



































FINAL CLOSURE & RECLAMATION PLAN

BLAZON No. 1 MINE

CARBON COUNTY, UTAH

NORTH AMERICAN EQUITIES, n.v.

1401 17th STREET, SUITE 1510

DENVER, COLORADO 80202

October, 1986

Prepared By

ACZ inc

Steamboat Springs, Colorado

NORTH
AMERICAN
EQUITIES, n.v.

RECEIVED
OCT 29 1986

DIVISION OF
OIL, GAS & MINING

October 27, 1986

Ms. Susan Linner
Utah Division of Oil, Gas, and Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Re: North American Equities Final Closure and Reclamation Plan,
Blazon No. 1 Mine (ACT/007/021)

Dear Susan:

Please find enclosed four (4) final copies to the reorganized Final Closure and Reclamation Plan (FCRP).

Exhibit 2 "May 17, 1985 Letter from William Haynes (representing Jack Otani, the surface owner) to Alan Smith of NAE Requesting Alternative Postmining Land Use" and Exhibit 5, "April 9, 1985 Letter from Lowell Braxton of UDOGM to Alan Smith Regarding Approval to Remove Structures and Facilities from Surface Facilities Area" could not be located. Please secure from UDOGM files and place in appropriate exhibits.

It is hoped this reorganized FCRP will satisfy all Division concerns. Major aspects of the reorganized document involve:

- Item by item responses to the April 11, 1986 Letter from UDOGM to NAE concerning the review of the consolidated final reclamation and closure plan. These responses follow this cover letter.
- Renumbering tables, figures, maps, and exhibits to aid the Division's review.
- Extracting pertinent information from exhibits 10, 11, & 12 and including in the FCRP.
- Updating information as suggested by the April 11, 1986 Letter from UDOGM to NAE.
- Revised Table of Contents

NORTH
AMERICAN
EQUITIES, n.v.

Ms. Susan Linner
Page Two
October 27, 1986

In conclusion, this reorganized FCRP will aid the Division in its subsequent inspections of the ongoing reclamation work performed at the Blazon No. 1 Mine. If there are any questions, please do not hesitate to contact me.

Sincerely,

NORTH AMERICAN EQUITIES

Alan Smith by *Dan Keesler - ACZ INC*

Alan Smith

Prepared For
NORTH AMERICAN EQUITIES
1401 Seventeenth Street, Suite 1510
Denver, Colorado 80202

BLAZON NO. 1 MINE
FINAL CLOSURE AND RECLAMATION PLAN

October 22, 1986

Prepared By
ACZ INC.
Engineering & Environmental Division
P.O. Box 774018
1475 Pine Grove Road
Steamboat Springs, Colorado 80477

General Format and Contents

The "consolidated" reclamation plan does not contain any of the information required to be put in the plan from the original Mining and Reclamation Plan (MRP) of 1981. This includes:

<u>All of Chapter II</u>	<u>Legal, Financial, Compliance, and Related Information</u>
<u>Chapter III</u>	<u>Pages 8-10, Signs and Markers</u>
<u>All of Chapter V</u>	<u>Historical and Cultural Resources</u>
<u>All of Chapter VIII</u>	<u>Soil Resources</u>
<u>Chapter X - Including Appendix</u>	

RESPONSE:

- Chapter II; Legal, Financial, Compliance, and related information has been included as Exhibit 17.
- Chapter III; Signs and markers, has been included as Exhibit 18.
- Chapter V; Historical and cultural resources, has been included as Exhibit 19.
- Chapter VIII; Soil Resources, has been included as Exhibit 21.
- Chapter X; Fish and Wildlife information has been included as Exhibit 22.

Sections required from the May 1984 PAP submittal which are not present include:

p. 771.23-1
p. 782.13-1
pp. 782.14-1 and 2
pp. 783.19-1 thru 4
pp. 817.22-1 thru 10
p 817.24-1
p. 817.25-1
pp. 817.97-1 thru 4
p. 817.106-1

Exhibit 6 - Vegetation Information

Exhibit 15 - Soils Information

RESPONSE:

- p. 771.23-1 Has been incurred in Exhibit 17, ID of Interest, Legal, Financial, and Compliance information.
- p. 782.13-1 Has been incurred in Exhibit 17, ID of Interest, Legal, Financial, and Compliance information.
- pp. 782.14-1,2 Has been incurred in Exhibit 17, ID of Interest, Legal, Financial, and Compliance information.
- pp. 783.19-1,4
vegetation Has been included in Exhibit 20, information.
- p. 783.22-1,10 Soils information, Exhibit 21.
- p. 817.24-1 Has been included in FRCP as applicable performance standards
- p. 817.25-1 Has been included in FRCP as applicable performance standards
- pp. 817.97-1,4 Has been included in FRCP as applicable performance standards
- p. 817.106-1 Has been included in FRCP as applicable performance standards

- Exhibit 6 Vegetation Information, has been included as Exhibit 20.
- Exhibit 15 Soils Information, has been included with the soils resources in Exhibit 21.

Several Maps in Volume 2 contain the same map numbers as maps in Volume 1 - each map must be uniquely numbered.

RESPONSE:

Map numbers have been revised such that each map is uniquely numbered. The Table of Contents and narrative has been revised accordingly. Map number changes are as follows:

(A)

<u>MAP TITLE</u>	<u>CURRENT MAP NO.</u>	<u>REVISED MAP NO.</u>
Surface Ownership	1	1
Coal Ownership	2	2
Pre-Mining and Post-Mining Land Use	3	3
Vegetation	4	4
Pre-Mining Topography	6	5
Surveyed Section Locations	1	6
Reclamation Plan	2	7
Post-Mining Topography/ Revegetation	3	8
Surveyed Section A-A' - J-J'	4	9
Surveyed Section K-K' - R-R'	5	10
Secondary Road Design	16	16
Soils	17	17

Map 1 (In Vol. II, titled Blazon #1 Mine Surface Ownership) must be updated to show Jack Otani as surface owner not Milton & Calvin Jacob.

RESPONSE:

Map 1, Blazon No. 1 Mine, surface ownership, has been updated to show Jack Otani as surface owner.

Exhibits (10-12) are confusing - the pertinent information should be extracted and inserted into the appropriate sections of the plan.

RESPONSE:

Pertinent information from Exhibits 10, 11, and 12 has been inserted into FRCP. However, these Exhibits will remain in the final document.

Page 18, Volume I states that the loading bin will be removed, however, Map 3 depicts the loading bin as remaining. This discrepancy must be clarified.

RESPONSE:

Map 3, Post-Mining Topography/Vegetation, has been changed to Map 7. This Map has been revised to show the loading bin to be removed at reclamation.

UMC 784.13(b)(5) - LK

The first paragraph of the section on mulching (page 27, Vol. 1) states that mulching will be applied after seeding, and then contradicts itself by stating that following mulching and discing the area will be seeded. Seeding must be done before mulching. Please correct this paragraph to show correct order of mulching and seeding.

