertilizer ($25/ac)x1.5ac) =	37.50	
Application (4hrs)($21/hr) =	$84.00	
Total	$ 1,988.50	
		$1,988.50

X. MULCHING AND-CRIMPING

Parameters
1.5 acres
Cost - use $150.00/ac
(1.5 ac)x($150.00.ac) = $225.00

XI. SCARIFICATION

Parameters
1.50 acres
Use plow mounted behind D7
Assume will need to be done twice

Productivity
(3.0ac)x(0.5 ac/hr) = 6 hours

Cost
(6hrs)x($173.77/hr) = $1,042.62

XII. RIPRAP MATERIAL

Parameters
Riprap placed at outflow of culverts
Riprap placed on outflow of sediment ponds
Riprap placed in channel in location of removed culvert A

Assume 500 cubic yards riprap material

Cost
$5.75 per cubic yard
($5.75/cuyd)x(500cuyd) = $2,875.00

XIII. MONITORING & MAINTENANCE - VEGETATION/SOIL/WATER/RILL&GULLIES

Parameters
Two site visits per year for 10 years for vegetation and rill & gully monitoring
Assume reseeding over 25% of the Area
Soil Sampling - 6 samples
Water Sampling - Bianually for 10 years on B1 and B3
Monthly samples on Ditch B during 10th year
40 samples for biannual visits
12 samples for monthly visit
52 samples total

Costs

2 visits per year @ $500/visit(includes record keeping)
(2visits/yr)x($500.00/visit)x(10 yrs) = $10,000.00

Soil samples @ $26.50 per sample
(6 samples)x($26.50/sample) = $159.00

Reseeding/rill&gully maintenance - assume 25% of VIII and IX
(.25)[($1988.50)+($225.00)] = $553.38

Water samples @ $75.00 per sample
($75.00/sample)x(52 samples) = $3,900.00

Total for Monitoring and Maintenance -	$14,612.38
SUBTOTAL FOR RECLAMATION COSTS -	$ 42,424.70
10% CONTINGENCY	$ 4,242.47
TOTAL RECLAMATION BOND COST ESTIMATE IN 1985 DOLLARS	$ 46,667.17
ESCALLATION TO 1986$ (3.76%) -	$ 1,754.69
TOTAL RECLAMATION BOND COST ESTIMATE IN 1986$ -	$ 48,421.86
AMOUNT ROUNDED TO THE NEAREST $100.00 -	$ 48,400.00

TOTAL BOND AMOUNT REQUIRED = $ 48,400.00

SEED MIX FOR BLAZON NO 1 MINE

SPECIES	PLS/AC	$/LB PLS	$/ACRE
GRASSES			
Agropyron riparium	4	3.65	14.60
Agropyron trachycaulum	4	1.82	7.28
Bromus marginatus	5	2.40	12.00
Poa canbyi	3	1.81	5.43
Poa pratensis	0.25	1.30	0.33
FORBS			
Achillea millefolium	0.15	30.00	4.50
Hedysarum boreale	1	43.00	43.00
Linum lewisii	2	8.00	16.00
Medicago sativa var Ladak	1	1.40	1.40
Osmorhiza occidentalis	1	19.00	19.00
Melilotus officinalis	2	0.50	1.00
SHRUBS and TREES			
Acer glabrum	3	35.00	105.00
Amelanchier alnifolia	2.5	62.85	157.13
Artemisia tridentata ssp vaseyana	0.1	80.00	8.00
Mahonia repens	2	78.50	157.00
Pseudotsuga menziesii	1	35.00	35.00
Ribes cereum	1	35.00	35.00
Rosa woodsii	1.5	22.00	33.00
Sambucus caerulea	1	30.00	30.00
Symphoricarpos oreophilus	2	80.00	160.00

TOTAL COST PER ACRE FOR SEED MIXTURE - $ 844.67

TRANSPLANTS ALONG STREAM:

Salix spp.	150 cuttings
Cornus stolonifera	50 plants
Prunus virginiana	50 plants
Populus tremuloides	150 seedlings

TOTAL NUMBER OF PLANTS 400 PLANTS

Estimated cost per plant (installed) = $1.50 each

Total estimated costs for transplants
(400ea)x($1.50/ea) = $600.00

SUBTOTAL $600.00

FINAL TECHNICAL ANALYSIS

North American Equities NV
Blazon #1 Mine
INA/007/021
Carbon County, Utah
October 8, 1985

Introduction

The Blazon #1 Mine is an existing underground mine which has been in a suspended state of operations since January of 1982. North American Equities NV (NAE) of Denver, Colorado is the applicant. On February 14, 1985, Alan Smith of NAE notified the Division that the mine would be permanently closed and reclaimed. The permit area is located just south of the town of Clear Creek, Utah in Carbon County. The surface facilities are located in Section 4, Range 7 East, Township 14 South, Salt Lake Baseline and Meridian, which is within the boundary of the Scofield 7.5 minute U. S. Geological Survey topographic map.

Construction on the Blazon #1 Mine began on July 27, 1980. The mine produced coal from March 1981 through January 1982 when mining operations were suspended due to poor market conditions. The Applicant holds one County and one Fee lease. Surface ownership is private. The total disturbance for surface facilities is approximately 5 acres. Of this, 1.5 acres will be reclaimed and 3.5 acres will be transferred to an alternative postmining land use of industrial/commercial.

A mine plan was originally submitted to the Utah Division of Oil, Gas and Mining (DOGM) by TOE Investment Company (now North American Equities NV) on April 10, 1979. The application was approved on July 3, 1980, under the State's Interim Coal Program. On March 23, 1981, an application was submitted for a permit under Utah's Permanent Program regulations. An Apparent Completeness Review (ACR) was performed by DOGM and sent to North American Equities NV on March 25, 1983. The applicant responded with a Response to Apparent Completeness Review document on October 7, 1983. An additional Determination of Completeness Review was sent to North American Equities NV January 25, 1984. The applicant responded with a Response to Determination of Completeness Review on March 1, 1984. Additional information was requested from the applicant in March 16, and March 22, 1984 letters. The applicant responded in March 29 and April 3, 1984 letters. The permit application was declared complete on April 9, 1984.

On June 4, 1985, after NAE had notified DOGM of its intent to permanently close and reclaim the site, a Final Closure and Reclamation Plan was submitted. The plan was updated through October 4, 1985, when it was considered approvable by DOGM.

Existing Environment and Applicant's Proposal

The soils of the Blazon Mine Plan Area are loamy high mountain mollisols with occurrences of alfisols in steeper locations. These soils were derived from sandstones and shales of the Cretaceous Blackhawk Formation. A udic moisture regime with acryic temperature regime prevail. Average annual precipitation is between 22 and 25 inches, with average soil temperature between 36 - 37°F and the area can expect only about 55 to 60 frost free days per year.

Cryoboralls have formed in colluvium and residuum on steeper slopes under coniferous vegetation. As slopes decrease topic cryoboralls of similar origin but with higher presence of divalent cations are found. Finally, these grade into alluvium-derived cumulic mollisols along Mud Creek which have been influenced by quartzite as well. Further, seasonal flooding, and sediment deposition have yielded soils of high organic matter content.

Under vegetation the erosion hazard associated with these soils is moderate. These soils are generally well drained and range in texture from stony loams to fine loams. Nutrient supplying power is good and no soils related reclamation problems are anticipated.

The vegetation at the Blazon Mine consists of Mountain Brush, Spruce/Fir/Aspen and a narrow band of Riparian Meadow. Cover values for these types range between 50-60% and production between 1500 - 2500 pounds per acre. These vegetation communities provide quality habitat for a variety of wildlife including moose, elk, deer, cougar, black bear, snowshoe hare, ruffed grouse and blue grouse. The potential for revegetation in this area is generally considered good to excellent.

The surface water resources at the mine site consist of two perennial streams (Mud Creek and Snider Canyon) and an ephemeral drainage (Little Snider Canyon). These drainages meet in the mine plan area and convey runoff and snowmelt to Scofield Reservoir via Mud Creek.

Ground water resources in the Blackhawk Formation in the mine site area consist of localized perched aquifers associated with the interbedded siltstone and sandstone lenses. Some of these perched zones intersect the ground surface and discharge as seeps and springs. Within the mine plan area, five springs or seeps have been identified. Below the Blackhawk Formation, the Starpoint Sandstone has been identified as a potential regional aquifer. Presently, little information is available regarding water resources in the Starpoint Formation.

UMC 817.11 Signs and Markers - SCL

Existing Environment and Applicant's Proposal

Appropriate signs and markers have been placed in the Blazon #1 Mine permit area, as follows (September 27, 1985 submittal, pp. III-9, III-10).

An identification sign is posted at the access point to the permit area.

Perimeter markers are in place and easily visible.

Stream buffer zone signs have been placed along Mud Creek.

Topsoil storage piles are marked with appropriate signs.

NAE has committed to retain and maintain all appropriate signs and markers until after the release of all bonds for the permit area (September 10, 1985 submittal).

Compliance

The applicant is in compliance with this section.

Stipulation

None.

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

Existing Environment and Applicant's Proposal

The applicant has committed to permanently closing all portal entries by backfilling over the existing openings which are currently caved and collapsed to a distance of approximately 20 feet back from the original brow of the portals. Due to the present condition of the mine portals, no other alternative was considered to be safe or practical. The orientation and slope of the openings indicates that there will be no gravity discharge from the mine openings and that no hydrologic seal of the openings will be required(page 22-23 Reclamation Plan). Backfill material is to be compacted over the collapsed portal areas at a nominal slope of 2:1 or slightly greater as may be required to catch the brow formed by an overlay competent layer of sandstone(September 27, 1985 Response, pp. 25-28).

All exploration bore holes in the area have been previously, permanently sealed (August 8, 1985 submittal).

Compliance

Permanent cessation of mining excludes temporary sealing of portals and boreholes (UMC 817.14). An assessment of UMC 817.14 is not applicable.

The applicant has provided adequate plans for permanently sealing portals, exploration boreholes and transfer of water wells as required by UMC 817.13 and 817.15.

The applicant is in compliance with this section.

Stipulations

None.

UMC 817.21-.25 Topsoil - JSL

Existing Environment and Applicant's Proposal

The soil resources of the Blazon area are discussed in the September 27, 1985 submittal, Chapter 8 and pages 27-28 of the Final Closure and Reclamation Plan (FCRP) of May, 1985. The order three soil survey done by the Soil Conservation Service (SCS) is presented in the September 27, 1985 submittal. The previous volume of topsoil (1410 cubic yards) was inaccurately measured. The existing topsoil stockpile was surveyed September, 1985. The actual topsoil stockpile volume is 290 cubic yards. Volume calculations for topsoil are provided on pages 5, 56-60 of the September 27 submittal. In Addendum 3 of the September 27 submittal and pages 23-25 of the FCRP a plan for obtaining substitute soil material from the portal bench fill material is presented.

Soil residing in the existing stockpile will be utilized to provide a top dressing of six inches over cover materials on the area designated C (Little Snyder drainage). The portal bench area will receive substituted soil material from the outslope side of the portal bench up to a depth of four feet. Based on field evaluation, the substituted material will not impair vegetative reclamation. The downslope side of the portal bench and areas B and F will not receive topsoil. The residing substitute soil material in these area will be used for revegetation.

Soils of the Blazon Mine are B1G (fine loamy, mixed topic cryoboralfs), C1G (Fine-loamy, mixed topic cryoboralls) and D1B (fine-loamy, mixed cumulic cryoboralls) units which were formed from alluvium (near Mud Creek), colluvium and residuum. These soils are generally loamy and grade from alfisols on higher steeper sites to mollisols along creek beds. While quartzite is an additional

influence in the alluvial DIB unit, all soils are derived from sandstone and shale of the Cretaceous Blackhawk Formation. These soils are generally of moderate erosion hazard, fairly well drained and high in organic matter and nutrient supplying power. In Addendum 3 of the September 27 submittal the SCS determined that no prime farmland occurs and no alluvial valley floor is present.

Removal

Removal of 290 cubic yards of topsoil has been accomplished. A representative plan is provided in the September 27, 1985 submittal, for the removal of the previously stockpiled material.

Approximately 1300 cubic yards of overburden material from both the berm at the crest of the portal bench and the downslope side of the portal bench will be utilized as fill material to cover the underground development waste on the portal bench with a minimum of four feet of material. A backhoe will place this material on the underground development waste and a dozer will spread the material in one to two feet lifts and will work the slope to an approximate 2:1 slope. Tables 9, 10 and 11 of the FCRP address sampling guidelines, laboratory procedures and suitability criteria. The mine development waste data is in the September 27 submittal.

Compliance

This section is in compliance.

Storage

Topsoil is currently stored in three locations (see map 2 of the FCRP). Topsoil stored in these areas is adequately protected by a stand of vegetation.

Compliance

This section is in compliance.

Redistribution

The applicant provides a plan which details redistribution procedures on page 28 of the FCRP and page 5 of the September 27, 1985 submittal. A reference on page 27 (FCRP) states that scarification will be performed to eliminate compaction and enhance the contact between the regraded surface and the subsoil material.

Compliance

Compliance will be achieved by adherence of the operator to the following stipulation.

Stipulation UMC 817.24-(1)-JSL

1. As is planned on the downslope side of the portal bench (Area E), Area C (Little Snyder drainage) must also be netted with a nylon netting to anchor the mulch and protect the soil material.

Nutrients and Amendments

A commitment to sample at the time of redistribution appears on page 28 (FCRP). Further on page 29 (FCRP) a commitment to fertilize based on the guidelines of the regulatory authority at the time of reclamation is found. Recommendation for fertilization based on the original samples is found in the September 27, 1985 submittal.

Compliance

Compliance will be achieved by adherence of the operator to the following stipulation.

Stipulation 817.25-(1)-JSL

1. All nutrients recommended excluding 75% of the nitrogen requirement must be broadcast and ripped in at the time when the soil is being scarified. The remaining nitrogen must be applied the following spring after arboreal transplanting.

UMC 817.41 Hydrologic Balance: General Requirements - DD

Existing Environment and Applicant's Proposal

The applicant has submitted reclamation plans that minimize changes to the hydrologic balance from mining activities based on the post mining land use of the mine site. The plans are discussed in the following Technical Analysis (TA) sections and include: diverting surface water from reclaimed areas through treatment facilities, monitoring surface water quality and quantity above and below the minesite, providing protection against erosion to instream structures and the post mining industrial site by passing the 50 year-24 hour precipitation event in the perennial and ephemeral channels of the permit area, protecting the existing ground and surface water resources from previous mining and reclamation construction activities, and the final reclamation of runoff control structures. The reclamation plans also addresses standards and methods used in revegetation, controlling acid-forming and toxic-forming materials, gravity drainage of acid waters, sealing of portals and bore holes and controlling subsidence.

Compliance

The applicant has proposed designs utilizing control measures to minimize changes to the prevailing hydrologic balance in both the permit and adjacent areas. The following TA sections (UMC 817.42 - 817.57) describe specific details of the hydrologic measures that are proposed. The applicant will meet the general requirements for this section when the requirements or stipulations for sections UMC 817.42 - 817.57 are met.

Stipulations

None.

UMC 817.42 Water Quality Standards and Effluent Limitations - RS

Existing Environment and Applicant's Proposal

The applicant proposes to meet water quality standards and effluent limitations by treating drainage from all disturbed and reclaimed areas in approved treatment facilities prior to discharge off the permit area. Drainage from the existing surface facilities pad, a portion of the reclaimed areas, and the watershed immediately to the East of the site (a total of 11.4 acres) will be treated in a two-stage sedimentation pond system (areas A, B, D, and E, Map 3). Reclaimed areas for which drainage will be treated in the sediment pond system include the portal bench area, portal bench outslope, and the substation access road. Drainage from the reclaimed portal access road, the topsoil stockpile area, and the area of removed mine development waste (areas F and C, Map 3) will be treated using straw bales and silt fencing until reclamation has meet the success standards of 817.111-117 . The applicant has committed to maintaining these facilities during that period (Page 6, September 17, 1985 submittal).

The applicant has committed to retain the sediment ponds until the requirements of 817.42(a)(1) and 817.46(u) have been met (Page 23, September 17, 1985 submittal). At that time, the outlet works will be removed and the area regraded and reseeded. The ponds will then be released to the landowner as part of the postmining land use. There is no discharge from underground workings on the permit area.