With regards to the monitoring plan, monitoring shrub survival of planted (vs. seeded) shrubs must be added to years 1 and 2 of the plan. Also, insert the specifics of the monitoring plan (page 4, exhibit 12) in this section rather than referring to a confusing exhibit.

RESPONSE:

The proper sequence of seeding and mulching has been clarified and inserts into Reclamation Narrative. The monitoring plan likewise has been clarified and inserted into Reclamation Narrative.

UMC 800 Bonding Requirements - JRH

Bonding calculations included in the updated reclamation plan do not reflect the reclamation work presented in the reclamation plan. Refer to the bonding cost estimate done by the Division to incorporate change to such items as revegetation into the bonding cost estimate submitted by the Operator.

RESPONSE:

Bonding calculations have been included in Exhibit 24, Reclamation Bond Estimate.

UMC 817.22 Topsoil: Removal - JSL

On page 55 and the drawing on page 61 of Exhibit 12, the applicant presents unapproved topsoil borrow area information. Is NAE presently planning on a topsoil borrow area?

RESPONSE:

NAE is not proposing to borrow topsoil from any area at this time. Page 55 has been revised to reflect this. Page 61 in Exhibit 12 has been revised to say "possible topsoil borrow area".

UMC 817.24 Topsoil: Redistribution - JSL

The applicant has enclosed inappropriate soil volume information. On page three of Exhibit 10, the applicant reports 1410 cubic yards of material. This value must be eliminated or changed to reflect the actual current topsoil volume of 287 cubic yards. On page 22 of the MRP the applicant commits to redistribute one foot of topsoil on area D, yet a six inch redistribution depth was approved. Please amend.

RESPONSE:

Page 22 of the FCRP reflects the actual topsoil volume available as well as the approved redistribution depth of six (6) inches.

UMC 817.25 Topsoil: Nutrients and Soil Amendments - JSL

The applicant is inconsistent with the nutrient and amendment strategy in the FCRP. On page 26 of the FCRP, the applicant states that NO₃-N, organic matter, phosphorus and potassium will be analyzed. On page 15, September 25, 1985 correspondence, and page 18 of the FCRP the following approved analysis was committed to:

pH, cation exchange capacity, organic matter, alkalinity, total nitrogen, available phosphorus, sodium adsorption ratio, potassium, calcium, magnesium, electrical conductivity, and texture. On Map 3 (Postmining topography/revegetation), area D, the applicant states that the overburden material will be scarified, mulched, and seeded. On page 22 the applicant commits to redistribute topsoil on area D. Area D must have topsoil redistributed. Please clarify. All areas that will not receive topsoil should have 2 tons of alfalfa mixed into the substitute soil at the time of ripping, not after seeding as stated on page 27.

RESPONSE:

- Page 33 of the reclamation plan in the FCRP has been revised to reflect the approved soil analysis.

- Map 7, (revised from Map 3) Postmining topography/ revegetation, has been revised to show the 6 inches of topsoil to be placed on Area D.
- A commitment to mix 2 Tons of Alfalfa on areas not topsoiled has been included in the FCRP. This is shown on page 38 of the FRCR.

UMC 817.41-.57 Hydrologic Concerns - DC

Several deficiencies exist in the FCRP that must be included in the document. The following is a list of deficiencies and discrepancies:

1. Watershed maps for drainage that reports to culverts B, C, D, ditch B and berm A must be submitted:

RESPONSE:

Watersheds for drainages which report to culverts B, C, D, Ditch B, and Berm A have been included in Exhibit 23, Hydrology and Hydraulics.

2. A map clearly depicting the disturbed and undisturbed areas at the mine site must be submitted. In particular the 10.06 acres that will have runoff reporting to the sedimentation pond must be identified.

RESPONSE:

A map depicting the disturbed and undisturbed areas has been included in Exhibit 23, Hydrology and Hydraulics.

3. A contour map of the sedimentation ponds from which the stage capacity curves were derived must be submitted.

RESPONSE:

Contour maps for the sedimentation ponds have been included in Exhibit 23, Hydrology and Hydraulics.

4. The energy dissipator designed below the lower sedimentation pond emergency spillway should be redesigned so that the flow will be spread out rather than concentrated (i.e. the dissipator should be reversed).

RESPONSE:

The energy dissipator as designed will spread out the flow. The design has been placed in Exhibit 23, Hydrology and Hydraulics.

5. Peak flow calculations for the drainage being controlled by berm A should be submitted.

RESPONSE:

The peak flow calculations for the drainage controlled by Berm A are included in Exhibit 23, Hydrology and Hydraulics.

6. The time of concentration value computed for the transformer road drainage is incorrect and should be recalculated and the correct value used in all subsequent calculations.

RESPONSE:

The time of concentration value has been revised and used in all subsequent calculation. This information has been included in Exhibit 23, Hydrology and Hydraulics.

7. Map #2 (Reclamation Plan) should be revised to include the water monitoring station that will be used to determine sediment concentrations from the reclaimed areas.

RESPONSE:

Reclamation water monitoring point B-1 has been added to the Reclamation Map. The number of the reclamation map has been changed from No. 2 to No. 7.

8. Item #49 on Map #2 states that silt fence will be installed if required. The statement "if required" must be clarified.

RESPONSE:

Item #49 on the Reclamation Map (now Map 7) has been changed to read the following: "Sediment fence will be installed if during subsequent inspections by UDOGM staff deem it necessary to protect the hydrologic balance.

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

The applicant must correct the inconsistant underground waste volume. On Exhibit 10, Page 3 and page 22 of the FCRP the applicant contends that 1000 cubic yards of underground waste will be placed on the pad. Map 3 delineates 4000 cubic yeards of underground waste to placed on the pad. Plesae clarify. The depth of fill that will be redistributed over the underground development waste is also inconsistent. Map 3 indicates that two feet of overburden will be redistributed over the underground waste. Page 22 and 55 of the FCRP states that the approved four feet of material will be placed over the development waste. Three and one-half feet will be fill from the face of area E, while six inches will be redistributed topsoil. According to Map 3, the volume of the fillis 140 cubic yards of material. Submitted calculations in Exhibit 15 suggest that 2496 cubic yards of material will be pulled from the face of area E. Please amend.

The applicant has requested a change in the depth of the fill material that will cover the underground development waste from four feet to one foot. The Division has denied the request for the change of cover depth from four feet to one foot. This decision is based on the information presented in Exhibit 15 and Oct. 5, 1985 correspondence. This material is classified as an acid and toxic-forming material. An acid-base potential less than -5 tons of CaCO₃/ 1000 tons of material is determined to be an acid- and toxic- forming material. The submitted underground development waste analytical data has an acid-base potential between -6 and -8.7 tons of CaCO₃/ 1000 tons of material. This acid- and toxic- potential may be alleviated with the application of 9 tons of a fine mesh limestone to the underground development waste. The CaCO₃ must be thoroughly mixed with the underground development waste material prior to burial.

RESPONSE:

Map 7 (Formally Map 3), Post-mining topography/revegetation, has been revised to reflect the approved Reclamation Plan.

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LIST OF EXHIBITS

<u>EXHIBIT NO.</u>	<u>TITLE</u>
1	FEBRUARY 14, 1985 LETTER FROM ALAN SMITH OF NAE TO RON DANIELS OF UDOGM REGARDING PERMANENT CLOSURE OF BLAZON NO. 1 MINE
2	MAY 17, 1985 LETTER FROM WILLIAM HAYNES (REPRESENTING JACK OTANI, THE SURFACE OWNER) TO ALAN SMITH OF NAE REQUESTING ALTERNATIVE POSTMINING LAND USE
3	MAY 20, 1985 LETTER FROM ALAN SMITH OF NAE TO HAROLD MARSTON, COUNTY PLANNER FOR CARBON COUNTY, REQUESTING CARBON COUNTY APPROVAL OF ALTERNATIVE POSTMINING LAND USE
4	MARCH 26, 1985 LETTER FROM ALAN SMITH OF NAE TO RON DANIELS OF UDOGM REGARDING A MARCH 13, 1985 MEETING IN SALT LAKE CITY
5	APRIL 9, 1985 LETTER FROM LOWELL BRAXTON OF UDOGM TO ALAN SMITH REGARDING APPROVAL TO REMOVE STRUCTURES AND FACILITIES FROM SURFACE FACILITIES AREA
6	MAY 29, 1985 LETTER FROM ALAN SMITH OF NAE TO UTAH STATE ENGINEER REQUESTING TRANSFER OF WATER WELL TO JACK OTANI
7	MAY 29, 1985 LETTER FROM ALAN SMITH OF NAE TO MARY ANN WRIGHT OF UDOGM REQUESTING APPROVAL TO PLACE UNDERGROUND DEVELOPMENT WASTE IN ABANDONED STRIP PIT NORTH OF BLAZON SITE
8	GEOTECHNICAL ANALYSES OF POSTMINING SLOPES AT THE BLAZON NO. 1 MINE

LIST OF EXHIBITS (Continued)

<u>EXHIBIT NO.</u>	<u>TITLE</u>
9	MAY 29, 1985 LETTER FROM ALAN SMITH OF NAE TO EPA REGARDING DISCONTINUANCE OF NPDES PERMIT UT-002367
10	AUGUST 8, 1985 LETTER FROM ALAN W. SMITH OF NAE TO LOWELL P. BRAXTON OF UDOGM IN RESPONSE TO QUESTIONS CONTAINED IN BRAXTON LETTER OF JULY 25, 1985 REQUESTING ADDITIONAL INFORMATION.
11	SEPTEMBER 6, 1985 LETTER FROM ALAN W. SMITH OF NAE TO LOWELL P. BRAXTON IN RESPONSE TO AUGUST 28, 1985 QUESTIONS FROM UTAH DIVISION OF OIL, GAS & MINING FINAL RECLAMATION OF BLAZON NO. 1 MINE
12	SEPTEMBER 25, 1985 LETTER FROM ALAN W. SMITH OF NAE TO LOWELL P. BRAXTON OF UDOGM IN ANSWER TO BRAXTON LETTER OF AUGUST 28, 1985, REQUESTING ADDITIONAL INFORMATION AND CALCULATIONS
13	SEPTEMBER 28, 1985 LETTER FROM ALAN W. SMITH OF NAE TO LOWELL P. BRAXTON OF UDOGM REGARDING THE RECLAMATION OF THE TOPSOIL BORROW AREA; CONTAINING A CERTIFIED COPY OF THE SEDIMENT POND CROSS SECTION; AND THE DETERMINATION OF THE HEIGHT OF BERM A AND LOWER PAD AREA
14	OCTOBER 3, 1985 LETTER FROM ALAN W. SMITH OF NAE TO LOWELL P. BRAXTON OF UDOGM ANSWERING VERBAL QUESTIONS REGARDING TIMING AND DENSITY OF SEEDING, DISTRIBUTION OF TOPSOIL AND SIZE OF THE DITCH ALONG THE ROAD TO THE TRANSFORMER PAD AREA

LIST OF EXHIBITS (Continued)

<u>EXHIBIT NO.</u>	<u>TITLE</u>
15	OCTOBER 17, 1985 LETTER FROM ALAN W. SMITH OF NAE TO LOWELL P. BRAXTON OF UDOGM ENCLOSING LABORATORY RESULTS TAKEN FROM NORTH AMERICAN EQUITIES PROPERTY
16	OCTOBER 29, 1985 LETTER FROM ALAN W. SMITH OF NAE TO LOWELL P. BRAXTON OF UDOGM REQUESTING REDUCTION OF POST-RECLAMATION BOND RELEASE PERIOD
17	IDENTIFICATION OF INTEREST, LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION
18	SIGNS AND MARKERS
19	HISTORICAL AND CULTURAL RESOURCES
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21	SOIL RESOURCES
22	FISH AND WILDLIFE INFORMATION
23	HYDROLOGY AND HYDRAULICS INFORMATION
24	RECLAMATION BOND ESTIMATE
25	TOPSOIL AND UNDERGROUND DEVELOPMENT WASTE CALCULATIONS

SUMMARY

In early 1985, North American Equities, N.V. ("NAE") received and reviewed a consultant's report regarding the feasibility of re-opening the Blazon No. 1 Mine. Unfortunately, the conclusions presented in this report were not favorable for re-opening the mine in the near future. Likewise, the option of selling the property to another entity has not been successful, and no potential buyer is currently interested in the property. The option of maintaining the property in the hope of re-opening in the foreseeable future or perhaps finding an interested buyer is not viable, given the long-term objectives and financial constraints of NAE.

Based upon the conclusions and recommendations reached in the consultant's report, NAE decided to permanently close and reclaim the site. Notice of this intent was given to the Utah Division of Oil, Gas & Mining ("UDOGM") in a letter from Alan Smith of NAE to Ron Daniels dated February 14, 1985. A copy of this letter can be found as Exhibit 1, February 14, 1985 Letter from Alan Smith of NAE to Ron Daniels of UDOGM Regarding Permanent Closure of Blazon No. 1 Mine.

As part of the decision to close and reclaim the mine site, NAE withdrew its permanent program permit application for the Blazon No. 1 Mine.

Information set forth in this report includes the following:

- General Introduction and Background Remarks about the Blazon No. 1 Mine
- Permanent Cessation of Operations
- Alternative Postmining Land Use
- Reclamation Plan

NAE plans to close and reclaim the Blazon No. 1 Mine site during 1985. Jack Otani, the surface owner, has requested that the area remain for use by his construction company. Approximately 3.15 acres will be left in its existing state for use by Mr. Otani, the remaining 1.5 acres will be seeded to provide erosion control.

NAE should emphasize that the decision to close and reclaim the Blazon No. 1 Mine has been a difficult one. In this light, NAE hopes that UDOGM will work with the company to achieve efficient and economic closure and reclamation work according to the appropriate regulatory standards.