Compliance

The applicant complies with the requirements of this section.

Stipulations

None.

UMC 817.43 Hydrologic Balance: Diversions and Conveyance of Overland Flow, Shallow Ground Water Flow, and Ephemeral Streams - DC

Existing Environment and Applicant's Proposal

The applicant has proposed to use diversions for conveying runoff from reclaimed areas into the sediment ponds, to convey runoff from the disturbed area designated as commercial and industrial as the post-mining land use into the sediment ponds, to convey runoff from the undisturbed drainage area of Little Snider Canyon under the existing pad into Mud Creek and to convey runoff from the undisturbed drainage area to the east of the main access road through three culverts into Mud Creek.

Runoff from reclaimed areas B, D, E and the transformer access road (Map 2) will be picked up in ditch B (item #20, Map 2) and diverted into the sedimentation ponds. The design for ditch B is based on a predicted peak flow value calculated using the SCS Curve Number Methodology, SCS 1974. Peak flow calculations indicate that ditch B will be required to pass 5.2 cubic feet per second (cfs) during the 10 year 24 hour precipitation event. The depth of flow and maximum velocity in the ditch have been calculated using the maximum and minimum slope sections. The maximum depth of the design flow has been calculated using Mannings Equation and results in a maximum depth of 0.42 feet with a maximum velocity of 8 feet per second (September 27, 1985 submittal, page 20). The proposed design of ditch B allows for 0.58 feet of freeboard and will require a D_{50} riprap size of 8 inches. Ditch B will be passed through an existing 24 inch culvert and enter into the upper sedimentation pond. The existing 24 inch culvert is capable of passing 11 cfs and is therefore over designed for capacity.

Runoff from area A (Map 2) will be conveyed using an earthen berm (Map 2, Item # 19) and diverted into the 24 inch culvert entering the upper sedimentation pond. The predicted peak flow was calculated using the SCS Curve Number Methodology, SCS 1974 and was determined to be 1.99 cfs. The existing 24 inch culvert is capable of passing 11 cfs. The runoff from area A and from ditch B is calculated to be approximately 7.2 cfs. Therefore the culvert is capable of passing the runoff from area A as well as the runoff being contributed by ditch B.

Runoff from the undisturbed drainage area of Little Snider Canyon will be diverted under the existing pad through a two culvert system and discharged into Mud Creek (September 27, 1985, submittal, page 9). The existing 24 inch culvert will be supplemented by the installation of a parallel 42 inch culvert. The design for the parellel culvert system is based on a predicted peak flow value

calculated using the SCS Curve Number Methodology, SCS 1974. Peak flow calculations indicate that the culvert system will be required to pass 63.0 cfs during the 50 year 24 hour precipitation event. (See UMC 817.44 for justification of the 50 year 24 hour event). The capacities for the culverts have been determined using the USBR nomographs for culverts under inlet control conditions. The existing 24 inch culvert is capable of passing 26 cfs with H/D=2. The 42 inch culvert next to the 24 inch culvert is capable of passing 103 cfs with H/D=2. The proposed parallel culvert system is therefore over designed and capable of passing the 50-year 24-hour precipitation event.

The second stage of analysis included calculation of the maximum expected velocity (or exit velocity for culverts) at the outlet of the culvert into Mud Creek. Calculations for discharge velocity from culvert D indicate that the velocity will be approximately 13 feet per second (September 27, 1985, submittal, page 11). A rip rap apron will be placed in Mud Creek to ensure that excess erosion does not occur due to the culvert discharge. Calculations for discharge velocity from the culvert indicate that riprap reinforcement in the area of the culvert discharge will be adequate if riprap with D_{50} of 24 inches is installed in the area (September 27, 1985, submittal, pages 9, 10 & 12).

Runoff from the undisturbed drainage area to the east of the main access road will be diverted through a ditch and culvert system and discharged into Mud Creek. Three existing 24 inch culverts currently divert runoff underneath the main access road and discharge into Mud Creek. The design for the ditch and culvert system is based on a predicted peak flow value calculated using the SCS Curve Number Methodology, SCS 1974. Peak flow calculations show that each culvert will be required to pass 1.04 cfs. The capacities of the 24 inch culverts are 11 cfs and are therefore over designed. The ditch between the culverts has been designed to pass 1.54 cfs with a depth of 0.7 ft. and a velocity of 3.15 feet per second. This design will allow for 0.3 feet of freeboard.

Compliance

The applicant complies with the requirements of this section.

Stipulation

None.

817.44 Stream Channel Diversion - RS

Existing Environment and Applicant's Proposal

Development of the minesite required that drainage from Little Snyder Canyon be routed beneath the mine development waste pile and the facilities pad. A 24 inch CMP (culvert D) is currently used to convey this intermittent drainage to Mud Creek (Map 2). The applicant proposes to restore the drainage in the area of the mine development waste pile to the original ground surface (Page 10, September 17, 1985 submittal). The 24 inch CMP will be removed in this area and the area will be regraded and reseeded. The channel capacity of the restored area will be equivalent to the channel immediately above the disturbed area . The applicant proposes to use approved sediment control facilities (silt fences and straw bales) to treat the drainage from this area during reclamation. The 24 inch CMP beneath the pad will be left in place at the request of the landowner as part of the approved postmining land use. A 42 inch CMP (culvert D') will be installed adjacent to the culvert in order to safely pass the 50 yr- 24 hr event (See 817.43 for details).

As a result of mine development, three culvert crossings were constructed across Mud Creek and the channel was modified in several areas. Culverts A, B, and C are 84 inch diameter corrugated steel pipes (Map 2, September 17, 1985 submittal). Culvert A will be removed and the channel adequately reconstructed and riprapped upon reclamation (Page 10 and Figure 3, September 17, 1985 submittal). The Mud Creek channel in this area has been designed to safely pass the 50 year -24 hour peak flow event. Culverts B and C will remain at the request of the landowner as part of the approved postmining land use. UMC 817.133(c)(5) states "Plans for the postmining land use shall have been designed under the general supervision of a registered professional engineer, or other appropriate professional, who will ensure that the plans conform to applicable accepted standards for adequate land stability, drainage, vegetative cover and aesthetic design appropriate for the postmining land use of the site" (emphasis added). Following conversations with the Carbon County Engineer (Art Baker), District 4 personnell from the Utah Department of Transportation (Frank Ulrich), the Road Engineer for the Manti-LaSal National Forest (Brent Barney) and the Regional Officer for the Utah Division of Wildlife Resources (Larry Dalton) on September 12, 1985, it was determined that a design event for the peak flow from the 50 year- 24 hour precipitation event would be appropriate for the type of road and crossings existing at the site. Based upon probability theory, it was found that there exists an 85 percent chance of structure success within an eight year period with this design event.

At the request of the Division, the Regional Officer for the

Division of Wildlife resources (Larry Dalton) visited the Blazon site to review the disturbed sections of Mud Creek and make recommendations concerning the restoration and enhancement of this section. Following his review, he concluded the channel had adequate existing habitats for aquatic life and his recommended prescription for the channel was to leave the channel as it exists and conduct no additional stream channel work (personnell communication, September. 19, 1985). The recommendation did include planting of riparian species along the channel to enhance the restoration of a riparian habitat (See comments under UMC 817.57).

The analysis for these culverts included calculation of the peak flow for this design event using the SCS, NEH-4 hydrograph methodology. The curve number was determined following sampling of vegetation cover and soil conditions on site on September 18, 1985 by the applicant's consultant accompanied by a Division biologist and two soil scientists. Using these peak flow values, it was determined that a headwall of 65 inches would be required to adequately pass the peak flow through the 84 inch culverts. A survey performed by Division hydrologists on September 17, 1985 confirmed that 71.40 and 65.4 inches of headwall exist at culverts B and C respectively, therefore the culverts are adequate to pass the 50 year -24 hour peak flow event. A headwall will not be required at culvert D and D' to adequately pass the calculated peak flow.

Compliance

The applicant has presented adequate plans to comply with the requirements of this section. However, the nature of the reclamation process of the mine waste disposal area channel (existing upper section of culvert D) dictates that the Division assess the stability and nature of the restored channel upon removal of the mine development wastes. If, upon site inspection following waste removal, the Division finds the channel to be inadequate in respect to capacity or stability, the applicant will be required to construct a stable channel through this area. Stipulation (1) will insure applicant compliance with the requirements of this section.