INTRODUCTION

The Blazon No. 1 Mine was a small underground coal mine located in Carbon County, Utah. The mine operated only for a brief period of time in the early 1980's and was closed on a temporary basis in January of 1982.

This report presents the closure and reclamation plan prepared by NAE for approval by UDOGM.

Geographical Setting

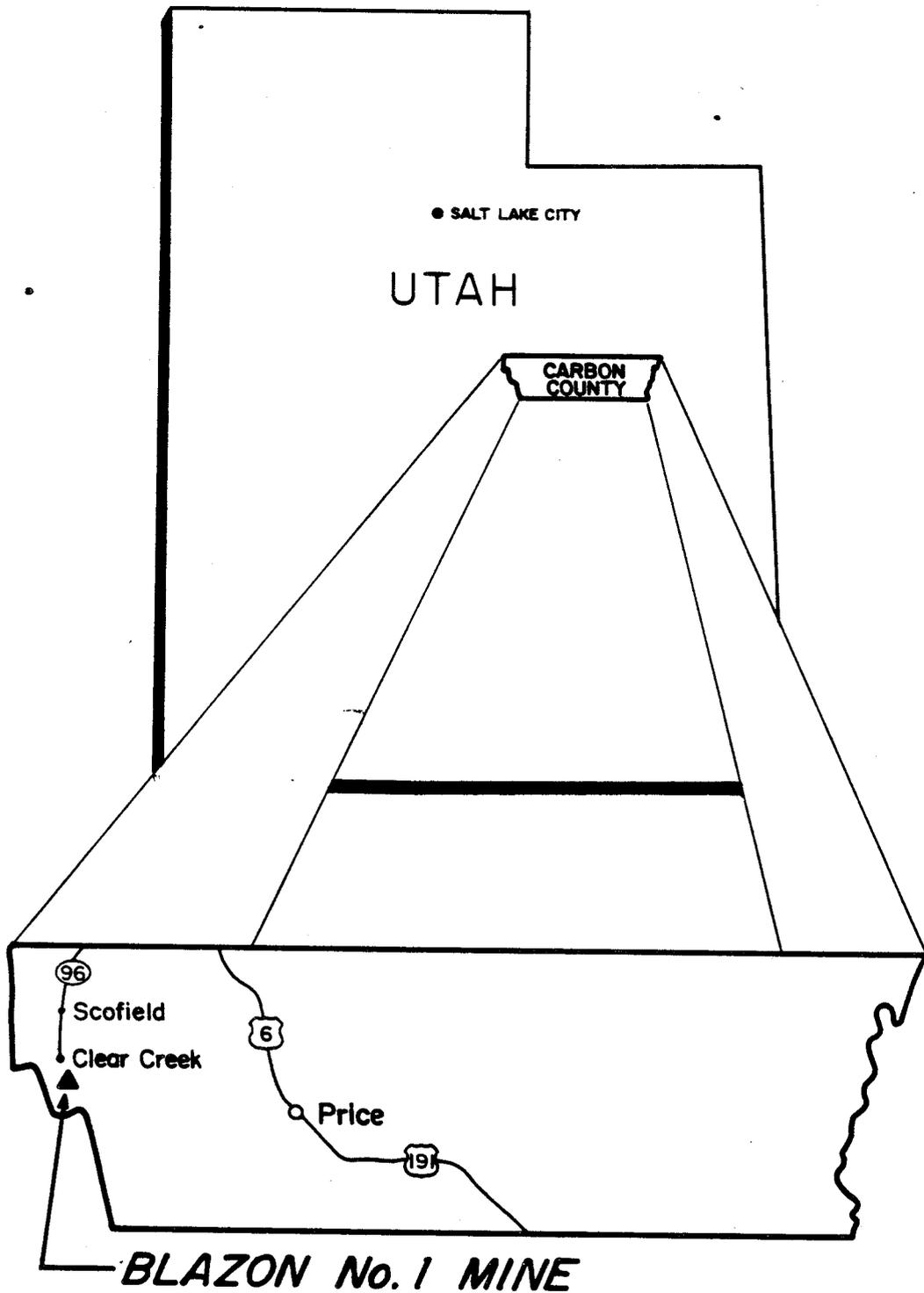
The Blazon No. 1 Mine site is located just south of the town of Clear Creek, in Carbon County, Utah, as shown on Figure 1, General Location Map. State Highway 96 provides access to the mine. The area of and surrounding the Blazon No. 1 Mine is characterized by mountainous terrain with significant topographic relief. The elevation of the surface facilities area ranges between 8,440 and 8,600 feet above sea level. The surface facilities area is generally found on the east side of Mud Creek, a small perennial drainage.

General Overview of Blazon No. 1 Mine

The Blazon No. 1 Mine is located in an area that has seen extensive underground and surface mining in the past. The mining operation was initially developed by the Blazon Mining Company in conjunction with TOE Investment Company, N.V. On July 3, 1980, UDOGM approved a mining permit for the Blazon No. 1 Mine under the Utah Mine Plan Reclamation Act as well as the Interim Program Regulations of the Office of Surface Mining. The mine began producing coal in March of 1981.

Effective July of 1981, TOE Investment Company, N.V. changed its corporate name to North American Equities, N.V. ("NAE").

Lack of an adequate market caused NAE to temporarily close the mine in January of 1982. However, during temporary closure, NAE continued



GENERAL LOCATION

FIGURE 1

permit work to obtain an approval under the permanent program regulations. Also, during the period of temporary closure, NAE was contacted by a potential buyer for the mining property and began negotiations for possible sale of the mining operations.

At the end of 1984, it became apparent that the potential buyer was no longer interested in purchasing the Blazon No. 1 Mine. At this time, NAE requested that ACZ INC., a mining engineering firm, evaluate the overall status and potential feasibility of re-opening the mine. Concurrently, NAE was still working to obtain approval of a permanent program permit from UDOGM.

In January of 1985, NAE requested that UDOGM grant a temporary 90-day extension for filing additional information regarding the permanent program permit. This extension was necessary primarily because NAE wanted to review the ACZ INC. report on overall mine feasibility prior to proceeding with additional permit work. In early February of 1985, NAE received and reviewed the evaluation of the overall mine feasibility. Based upon discussions regarding labor constraints, transportation limitations, site conditions, operational constraints, market factors, permitting considerations, etc., ACZ INC. recommended that NAE permanently close the mine and reclaim the site.

On February 14, 1985, a letter from Alan Smith of NAE was sent to Ron Daniels of UDOGM stating that NAE had reluctantly decided to permanently close and reclaim the Blazon No. 1 Mine site. A copy of this letter can be found in Exhibit 1, February 14, 1985 Letter from Alan Smith of NAE to Ron Daniels of UDOGM Regarding Permanent Closure of Blazon No. 1 Mine.

Size and Configuration of Past Operations

As mentioned above, the Blazon No. 1 Mine was a small, underground coal operation that produced coal between March of 1981 and January of 1982. Only a small amount of coal was removed by the mining operations. Roof problems, generally poor mining conditions, and an inadequate market

caused NAE to temporarily close the mine in January of 1982. The mining operations conducted during the brief period of operation at the Blazon No. 1 Mine consisted of opening development entries; no panels were developed, and no retreat mining was ever conducted at the mine site.

Decision to Permanently Close and Reclaim Blazon No. 1 Mine

In early 1985, NAE reviewed the following business options regarding the future of the Blazon No. 1 Mine:

- Sell the Blazon No. 1 Mine
- Maintain the Blazon No. 1 Mine for future production
- Reopen the Blazon No. 1 Mine
- Permanently close and reclaim the Blazon No. 1 Mine

The first business option was to sell the Blazon No. 1 Mine. Unfortunately, a potential sale of the mine did not work out for NAE; the potential buyer withdrew an expression of interest in the property and continuing efforts to identify and attract a potential buyer have been unsuccessful.

The second option was to merely maintain the Blazon No. 1 Mine on an inactive status. Since NAE did not anticipate a buyer to purchase the property in the foreseeable future nor did the Utah coal market appear favorable to reopen the mine, the option of maintaining the mine was determined to be economically infeasible.

The third option was to reopen the Blazon No. 1 Mine. This option was likewise determined to be infeasible because no market existed for the coal and the cost of reopening the existing mine workings and facilities proved to outweigh any potential benefits related to reopening the operation.

The final option for NAE was to permanently close and reclaim the mining operation. Since NAE could not sell the mine, was not in an attractive position to reopen the mine, and certainly did not want to maintain the

property given the high annual maintenance costs, the option of permanent closure and reclamation appeared to be the only viable alternative.

Economic Considerations of Closure and Reclamation

It should be emphasized that the decision to close and reclaim the Blazon No. 1 Mine was a difficult one for NAE. NAE had made a substantial investment of both money and time to develop and permit the property. Although NAE has chosen to close and reclaim the mine to minimize losses, a significant financial loss will nonetheless be experienced.

In this light, NAE wishes to eliminate any unnecessary costs in reclaiming the site. Certainly, any extraneous costs must be avoided during the reclamation work. NAE hopes that UDOGM will establish a cooperative effort with NAE to achieve efficient and economic restoration of the property to commercial and industrial use.

Legal Aspects

To date, NAE purposely has chosen not to involve its attorney with the plans for final closure and reclamation. NAE's primary goal is to restore the site for commercial and industrial use by utilizing accepted techniques and standards, while avoiding any legal or regulatory entanglements which might result in extraneous costs. Hopefully, the basic reclamation plans for the site set forth in this report will meet the UDOGM requirements such that no legal questions will require further resolution.

NAE disagrees with UDOGM that the permanent program performance standards apply to the Blazon No. 1 Mine. Nonetheless, NAE will work with UDOGM to ensure appropriate reclamation standards are met for the site. Given that the surface facilities area of the Blazon No. 1 Mine is relatively small (less than seven acres), NAE believes that proposed closure and reclamation work can be approved and effectively completed without the need for legal intervention.

Reclamation Logistics

NAE plans to complete closure and reclamation work as soon as appropriate approvals are obtained and the weather allows. UDOGM has already approved the removal of certain surface structures from the Blazon No. 1 Mine. Since early March, NAE has been working to sell certain facilities and structures to interested parties. Such structures are and will continue to be removed as they are sold.

Upon UDOGM approval of the closure and reclamation plan presented in this report, NAE will select a contractor immediately such that the appropriate work can be conducted and completed.

General Reclamation Plan

NAE will undertake reclamation work at the site in the following sequence:

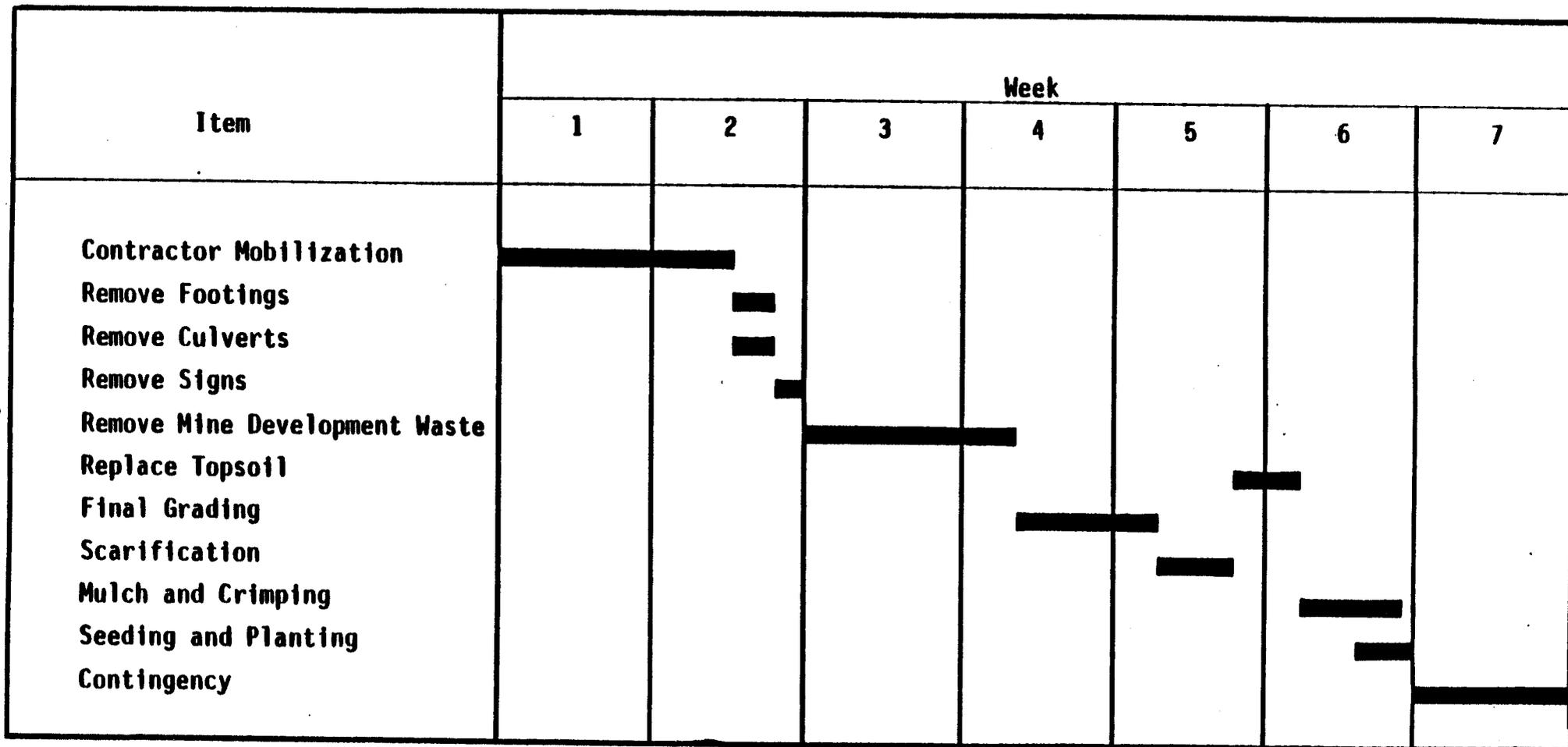
- Removal of certain structures
- Sealing of underground openings
- Covering of coal seams
- Backfilling and grading
- Scarification
- Topsoil replacement
- Revegetation work

NAE has worked with Jack Otani, the surface owner of the property, to ensure that the closure and reclamation plans reflect his concerns regarding future utilization of the property. NAE plans to reclaim the site to provide for an alternative postmining land use. The proposed postmining land use will be industrial/commercial such that Jack Otani can utilize the site for his construction business activities.