Until the mine development waste pile is removed and the channel restored to the original ground surface, it is difficult to determine the slope of this channel and the resultant expected velocities through this channel. Therefore, designs for the culvert headwall and energy dissipation basin at the entrance to culverts D and D'cannot be completed until this phase of reclamation construction has been finalized. The applicant must submit designs for the above items immediately upon determination of this slope. Stipulation (2) below will insure applicant compliance with this section.

Stipulations 817.44-(1-2)-RS

1. The permittee shall submit complete and adequate designs for a stable channel through the mine waste development area within 15 days of notification by the regulatory authority regarding need for said designs. Division notification will be based upon an onsite inspection of the conditions existing at the channel following removal of the waste material. The designs must be approved and implemented within 30 days of said notification.

2. The permittee must submit complete and adequate plans for an energy dissapater and culvert headwall for disapation of the flow from the restored channel to culverts D and D' within 7 days of commencement of excavation for the installation of culvert D' and no longer than 20 days following completion of removal of the mine development waste pile phase of the reclamation process. The designs must be approved and implemented at the site within 30 days following the commencement of the excavation for culvert D'.

UMC 817.45 Hydrologic Balance: Sediment Control Measures - RS

Existing Environment and Applicant's Proposal

All drainage from disturbed areas undergoing reclamation will be controlled and treated using sedimentation ponds, berms, diversions, silt fences and straw bales. Erosion of diversions and exit points of culverts will be minimized as adequate riprap and energy dissapators have been proposed for all of these structures (September 17, 1985 submittal). Regrading and reseeding of the reclaimed areas, when fully successful, will further minimize sediment contributions to the Mud Creek drainage system. Undisturbed drainage from the watershed east of diversion ditch B will be routed to the sedimentation pond system which has been adequately designed to include and treat this runoff.

Compliance

The applicant's proposal is sufficient to comply with the requirements of this section.

Stipulations

None required.

UMC 817.46 Hydrologic Balance: Sedimentation Ponds - RS

Existing Environment and Applicant's Proposal

Drainage from the Blazon minesite is currently treated using a two-cell sedimentation pond (items 17 and 18, Map 2). The ponds are connected in series via an 8 inch drop inlet spillway. A trapezoidal emergency spillway and drop inlet spillway are proposed for both pond embankments. The applicant proposes to retain the sediment ponds to treat drainage during the period of reclamation and vegetation reestablishment. Pursuant to subsection (u) of this regulation, the applicant has committed to leave the ponds onsite until the vegetation requirements of 817.111-117 are met and drainage entering the pond meets all State and Federal water quality requirements applicable at the time of bond release (page 23, September 17, 1985). The discharge structures will then be removed and the resulting disturbed area will be regraded and revegetated. The small basins will remain to act as catch basins for drainage from the industrial area approved as a postmining land use.

The ponds are designed to provide total containment of the 10 year -24 hour precipitation event resulting from 11.4 acres of the area (reclaimed areas, the lower bench area, and undisturbed drainage). An expected runoff volume of 0.38 Ac-ft. was calculated using the SCS curve number methodology (NEH-4, 1974) presented on page 43 of the September 17, 1985 submittal. The ponds have been designed to contain a sediment storage volume of 0.04 Ac-ft. which is equivalent to the expected yield of sediment from the area for a one year period (USLE method, page 42, September 17, 1985 submittal). The pond designs were certified by registered professional engineer #5672 for the State of Utah (page 41, September 17, 1985 submittal). Inlet and outlet structures were designed to provide the maximum flow length in each pond cell given the site constraints and therefore will minimize short circuitingg of the system.

The trapezoidal and principal drop inlet spillways have been designed to pass a 25 year-24 hour peak flow event of 7.2 cfs in combination (page 50, September 17, 1985 submittal). An elevation difference of one foot has been proposed between the principal and emergency spillways. The emergency spillway is designed to flow at a depth of 0.21 ft. for the design event. The top of the embankment is at an elevation of 1.5 ft. greater than the crest of the emergency spillway, therefore a freeboard of 1.29 ft. will ensure compliance with subsection (j) of this regulation.

The ponds, as they are currently constructed, have side slopes in excess of the requirements of subsection (m) of this regulation. The applicant has provided designs for adequate discharge structures to safely pass the flow over the upper and lower pond embankments (See comments under 817.47). Site constraints at the site (narrow

flood plain and steep hillslope) prevent construction of embankments of the required width. The ponds have been in place for a period of five years and vegetation on the embankments is well established. Continued visual monitoring of the embankments by the Division's technical and inspection staffs, including a site review in August, 1985, has revealed no evidence of erosion or instability for any embankment. It is the regulatory authority's opinion that the embankments are stable and reconstruction of the ponds would create a significant impact to the existing environment above the derived benefits of such construction.

Compliance

The applicant's proposal is sufficient to comply with the requirements of this regulation.

Stipulations

None.

UMC 817.47 Hydrologic Balance: Discharge Structures - RS

Existing Environment and Applicant's Proposal

Two sedimentation ponds, one site facility culvert, three road drainage culverts, and one diversion exist at the Blazon minesite. The applicant has proposed an energy dissapator consisting of riprap with a D_{50} of 15 inches for 10 feet and 6 inches for an additional 10 feet for each emergency spillway at the upper and lower sediment ponds (Page 52, September 17, 1985 submittal). This design is adequate to pass the 25 year- 24 hour precipitation event. Page 53 of that same submittal presents designs for an energy dissapater consisting of riprap in the Mud Creek channel with a D_{50} of 15 inches for the principal spillway of the sedimentation system. This same design will be implemented at the outlet of the drop inlet spillway between the upper pond and the lower pond. The applicant has proposed an energy dissapater consisting of riprap with a D_{50} of 24 inches for the outlet of culverts D and D' discharging into Mud Creek (Figure 2, page 12, September 17, 1985 submittal). Three road drainage culverts located along the west access road will discharge directly into Mud Creek which is riprapped with material (D_{50} of 29 inches, page 34, September 17, 1985 submittal) adequate to dissiapate the exit flow from the culverts.

Compliance

The applicant's proposal complies with the requirements of this section.

Stipulations

None required.

UMC 817.48 Hydrologic Balance: Acid-Forming and Toxic-Forming Materials - DD

Existing Environment and Applicant's Proposal

There will be no acid drainage from underground development waste or spoil. Table 3 page 783.14-8 of the Mine and Reclamation Plan shows the results of laboratory analyses on samples from mine development waste and material above and below the coal seam. The analyses indicate that acid waters will not form if precipitation or groundwater should come in contact with development waste.

The applicant has stated that all development waste will be covered with four (4) feet of cover (page 12, Reclamation Plan). No groundwater will come in contact with development waste and no toxic materials will form due to leaching.

Compliance

The information presented to the applicant is sufficient to determine that acid-forming and toxic-forming materials will not form or occur.

Stipulations

None.

UMC 817.49 Hydrologic Balance: Permanent or Temporary Impoundments - DC

Existing Environment and Applicant's Proposal

The applicant has proposed to leave the two sediment ponds at the lower end of the site until the water quality and revegetation standards are met. After release of the bond, the culvert spillways will be removed from the ponds. The spillway excavations will be regraded and revegetated following removal of the culverts (September 27, 1985 Submittal; page 23).

Compliance

The Division will consider the sediment ponds to be temporary impoundments because the culvert spillways will be removed after the water quality and revegetation standards are met. The embankments of the temporary impoundments have been revegetated and are stabilized and therefore meet the requirements of UMC 817.49(e). The applicant is in compliance with UMC 817.49.

Stipulation

None.

UMC 817.52 Hydrologic Balance: Surface and Ground Water Monitoring - DC

Existing Environment and Applicant's Proposal

The applicant has proposed to revise its existing monitoring program at the mine site in order to determine any changes in the hydrologic regime due to reclamation activities. Mud Creek will be monitored for quantity and quality at two sites, one above and one below the disturbed area. The sites to be monitored are B1 and B3 of the existing monitoring program. The applicant will monitor the two Mud Creek sites during June and September of each year for the duration of the bonding period (September 27, 1985 submittal, page 7).