Reclamation Schedule

NAE will pursue the schedule outlined on Figure 2, Reclamation Schedule.

**Figure 2
RECLAMATION SCHEDULE**



Necessity for Approval of Closure and Reclamation Plan

NAE finds itself in a difficult situation. The Blazon No. 1 Mine has been temporarily closed since January of 1982. Because the mining operation never reached its potential, NAE has incurred a substantial economic loss. As a result of this financial loss, the continuing economic burden of site maintenance, and the other reasons previously set forth, NAE wishes to complete closure and reclamation work as quickly, efficiently, and economically as possible.

Without prompt regulatory approval of this plan by UDOGM, NAE will continue to suffer economic hardships. NAE desires and plans to reclaim the mining site as quickly as possible to avoid any additional adverse economic impacts. NAE respectfully requests that UDOGM expedite review and approval of the Blazon Mine closure and reclamation plan presented in this report.

Description of Organization of Closure and Reclamation Plan

NAE has carefully chosen the format for this closure and reclamation plan. The plan is arranged to facilitate review by UDOGM. Supplemental information not included in the typed text of this plan is set forth as Figures, Tables, Maps, or Exhibits. A comprehensive listing of all Figures, Tables, Maps, and Exhibits directly follows the Table of Contents to this plan. The Table of Contents provides an outline showing the logical sequence of steps involving final closure and reclamation at the Blazon No. 1 Mine site.

Supplemental Information

In order to consolidate the FRCP into an acceptable document for UDOGM and to aid in the subsequent inspection of reclamation, the following supplemental information has been added:

- Applicable Performance Standards

- Exhibit 17, Identification of Interest, Legal, Financial, Compliance, and Related Information
- Exhibit 18, Signs and Markers
- Exhibit 19, Historical and Cultural Resources
- Exhibit 20, Vegetation Information
- Exhibit 21, Soil Resources
- Exhibit 22, Fish and Wildlife Information
- Exhibit 23, Hydrology and Hydraulic Information
- Exhibit 24, Reclamation Bond Estimate
- Exhibit 25, Tospoil and Underground Development Waste Calculations

PERMANENT CESSATION OF OPERATIONS

On July 3, 1980, UDOGM approved a mining permit for the Blazon No. 1 Mine under the Utah Mine Plan Reclamation Act, as well as the Interim Program Regulations of the Office of Surface Mining. The mine began producing coal in March of 1981. The lack of an adequate market caused NAE to temporarily close the mine in January of 1982. UDOGM was contacted at this time regarding the temporary closure of the operation.

During 1982, 1983, and 1984, NAE worked diligently to obtain a market for the coal or a potential buyer for the mining property. During the same time, NAE continued permit work to obtain an approval under the permanent program regulations. To date, no permanent program permit has been approved by UDOGM.

At the end of 1984, it became apparent that no potential buyer or market was available for the Blazon No. 1 Mine. At this time, NAE contracted for an independent evaluation of the overall status of the property and potential feasibility of reopening the mine.

In January of 1985, NAE requested that UDOGM grant a temporary 90-day extension for filing additional information regarding the permanent program permit. This extension was necessary primarily because NAE wanted to review the mine feasibility evaluation.

In early February, 1985, NAE received and reviewed the study regarding the overall mine feasibility. Based on discussions within the report regarding labor constraints, transportation limitations, site conditions, operational constraints, market factors, and permitting considerations, NAE decided to permanently close the mine and reclaim the site.

On February 14, 1985, a letter from Alan Smith of NAE was sent to Ron Daniels of UDOGM stating that NAE had decided to permanently close and reclaim the Blazon No. 1 Mine site. A copy of this February 14, 1985 letter is found as Exhibit 1, February 14, 1985 Letter from Alan Smith of NAE to Ron Daniels of UDOGM Regarding Permanent Closure of Blazon No. 1 Mine.

ALTERNATIVE POSTMINING LAND USE

Based on meetings and conversations with Jack Otani, surface owner, and his representative, William Haynes, during April and early May of 1985, NAE will pursue a restoration of the Blazon No. 1 Mine site to an alternative postmining land use of commercial and industrial uses. Mr. Otani wants to utilize the site for his construction firm's activities. The following items are discussed in this section:

- Premining Land Use
- General Description of Postmining Land Use
- Goals and Objectives
- Compatibility with Adjacent Land Use
- Written Statement from Surface Land Owner
- Comments from Carbon County
- Specific Plans for Achieving Alternative Postmining Land Use
- Professional Engineer Design Supervision
- Public Health and Safety Concerns
- Long Term Use

Please refer to the Surface Ownership Map (Map 1) for Mr. Otani's ownership boundaries and the Pre-Mining and Post-Mining Land Use Map (Map 2) for land use information.

Pre-mining Land Use

The Blazon No. 1 Mine is located in an area that has seen extensive underground and surface mining in the past. Previous underground mining activities were carried out in the Clear Creek No. 1 and No. 2 Mines directly under the permit area of the Blazon No. 1 Mine and at the Clear Creek No. 3 Mine, located east of the permit area. The Clear Creek No. 1 and No. 2 Mines, situated approximately 200 feet below the Blazon No. 1 Mine, extracted the lower Clear Creek (or lower O'Connor) Seam. This seam is approximately 10 to 12 feet thick, and was mined using conventional room and pillar methods. The Clear Creek No. 3 Mine also

produced coal from the lower Clear Creek Seam. Production from these abandoned mines during the period of 1900 through the mid 1960's totalled approximately 15 million tons.

Located immediately north of the the Blazon No. 1 Mine surface facilities area, is the Clear Creek strip pit. This small surface operation produced coal from the upper Clear Creek coal seam until 1967, when it was abandoned.

From a historical point of view, the land in this area, prior to any underground or surface coal mining, was undeveloped and the primary utilization was wildlife habitat. Recently, most of the areas surrounding the Blazon No. 1 Mine have been used for livestock grazing. The only other significant land use in this area is residential/commercial as reflected by the Town of Clear Creek, located approximately three-quarters of a mile north of the Blazon No. 1 Mine surface facilities.