The applicant has proposed to take one water sample weekly during the actual reclamation construction period. The sample will be taken in Mud Creek, downstream of the reclamation activity. The samples will be tested for Total Suspended Solids (TSS) and Settleable Solids (SS). The sample data will be submitted to the Division on a monthly basis (September 27, 1985 submittal; page 7).

The applicant has proposed to monitor the discharge into the sediment ponds in order to demonstrate the requirements of UMC 817.46(a) to reclaim the ponds. The applicant proposes to install and maintain a single stage sampler in the diversion conveying runoff from the reclaimed area into the sedimentation ponds. Samples will be collected monthly during the snow-free months for the last twelve months prior to bond release. The sampler will be installed to delineate between the 10 year, 24 hour and larger precipitation events. All water quality data will be submitted to the Division on a monthly basis (September 27, 1985 submittal, Page 7).

Additionally, the applicant proposes to monitor any discharge from the sedimentation ponds per the requirements of the NPDES permit (September 27, 1985, submittal; page 7).

Compliance

The applicants proposal to revise the existing monitoring plan will be adequate to determine the effects of the reclamation activities at the Blazon Mine site. Surface water monitoring will be conducted above and below the mine site in Mud Creek. Monitoring sites B-2, B-4, B-5 and B-6 of the existing monitoring program will

not need to be monitored in order to detect any impacts to the hydrologic balance. Site B-4 is located at the permit boundary approximately 250 feet upstream from site B-3. The watershed area above B-4 is undisturbed and underground mining activities did not occur beneath the site. Site B-3 will be adequate to provide water quantity and quality data above the disturbed area. Monitoring site B-2 is located at the mouth of Long Canyon where it enters Mud Creek. Monitoring of site B-2 will not be necessary because no surface disturbance or underground mining has occured in Snyder Canyon. Site B-6 is located in the town of Clear Creek on the Mud Creek drainage approximately 350 feet below Site B-1. All downstream impacts to the quantity and quality of Mud Creek below the reclamation activities will be monitored at Site B-1, immediately below the disturbed area.

The applicant has submitted groundwater monitoring data for six (6) springs within and adjacent to the mine plan area. An analysis of the spring data shows no adverse impacts has occured as the result of mining of the Blazon #1 Mine. An examination of the spring locations shows no hydrologic connection of the springs to the mine workings. Had mining continued in accordance with the original mine plan circumstances may have been different. Springs G1, G2, G3, G4, and G5 all lie at elevations above the coal seam and distal to the mined out area. These springs appear to issue from perched aquifers and all flow is less than a few gallons per minute. Spring G6 is thought to flow from abandoned Clear Creek Mine workings and is about a 1 and 1/2 miles from the Blazon #1 Mine. The well is completed in the old Clear Creek Mine workings and the water rights will be transferred to the post-mining landowner. Due to the very limited extent of actual underground mining activities, monitoring of the existing seeps and springs in the monitoring program will not be indicative of North American Equities activities at the mine site. It is the opinion of the regulatory authority that future monitoring of these sites is unnecessary since the mining of the Blazon Mine will have minimal effect on groundwater movement.

The parameters to be sampled and the frequency of sampling in Mud Creek is in compliance with the water monitoring guidelines that have been adopted by the Division.

The applicant's proposal to sample Mud Creek immediately downstream of the construction activities on a weekly schedule for TSS and SS is in compliance with the Division guidelines.

The applicant has proposed to install and maintain a single stage sampler in the disturbed diversion flowing into the sediment pond in order to monitor the discharge entering the pond. The location of the single stage sampler will allow NAE to monitor runoff from approximately 50% of the total reclaimed area. Due to

the change in post-mining land use of the pad area, the sampler will not be able to monitor all of the reclaimed area runoff. The Division will consider the portion of the reclaimed area that is monitored by the sampler as being representative of the total reclaimed area.

Stipulations

None.

UMC 817.53 Hydrologic Balance: Transfer of Wells - DD

Existing Environment and Applicant's Proposal

One (1) well exists on the property. The record of ownership is TOE Investment Company. Three (3) shares are allocated from the Price River Association for fire protection and dust control. The applicant plans to transfer the well and shares to Jack Otani, a local construction contractor.

Compliance

Transfer of the well and water shares are conditional on the State Engineers, Division of Water Rights, approval. The applicant has not stated secondary responsibility of reclaiming the well if Jack Otani abandons the site without reclaiming the well.

Stipulation UMC 817.53-(1)-DD

1. The applicant shall notify the Division of Oil, Gas and Mining about the status of the well transfer application by January 30, 1986. If the transfer of the well is not approved by the State Engineer, the applicant shall reclaim the well site within 30 days of notification.

UMC 817.54 Hydrologic Balance: Water Rights and Replacement - DD

Existing Environment and Applicant's Proposal

Mining of the Blazon #1 Mine has not and will not interrupt, diminish or otherwise effect the water supply of other water users or owners.

Compliance

Ground water, mining and subsidence information presented in the mine plan indicate that no water rights will be effected.

Stipulation

None.

UMC 817.56 Hydrologic Balance: Postmining Rehabilitation of Sedimentation Ponds, Diversions, Impoundments, and Treatment Facilities - DC

Existing Environment and Applicant's Proposal

The applicant has not proposed to construct any permanent impoundments or diversions. The applicant has committed to removing the culvert structures from the sedimentation ponds after the requirements of UMC 817.46(u) have been met and the bond has been released. The diversion structures will be incorporated into the commercial/industrial post mining land use and will therefore become the responsibility of the landowner.

Compliance

The applicant complies with the requirements of this section.

Stipulation

None.

UMC 817.57 Hydrologic Balance: Stream Buffer Zones - DC

Existing Environment and Applicant's Proposal

The applicant has proposed to remove culvert A (Map 2) from the channel of Mud Creek during reclamation activities. The culvert will be removed after reclamation work is completed on the portal area. Upon removal of the culvert the channel will be restored in a manner that will be consistent with the existing channel downstream. Depth and velocity calculations have been performed in order to demonstrate the channel capacity and stability (September 16, 1985 submittal, page 13).

The applicant has proposed to revegetate along the stream with willow, red-oisier dogwood and chokecherry in order to create a riparian zone. However, the width of this zone was not identified.

The applicant has proposed to retain and maintain stream buffer zone signs in areas where reclamation is within 100 feet of Mud Creek.

Compliance

Due to the size and space limitation of the mine site, the applicant was allowed to construct a pad adjacent to Mud Creek under the interim permit regulations. Drainage designs in Mud Creek and its tributaries in the permit area were implemented in order to

minimize impacts to the quality of the water in Mud Creek. Buffer zone markers were installed as specified in UMC 817.11. Reclamation activities will enhance the existing riparian zone area of Mud Creek in the permit area by removal of culvert A and the planting of vegetation along the stream. The reclamation activities along the stream will be consistent with the post-mining land use of the area. Upon acceptance of the following stipulation, the applicant will be in compliance with this section.

Stipulation UMC 817.57-(1)-DC

The applicant must commit to planting the willow, red-oisier dogwood, and chokecherry (as identified in table 2, September 27, 1985 submittal) within 20 feet of the channel centerline prior to June 1, 1986.

UMC 817.59 Coal Recovery - JRH

Existing Environment and Applicant's Proposal

Blazon Mine was implementing room and pillar mining methods using continuous miners and conveyors during operation. Due to unforseen operational problems, primarily dealing with faulting of the area and roof conditions, the mining operation has proven uneconomic. Additionally, poor market conditions and prices for coal have also proven uneconomic for the operation. During 1982, 1983 and 1984 NAE attempted to obtain a market for the coal or a potential buyer for the mining property. At the end of 1984, it became apparent to NAE that no potential buyer or market was available for the Blazon No. 1 Mine. At this point, NAE re-evaluated the situation and decided to abandon and reclaim the mining operations (Page 11, Reclamation Plan).

Compliance

Due to the limited amount of underground mining that occured on the site, it appears that much of the coal reserves within the permit area boundary for the Blazon No. 1 Mine are left intact and that at some future period in time, mining operations in the area could resume and those reserves could be recovered. For the near future, however, this does not appear likely and the decision by NAE to reclaim the site has no impact or consequence to the potential future reserve of the area and therefore is not considered a problem with respect to coal recovery and conservation of coal reserves.