General Description of Postmining Land Use

Even in earlier NAE submittals to UDOGM, it was contemplated that the postmining land use might differ from the premining use of grazing. The original permit application for the Blazon No. 1 Mine indicated that the postmining land use would be the same as the premining land use unless the surface owner decided otherwise. Recent conversations with Jack Otani, the surface owner, indicate that his preference is to allow the surface facilities area to remain for commercial and industrial purposes. The area of surface facilities is relatively small (less than 5 acres) and, therefore, utilization for commercial/industrial purposes should not adversely affect utilization of the adjacent and general areas.

Jack Otani operates a construction company out of the Town of Clear Creek, Utah and plans to utilize the surface facilities for his firm. As discussed later in this report, surface facilities such as the shop,

office, and warehouse, septic tank, leach field, parking and storage areas, powerline, water storage tanks, water lines, miscellaneous roads, etc. will be left for Mr. Otani's future use.

Goals and Objectives

The main NAE objective with regard to the alternative postmining land use is to provide a continuing use for the existing surface facilities following mining, while minimizing any erosion from the site.

Compatibility with Adjacent Land Use

The areas surrounding the Towns of Scofield and Clear Creek have seen extensive mining activities during this century. Mining operations have co-existed with the adjacent land uses of forestry, grazing, wildlife habitat, and undeveloped land. Therefore, the use of the Blazon No. 1 Mine surface facilities by Mr. Otani will be compatible with adjacent historic and present day land use. In addition, mining activities in this part of Utah are projected to continue into the future; therefore, utilizing the support facilities of the Blazon No. 1 Mine for Mr. Otani's construction company is a logical and efficient use of these existing facilities.

Given the relatively small area of land affected by the Blazon surface facilities, no adverse environmental impacts are expected to occur as a result of the alternative postmining land use. Rather, Mr. Otani will have the ability to remove equipment from the Town of Clear Creek to this site such that vandalism and theft can be minimized and/or completely eliminated. Mr. Otani is anxious to utilize this site for his construction company.

Written Statement from Surface Land Owner

The letter requesting the alternative postmining land use for the Blazon No. 1 Mine surface facilities is set forth as Exhibit 2, May 17, 1985 letter from William Haynes (representing Jack Otani) to Alan Smith of NAE.

Comments from Carbon County

NAE contacted Harold Marston, the County Planner for Carbon County. Mr. Marston indicated that Carbon County would have no problem with allowing the surface facilities to remain for use by Mr. Otani as long as no one lives at the site. Attached as Exhibit 3 is a May 20, 1985 letter sent from Alan Smith of NAE to Harold Marston of Carbon County requesting written approval for the use of the surface facilities by Jack Otani. NAE requested that Mr. Marston respond in writing to UDOGM.

Specific Plans for Achieving Alternative Postmining Land Use

Included in the section entitled "Reclamation Plan" of this report are plans for achieving the postmining land use.

Professional Engineer Design Supervision

This closure and reclamation plan has been prepared under the supervision of Eldon Strid, Director of Engineering for ACZ INC. Mr. Strid is a Utah Registered Professional Engineer; his number is 5672. Professionally accepted engineering standards have been utilized to ensure long-term land stability, effective drainage, appropriate vegetative cover where necessary, and aesthetical design appropriate for the postmining use of the site.

Public Health and Safety Concerns

There will be no public health or safety concerns following restoration work. The entries of the Blazon No. 1 Mine will be sealed to prevent future access. Likewise, the underground development waste found currently at the site will be removed and buried. No stability problems are anticipated with regard to the planned, final topography of the area.

Because the surface facilities are on land owned by Mr. Otani, access into the site will be controlled and public access will be discouraged.

Any unauthorized person entering the surface facilities area would be legally trespassing; therefore, NAE does not anticipate any future problems or concerns with regard to public health and safety.

Long Term Use

Jack Otani has been in the construction business in Clear Creek, Utah for many years. Mr. Otani, his sons, and his nephews are involved in providing construction and maintenance services to the mines found in this area. The surface facilities which will remain on site at Mr. Otani's request will be utilized for extended future operation of his construction business.

RECLAMATION PLAN

The reclamation objective for the Blazon No. 1 Mine will be to restore the surface facilities area to a postmining land use for commercial and industrial purposes. Jack Otani, the surface owner, plans to utilize approximately 3.15 acres of the 4.65 total acres for future operations of his construction firm. The 1.5 acres not necessary for his construction firm activities will be stabilized and seeded. The long-term usefulness of the surface facilities will be centered around the operation of Mr. Otani's construction company.

At the outset, it is imperative to appreciate that the reclamation plan defined in this section will be implemented in an area which will serve for the alternative postmining land use of commercial and industrial purposes. Although some areas will be graded, contoured, and seeded, the overall postmining land use for the area will be for commercial and industrial uses. Therefore, NAE has chosen to develop a reclamation plan that will complement the planned postmining land use. The schedule for the proposed reclamation is presented as Figure 2, Reclamation Schedule.

Given the planned alternative postmining land use, the following listing describes the various reclamation aspects that will be conducted at the surface facilities area of the Blazon No. 1 Mine:

- Removal of Structures
- Removal of Footings and Foundations
- Removal of Culverts
- Removal of Signs and Markers
- Retention of Certain Structures
- Transfer of Water Well
- Sealing of Underground Openings
- Covering of Coal Seams
- Disposal of Underground Development Waste

- Backfilling and Grading
- Retention of Portion of Portal Face-up Area
- Site and Soil Stabilization
- Scarification of Site
- Redistribution of Topsoil
- Soil Sampling
- Fertilization
- Seeding Amounts and Methods
- Mulching
- Irrigation
- Schedule for Reclamation and Revegetation
- Standards for Revegetation Success
- Need for Sediment Control
- Bond Release

The detailed cost of reclamation is contained in Exhibit 24, Reclamation Bond Estimate.

On May 8, 1985, the surface facilities area of the Blazon No. 1 Mine was surveyed such that an accurate map could be generated for the closure and reclamation plan work. In addition, sections were surveyed through the surface facility area on 50 foot centers. The location of the sections is shown on the Surveyed Section Locations Map (Map 6).

Based upon the survey and reconnaissance work at the site on May 9, 1985, the detailed plan for the reclamation of the surface facilities area was also developed and is graphically set forth on the Reclamation Plan Map (Map 7). The planned configuration of the area following closure and reclamation is shown on the Postmining Topography/Revegetation Map (Map 8). The series of survey sections made through the property are shown as Surveyed Sections A-A' through J-J' (Map 9) and Surveyed Sections K-K' through R-R' (Map 10).