Stipulations

None.

UMC 817.61-.68 Use of Explosives - JRH

Existing Environment and Applicant's Proposal

The applicant does not propose to incorporate the use of any explosives as part of the reclamation plan. During operations, the use of continuous miners eliminated the need for explosives.

Compliance

Applicant is in compliance with these sections.

Stipulations

None.

UMC 817.71-.74 Disposal of Underground Development Waste and Excess Spoil: General Requirements - JRH

Existing Environment and Applicant's Proposal

Mine development waste from the Blazon No. 1 Mine is stored in the fill structure located north of the portal bench at the mouth of Little Snider Canyon as shown on Map 2, Reclamation Plan. The estimated quantity of mine development waste in the storage area is approximately 4,000 cubic yards. Reclamation work will include utilizing the underground development waste material as backfill on the portal pad area . As much underground waste as possible will be disposed of on the portal bench in accordance with Figure 7 (September 27, 1985 Response), Typical Section Reclaimed Mine Bench. Earthwork calculations provided in the September 27, 1985 submittal indicate that there is approximately 4065 cubic yards capacity on the portal pad area utilizing 4 feet of cover over the coal spoils material. The actual number of yards which may be placed on the portal pad area will be primarily dependent of the amount of area of the portal pad which is cut into the hillside. Only cut areas of the portal pad shall be used to place excess spoils and no material shall be placed on the fill portion of the portal pad. Determination of the cut and fill areas of the portal pad will be made during reclamation construction utilizing the backhoe to find the cut/fill interface of the portal pad. Underground development waste material which cannot be disposed of on the mine bench will be hauled to the alternate waste disposal location shown on Map 2. Disposal of underground waste material will be in accordance with the pile geometry shown on Figure 7, September 27, 1985 submittal, Typical Section Reclaimed Mine Bench. The slopes of the final configuration shall not exceed 2h:1v. The area will be covered with a total of 4 feet combined topsoil and cover material, and will be contoured and revegetated (September 27, 1985 Submittal). Underground development waste will be compacted in

layers of 1 to 2 feet using a dozer or rubber tired loader. Cover for the spoils materials will consist of a total of 4 feet of suitable overburden and topsoil material(page 24, Final Closure and Reclamation Plan; Figure 7, September 27, 1985 Submittal).

Compliance

The original mine plan proposal called for the return of the excess material to the underground workings. This alternative was not considered practical due to the collapsed portals at the mine site and the additional cost and safety risk in attempting to do so.

NAE submitted a plan to remove the mine development waste to the abandoned Clear Creek Strip Pit for disposal. On Monday, September 9, 1985, during a meeting with NAE, OSM was asked to give a determination whether or not this material could be disposed of off site at the abandoned strip pit. It was OSM's opinion that the mine development waste could not be removed from the permit area regardless of the off site location. In light of these circumstances, the Division and NAE determined that the mine development waste would have to be stored and covered within the permit area boundary.

The disposal of the excess spoil and underground development waste material on the portal pad appears to be one of the few locations within the permit area where the spoil can be placed. No detailed survey of the location exists, but NAE considers the area to be sufficient for the disposal of the 4,000 cubic yards of underground development waste. In the event that the material does not all fit on the portal pad bench, the excess material will be placed at the base of the portal pad outslope and will be countoured and covered accordingly.

The applicant is in compliance with these sections.

Stipulations

None.

UMC 817.81-.88 Coal Processing Waste Banks: General Requirements - JRH

Existing Environment and Applicant's Proposal

No coal processing waste material was generated or stored within the permit area. No coal processing was done at the site.

Compliance

This section does not apply to the applicant and thus the applicant is in compliance.

Stipulations

None.

UMC 817.89 Disposal of Noncoal Wastes - JRH

Existing Environment and Applicant's Proposal

Noncoal waste material at the site primarily consists of structures and equipment which will be salvaged and removed from the site. Other materials such as culverts and scrap metal will be scrapped and salvaged. Footings and foundations for the structures will be removed, broken up, and buried on the portal pad beneath the underground development waste and overburden material (Reclamation Plan, pgs 19-20). Trash and rubbish found on the site and that which is generated during construction shall be removed and taken to a sanitary landfill.

Compliance

The applicant is in compliance with this section.

Stipulations

None.

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

Existing Environment and Applicant's Proposal

No coal processing waste dams or embankments currently exist or are planned for the permit area. Therefore, these sections are not applicable.

Compliance

The applicant is in compliance with these sections.

Stipulation

None.

UMC 817.95 Air Resources Protection

Existing Environment and Applicant's Proposal

NAE has committed to employ fugitive dust control measures during reclamation including, where necessary watering of roads and prompt revegetation of regraded areas (September 10, 1985 submittal).

Compliance

The applicant complies with this section.

Stipulation

None.

UMC 817.97 Protection of Fish, Wildlife and Related Environmental Values - LK

Existing Environment and Applicant's Proposal

Wildlife habitat at the Blazon #1 Mine is dominated by Mountain brush, mixed conifer and riparian vegetation types (section 783.19, Exhibit 6, September 27, 1985 submittal). During different seasons these vegetation types provide habitat for ca. 350 species of vertebrate wildlife, including 84 mammal species, 242 bird species, 18 reptile species, and 6 amphibian species. High priority summer range exists over the entire permit area for deer, elk, moose, cougar and black bear. Crucial-critical yearlong habitat for moose exists on the permit area within the riparian zones (September 27, 1985 submittal, Chapter 10). Crucial-critical habitat for snowshoe hare, ruffed grouse and blue grouse is described on page 3. Golden eagles are common summer residents, however, Utah Division of Wildlife Resources (DWR) indicates nesting is not expected on the permit area (September 27, 1985 submittal, Chapter 10 Appendix).

No threatened on endangered species of plants or animals exist on the permit area (DWR; September 27, 1985 submittal, Chapter 10 and Section 817.97).

Existing facilities have disturbed ca. 5 acres of crucial-critical moose habitat. No high priority summer ranges have been or will be disturbed (September 27, 1985 submittal, Section 817.97). The applicant has proposed a post mining landuse change to industrial use on 3.5 acres, leaving only 1.5 acres to be revegetated. The seed mix for reclamation (FCRP, Table 1,) was developed to enhance and/or restore pre-mine wildlife habitat conditions.

Compliance

Since the Blazon #1 mine is in a final reclamation phase, no additional disturbance of surface areas or disruption of wildlife will occur. Approximately 3.5 acres will not be reclaimed to wildlife habitat. However, the remaining area will be enhanced for

wildlife use. Those structures remaining as part of the changed land use do not pose a hazard to wildlife. Existing power lines were surveyed by the U. S. Fish and Wildlife Service and are not posing a hazard to raptors (USFWS letter to DOGM of October 9, 1981).

The wildlife protection and mitigation plans discussed above are acceptable. The applicant is in compliance with this section.

Stipulations:

None

UMC 817.99 Slides and Other Damage - JRH

Existing Environment and Applicant's Proposal

NAE will notify the Division by the fastest available means of any slides in the reclaimed area which may have a potential adverse effect on public property, health, safety or the environment (September 27, 1985 Submittal).

Compliance

The applicant commits to notification of the Division in the event of a slide and is in compliance with this section.

Stipulations

None.

UMC 817.100 Contemporaneous Reclamation - JRH

Existing Environment and Applicant's Proposal

Since the mine is permanently closed, all reclamation performed will be final as per the plan submitted under UMC 784.13(b)(5) (see section UMC 817.111-.117 of this TA). Reclamation will commence at the first favorable time for revegetation after approval (this fall).

Compliance

The site will be reclaimed as contemporaneous as possible. Therefore, the applicant is in compliance with this section.

Stipulations:

None

UMC 817.101 Backfilling and Grading - JRH, JSL

Existing Environment and Applicant's Proposal

Backfilling and grading of the site will consist primarily of backfill used to fill the portal pad area, coverage of the underground waste development material with overburden material, and the borrow and spreading of topsoil material.

The upper portion of the portal outslope will be pulled back by backhoe and left in a roughened condition to approximately 1.6 horizontal to 1 vertical. Underground development waste will be backfilled along the highwall and then covered with 4 feet of overburden material. The overburden material will be sampled and amended for use as substitute topsoil material. The crest and toe of this area will blend into the overall slope. The middle part of the portal outslope will be left as it is now existing. Necessary reclamation functions will be performed, e.g. fertilizing, seeding mulching, and netting for erosion control. On the lower portion of the portal outslope where it has been over steepened by cutting, these areas will be dressed and graded with a dozer to a 1.6:1 slope as shown on Figure 9 of the September 27, 1985 submittal, Typical Section Lower Bench Toe Stabilization. A typical section of the upper portal bench area earthwork can be found as shown on Figure 7, Typical Section Reclaimed Mine Bench.

Other backfilling and grading work on the site will include and involve the grading of the topsoil borrow area, those roads which are to be reclaimed, grading to restore the lower reach of Little Snider Canyon drainage down to the lower portal pad area, and general grading to provide drainage and erosion control both during reclamation construction and monitoring and maintenance of the site. Refer to Maps 2 and 3 of the Reclamation Plan.

The topography of the Blazon Mine plan area is quite varied from steep (65%) slopes in the vicinity of the portal to nearly level areas near the stream. The postmining contours and cross-sections are presented on Maps 3, 4, and 5 of the FCRP. The postmining topography will generally be 1.4:1 to 2:1. An account of the backfilling and grading plan is found on page 25-26 (FCRP). The first operation will be the controlled placement of underground development waste. Compaction of these materials will then be preformed by a dozer. Following placement of the underground development waste approximately 1300 cubic yards of subsoil/substitute material will be reapplied using a dozer.

The mid-area of the portal outslope will be left as it is now existing. The lower portion of the outslope will be dressed and graded with a dozer to a 1.6:1 slope. The lower pad will be left as is, due to the change of the final land use. The Typical Cross

Section-Exhibit in the FCRP shows a generalized profile. A contingency plan (Addendum 2) and a commitment (page 25 FCRP) for reclaiming rills and gullies provide a list of measure to address such erosion.

Compliance

The applicant proposes adequate backfilling and grading operations for the disturbed area. The applicant included calculations insuring a minimum static safety factor of 1.5.

The applicant will reduce man-made highwalls to the extent as is safely possible. The remaining highwall will be visually similar to other cliffs and outcrop formations in the region.

The applicant is in compliance with this section.

Stipulations

None.

UMC 817.103 Backfilling and Grading: Covering Coal and Acid- and Toxic-Forming Materials - JRH

Existing Environment and Applicant's Proposal

Grading and backfilling will be completed such that any coal seams and underground development waste will be covered with approximately 4 feet of overburden and topsoil material(page 24, Final Closure and Reclamation Plan).

Compliance

The applicant has committed to covering the coal refuse pile with four feet of nontoxic material, therefore, the applicant is in compliance.

Stipulations

None.

UMC 817.106 Regrading or Stabilizing Rills and Gullies - JRH

Existing Environment and Applicant's Proposal

On the reseeded areas, NAE will work with DOGM to stabilize and seed any areas where rills and gullies deeper than nine inches form (September 27, 1985 submittal, p. 28).

Compliance

The applicant's proposal adequately addresses the requirements of this section.

Stipulations

None.

UMC 817.111-.117 Revegetation - LK

Existing Environment and Applicant's Proposal

A detailed vegetation study was completed at the Blazon Mine in September 1983. Detailed descriptions of the vegetation are included in the September 27, 1985 submittal, Exhibit 6.

Spruce/Fir/Aspen, Mixed Mountain Shrub, and Riparian Meadow vegetation types occur on the permit area. The Spruce/Fir/Aspen type is described as a serial stage between the Aspen and the Spruce/Fir types. A reference area was selected in the Spruce/Fir/Aspen type since this type represents two-thirds of the mine related disturbance. This type is characterized by a co-dominant over story of Douglas fir and aspen and an understory dominated by snowberry, nodding brome and wild strawberry. Vegetation cover is reported as 50.12%. Total woody plant density is reported as 2677 stems per acre (1210 shrubs / 1467 trees) (Exhibit 6, September 27 submittal). The SCS reported annual production for this type at 1500-2200 pounds/acre (See SCS letter dated February 27, 1984 in September 27 submittal).

Revegetation plans are detailed on pages 29-33 of the FCRP, in the September 27, 1985 submittal pp. 1-4 and the October 4, 1985 submittal. Straw mulch will be applied to all seeded areas at a rate of 4000 pounds/acre and anchored by crimping on all areas except area E (see Reclamation Map) where a nylon netting will be used.

One concern is apparent from the applicant's September 27, 1985 Response regarding the shrub seeding. On page one, the applicant states that woody plants will be seeded in the spring, yet on page 3, he states woody species will be seeded late September or October. The preferred timing is October for the greatest success in shrub establishment, therefore, this will be stipulated.

Monitoring of reclaimed areas will consist of a reconnaissance survey the first year, sampling for cover and density on years 2,3 & 5, and sampling cover, density and productivity during years 9 & 10 for bond release. The reference area will also be sampled for cover, density and productivity during years 9 & 10 (September 27 submittal, page 4).

Compliance

UMC 817.111 Revegetation: General Requirements

The revegetation plans have been designed to encourage a permanent diverse vegetative cover which will restore or enhance the pre-mine land use of wildlife habitat. The applicant is in compliance with this section.

UMC 817.112 Revegetation: Use of Introduced Species

All species utilized for reclamation are native species with the exception of Medicago sativa (alfalfa), Melilotus officinalis (yellow sweetclover) and Poa pratensis (Kentucky bluegrass). Alfalfa and yellow sweetclover are being used because of their erosion control and nitrogen fixing properties. Kentucky bluegrass also establishes easily and is part of the natural vegetation surrounding the mine site. These species are not noxious or poisonous and are compatible with the plant and animal species of the region. The applicant is in compliance with this section.

UMC 817.113 Revegetation: Timing

Final seeding for grasses and forbs will be done during the first favorable planting season following regrading. However, the applicant has not positively identified the timing for shrub seeding. By accepting the stipulation below, the applicant will comply with this section.

UMC 817.114 Revegetation: Mulching and Other Soil Stabilizing Practices.

All revegetated areas will be mulched with 4000 pounds/acre of straw mulch. Mulch will be anchored to the soil by crimping or nylon netting. The applicant is in compliance with this section.

UMC 817.116 -.117 Revegetation: Standards for Success

Approximately 3.5 acres will not be revegetated due to the proposed landuse change. This land use will be implemented upon completion of reclamation. The applicant will use the Spruce/Fir/Aspen reference area for the revegetation success standard for the 1.5 acres to be revegetated (September 27, 1985 submittal, p. 3).

Concerns were expressed that due to the changed land use, the reference area may not be representative of the reclaimed area (the reclaimed area will have steeper slopes than the reference area). If monitoring of the reclaimed area reveals significant differences

in cover and productivity between the reclaimed area and the reference area, an attempt to relocate the reference area adjacent to the reclaimed area (where slope is similar) will be made.

The monitoring plan outlined above is acceptable to the Division. Final success will be determined by comparing data on cover, productivity and shrub density taken at the end of the liability period with a reference area approved by the Division. Comparisons will be made at the appropriate statistical levels as outlined in UMC 817.116-.117.

Stipulation UMC 817.113-(1)-LK:

1. Shrub seeding will be done in the fall in conjunction with the seeding of the grasses and forbs (October).

UMC 817.121-.126 Subsidence Control: General Requirements - DD

Existing Environment and Applicant's Proposal

No material damage is expected from subsidence. All mining in the Blazon #1 Mine was room and pillar. The area of mining is shown on Map 5 of the Reclamation Plan. No pillars were pulled (personal communication wiht Joe Harvey, September 16, 1985), all mining was developmental. Longterm subsidence is expected, but no adverse effects will occur. The seam is approximately 4 to 5 feet thick. Since no pillars were pulled, subsidence will take place gradually over several years. Subsidence will not affect the stream of Clear Creek, a perennial stream, or buildings, since they are lower in elevation than the coal seam. Springs will not be affected since they are a great distance from the mined out area.

Compliance

The applicant has supplied sufficient information to describe the potential for subsidence and the probable effects from subsidence for post mining land use. The post mining land use area over the mine workings is supported by pillars and is relatively small. The areas where subsidence is most likely to occur is along steeply forested slopes. If subsidence should occur at rates greater than expected and cracks and escarpments should form (worst case secenerio), the effects would still be minimal.

If subsidence occurs, it should be gradual and ground water should not be interrupted or affected. The Blackhawk Formation encompasses the entire mine plan area. This formation is a poor aquifer and consists of fine grained sandstones and shales. Springs in the area flow only a few gallons per minute. Subsidence in this area should not cause inter migration of large quantities of water.

The applicant complies with this section.

Stipulations

None.

UMC 817.131-.132 Cessation of Operations - SCL

Existing Environment and Applicant's Proposal

Operations at the Blazon #1 Mine were temporarily suspended in January of 1982, due to poor market conditions.

The operator notified the Division of the number of acres disturbed, and the horizontal and vertical extent of sub-surface workings prior to cessation; of the reclamation activities accomplished, including any backfilling, regrading, revegetation and underground opening closures; and of environmental monitoring and water treatment activities that would continue during the temporary cessation. On February 14, 1985 Alan Smith of NAE notified DOGM that the mine would be permanently closed and reclaimed (Final Closure and Reclamation Plan p. 11, Exhibit 1). The applicant subsequently submitted a Final Closure and Reclamation Plan which adequately addresses removal of appropriate structures and facilities and permanent reclamation of appropriate affected areas.

Compliance

The applicant complies with these sections.

Stipulations

None.

UMC 817.133 Post-Mining Land Use

Existing Environment and Applicant's Proposal

Prior to mining, the permit area was undeveloped land used for wildlife habitat and limited grazing. The applicant has proposed a change in land use for 3.5 acres to one of industrial use (the site is to be used as a staging area for a local construction company). One and a half acres will be reclaimed to pre-mining conditions of wildlife habitat.

Compliance

The reclamation plan (see section UMC 817.111-.117 of this TA) will restore or enhance the pre-mine conditions for wildlife habitat on the 1.5 acres to be revegetated. The applicant has provided the following information as per UMC 817.133(c) to justify their proposed land use change:

1. The Carbon County Zoning Commission submitted a letter to the Division dated June 20, 1985 supporting the proposed land use. Since the land is privately owned no other agencies have authority for land use policies and plans (UMC 817.133(c)(1));

2. Specific plans were submitted which demonstrates the feasibility of the proposed land use including letters from the owner of record requesting certain structures be left for his use (FCRP, pages 12-16 and Exhibit #2) (UMC 817.133(c)(2));

3. Since no public facilities exist, there is no need for provisions to ensure public facilities (UMC 817.133(c)(3));

4. Plans were designed under the general supervision of a registered professional engineer and conform to accepted standards for adequate land stability, drainage, vegetative cover and aesthetic design (verified by Randy Harden, DOGM Reclamation Engineer) (UMC 817.133(c)(5));

5. The proposed use will neither present actual or probable hazard to public health or safety nor pose any actual or probable threat of water flow diminution or pollution (see section UMC 817.42 of this TA) (UMC 817.133(c)(6));

6. The use will not involve unreasonable delays in reclamation (see section UMC 817.111-.117 of this TA) (UMC 817.133(c)(7));

7. Measures to prevent or mitigate adverse effects on fish, wildlife, and related environmental values have been approved by the Division. The Utah Division of Wildlife Resources has concurred with these plans (Personal Communication, Mr. Larry Dalton, Resource Analyst, September 19, 1985). (See section UMC 817.97 of this TA) (UMC 817.133(c)(8));

8. Since the proposed land use change is not croplands, UMC 817.133(c)(9) does not apply.

The applicant has met the requirements of UMC 817.133(c) for the proposed change in land use and has provided a letter (dated May 17, 1985) from the landowner of record concurring with the proposed land use change as per UMC 784.15(b) (FCRP, Exhibit 2). The applicant is in compliance with this section.

UMC 817.150-.176 Roads - JRH

Existing Environment and Applicant's Proposal

The main access/haulage road is a Class I road and was constructed from Clear Creek to the mine site and was rigidly maintained during active operation since it is the only access road into the property. This haul road will be utilized as part of the post mining land use for access to the site. The iron gate at the entrance to the mine site will remain for the landowner's utilization. The improved access road was improved during mining operations to provide access not only up Mud Creek but also to the upper portal bench. This road will remain following reclamation activities to serve as continuing access up Mud Creek. The original Mud Creek road still exists now in its original condition.

Map 2 (Reclamation Plan) provides a description of the reclamation activities or intended post mining land uses of the roads within the permit boundary. Roads to remain as part of the post mining land use include; main haul access road, improved access road, existing Mud Creek road, general access road, access road to water tanks. Roads to be reclaimed include the portal pad access road, the portal bench and the road from the substation to the mine development waste area.

Compliance

The applicant's permanent reclamation measures for roads comply with this section.

Stipulations

None.

UMC 817.180 Transportation Facilities and
UMC 817.181 Support Facilities and Utility Installations - JRH

Existing Environment and Applicant's Proposal

The applicant outlines in the Reclamation Plan pp. 18-20 and on Map 2, the plans for the removal of certain structures and facilities and also for those facilities which are to remain for the post mining land use. Structures to be removed include; loading bin, run-of-mine conveyors, development waste chute, conveyor towers, diesel fuel storage tank, fan, storage shed, substation, certain culverts. Structures and facilities to remain include; main haul access road, improved access road, existing Mud Creek road, general access road, access road to water tanks, culverts B, C, and

D, sediment ponds(until vegetative cover is established), Ditches A and B, Office-Bath-Shop building, septic tank, leach field, power line, main transformer pole, light poles, culinary and fire protection water storage tanks, water main, water well.

The applicant describes in the reclamation plan how the support facilities will be disassembled and removed.

Compliance

The applicant will reclaim the support facilities and utility installations in accordance with this section. Those items as indicated in the Reclamation Plan will be left for the post mining land use.

Stipulations

None.

UMC 822 Alluvial Valley Floors

Existing Environment and Applicant's Proposal

The applicant indicates that it is the feeling of the State Soil Scientist that the mine plan area does not contain an Alluvial Valley Floor (AVF) (P. A-4, Chapter VII of the September 27, 1985 submittal).

Compliance

Mud Creek, within the Mud Creek Canyon, has been determined not to be an AVF. This determination is based on an August 1984 visit to the site by DOGM personnel. It was determined that the canyon was too steep and narrow to support flood irrigation or subirrigation agricultural activities.

Based upon the information presented on pages 21 & 22 of the Valley Camp Technical Analysis (TA) (OSM,1983), the lower part of Pleasant Valley (i.e., below the Utah No. 2 mine) has historically been flood irrigated and may also be subirrigated. The upper part of the valley was observed to be "...narrow and generally not suitable for flood irrigation development"(OSM,1983). The logic used in the Valley Camp TA, defining the narrow valleys of Whiskey Canyon, Pleasant Valley, above Utah No. 2 mine, and Eccles Canyon, as not being an AVF is used herein to find that Mud Creek Canyon in the vicinity of the Blazon No. 1 mine is also not an AVF.

Another point supporting this negative determination is the fact that the upper reaches of Mud Creek have never been used as irrigated or subirrigated crop lands and have historically been used as undeveloped range land (Personal communication with Ron Higgs, Range Conservationist, USFS Manti-Lasal Forest).

Stipulations

None.

UMC 823 Prime Farmland

Existing Environment and Applicant's Proposal

No prime farmland exists on the Blazon Mine plan area. This is documented by a letter of negative determination from the SCS found in Chapter 7, p. A4 of the September 27, 1985, submittal.

Compliance

The applicant is in compliance with this section.

Stipulation

None

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SUPPORTING DOCUMENTATION

1. Sign-off letter from SHPO to DOGM dated September 11, 1984.
2. Letter from State Engineer dated July 30, 1984.
3. Approval letter from State Engineer dated April 3, 1980.
4. Letter from Division of Wildlife Resources dated January 13, 1984.
5. Division of Environmental Health approval letter dated April 7, 1980.
6. Division of Environmental Health approval letter dated September 25, 1979.
7. Division of Oil, Gas and Mining Permit Approval dated July 3, 1980.
8. Letter from U. S. Fish and Wildlife Service dated October 9, 1981.
9. Letter from Carbon County, dated June 20, 1985, approving change in post-mining land use.

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