Removal of Structures

As shown on the Reclamation Plan Map (Map 7), the following structures will be removed from the Blazon No. 1 Mine surface facilities area:

- Loading Bin
- Run-of-Mine Conveyors
- Development Waste Chute
- Conveyor Towers
- Diesel Fuel Storage Tank
- Fan
- Storage Shed
- Substation
- Certain Culverts

NAE has previously received approval from the UDOGM to begin removal of structures from the Blazon No. 1 Mine site. This approval was granted at the March 13, 1985 meeting with UDOGM in Salt Lake City. Discussions at this meeting are documented in Exhibit 4, March 26, 1985 Letter from Alan Smith of NAE to Ron Daniels of UDOGM. The approval to remove structures and facilities from the site was approved in the April 9, 1985 Letter from Lowell Braxton of UDOGM to Alan Smith of NAE which is presented in Exhibit 5.

NAE is currently working with several companies regarding purchase of the loading bin. This bin will be utilized by Mr. Otani until it can be sold and removed from the site.

NAE will also remove the run-of-mine conveyors from the mine site. These conveyors include the conveyor extending from the middle entry on the portal bench to the transfer point and a second conveyor running from the transfer point and the development waste chute to the loading bin. NAE is currently discussing purchase of these conveyors with several companies.

The transfer tower, which includes the development waste chute, will be removed. If possible, this tower will be sold as part of the sale of the conveyors. Any development waste found beneath the development waste tower will be removed and buried.

The remaining conveyor towers between the development waste chute and the loading bin will likewise be removed.

The diesel fuel storage tank will be sold and removed from the site.

The fan located on the portal bench has been sold and will be removed in the near future.

The storage shed located adjacent to the middle entry on the portal bench has been sold and will be removed from the property.

The electric substation used for the underground operations of the Blazon No. 1 Mine will be sold and removed from the property.

The culverts located underneath the mine development waste pile will be removed.

Removal of Footings and Foundations

Once the noted structures and facilities have been removed from the site, NAE will make arrangements for removal of the concrete footings and foundations which remain.

The footings for the loading bin consist of 10 concrete piles approximately 30 inches in diameter. These concrete piles will be removed and buried on the portal bench beneath underground development waste and overburden.

Similarly, the concrete foundation for the underground waste chute and conveyor transfer point will be removed. The concrete structure consists of four (4) rectangular piles, two (2) feet on a side,

approximately 10-15 feet high. This concrete support structure will be removed, broken up, and buried on the portal pad beneath underground development waste and overburden material.

Removal of Culverts

The culverts to be removed from the site are identified on the Reclamation Plan Map (Map 7). Two (2) of the three (3) large 84-inch culverts, Culvert B and Culvert C, along with a portion of Culvert D will remain, as shown on the Reclamation Plan Map (Map 7). Additional information is found in Exhibit 23, Hydrology and Hydraulics.

Removal of Signs and Markers

NAE will retain and maintain all signs and markers until after the release of all bonds for the permit area. These signs shall include identification signs displayed at each point of access, perimeter markers of the disturbed areas, and stream buffer zone markers in areas where reclamation is within 100 feet of Mudd Creek.

Retention of Certain Structures

Because the postmining land use will be for commercial and industrial purposes, several structures and facilities will be retained as part of the reclamation of the site. These structures and facilities which will remain are as follows:

- Main Haul/Access Road
- Improved Access Road
- Existing Mud Creek Road
- General Access Road
- Substation Access Road
- Access Road to Water Tanks
- Culvert B
- Culvert C

- Culvert D
- Lower Sediment Pond Cell
- Upper Sediment Pond Cell
- Ditch A
- Ditch B
- Office, Bath House & Shop
- Septic Tank
- Leach Field
- Powerline
- Main Transformer Pole
- Light Poles
- Culinary and Fire Protection Water Storage Tanks
- Water Main
- Water Well

The location of the above structures and facilities along with an explanation regarding their future use is set forth on the Reclamation Plan Map (Map 7). Their location is also shown on the Postmining Topography/Revegetation Map (Map 8).

Transfer of Water Well

NAE is presently working to transfer the rights of the water well found at a point South 2,640 feet and East 1,056 feet from the NW Corner of Section 4, T14S, R7E, SLB&M, to Jack Otani. A copy of the letter requesting this transfer is set forth in Exhibit 6, May 29, 1985 Letter from Alan Smith of NAE to Utah State Engineer.

Sealing of Underground Openings

NAE developed three (3) entries as shown on the Reclamation Plan Map (Map 7). At the present time, two (2) of the three (3) entries have caved thereby preventing access to any of the old workings by people, livestock, wildlife, and/or machinery. The fan portal entry has not caved. As part of the reclamation work, the fan and associated

structure will be removed and sold. The portal shields for the three (3) entries will be removed, if they can be sold. If not, the shields will be either salvaged for possible future use by Jack Otani or buried when the entries are sealed by development waste and overburden.

There are no regional or site-specific aquifers above the coal found in the area of the Blazon No. 1 Mine. Likewise, there has never been any water discharged from the portals of the Blazon No. 1 Mine. Therefore, NAE anticipates that no discharge of water from the entry system will occur.

The abandonment procedure for the sealing of the underground entries are as follows:

- 1) The fan and associated structure will be removed and sold.
- 2) The portal shields will be sold, if possible, salvaged as scrap, or buried.
- 3) Underground development waste will be placed along the portal bench to the height that will cover the entries. Approximately 4,000 cubic yards of this underground waste material will be needed on the portal bench.
- 4) Any exposed coal will be covered by a minimum of four (4) feet of noncombustible earth material to protect against spontaneous combustion.
- 5) Approximately 1,000 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 with a minimum of 3½ feet of material.

- 6) Six (6) inches of topsoil will be placed over the overburden to ensure that four (4) feet of material covers the underground development waste. An estimated 287 cubic yards of topsoil will be used.

The key objective of permanent portal closure measures is to prevent future access to the abandoned Blazon workings by people, livestock, wildlife, and machinery. The techniques described above will adequately provide for this objective.

Covering of Coal Seams

The disturbed portal bench area will be returned to the topography shown on the Postmining Topography/Revegetation Map (Map 8). Grading and backfilling will be completed such that any coal seams and underground development waste will be covered with four (4) feet of overburden and topsoil material or a lesser depth if approved by UDOGM.

Disposal of Underground Development Waste

As shown on the Reclamation Plan Map (Map 7), there are two (2) underground development waste piles found in the area. The largest pile is found in the drainage directly east of the lower bench area. This pile contains an estimated 4,000 cubic yards of development waste. A smaller storage site is located on the lower portal bench. This pile contains approximately 190 cubic yards of underground development waste. The disposal of the underground development waste will occur as outlined below.

Since it is apparent that approval from OSM to dispose of the underground development waste in the old Clear Creek strip will not be forthcoming, the following alternate plan has been developed for the disposal of the underground development waste.

As much underground development waste as possible will be disposed of on the portal bench. Calculations indicate that all of the waste can be disposed of on the portal bench. Disposal of the waste material on the

portal bench will be in accordance with Figure 3, Typical Section Reclaimed Mine Bench. Care will be taken during the placement of underground development waste material on the mine bench to ensure that waste material is placed only on the cut portion of the mine bench and no waste material will be placed on the fill portion of the mine bench.

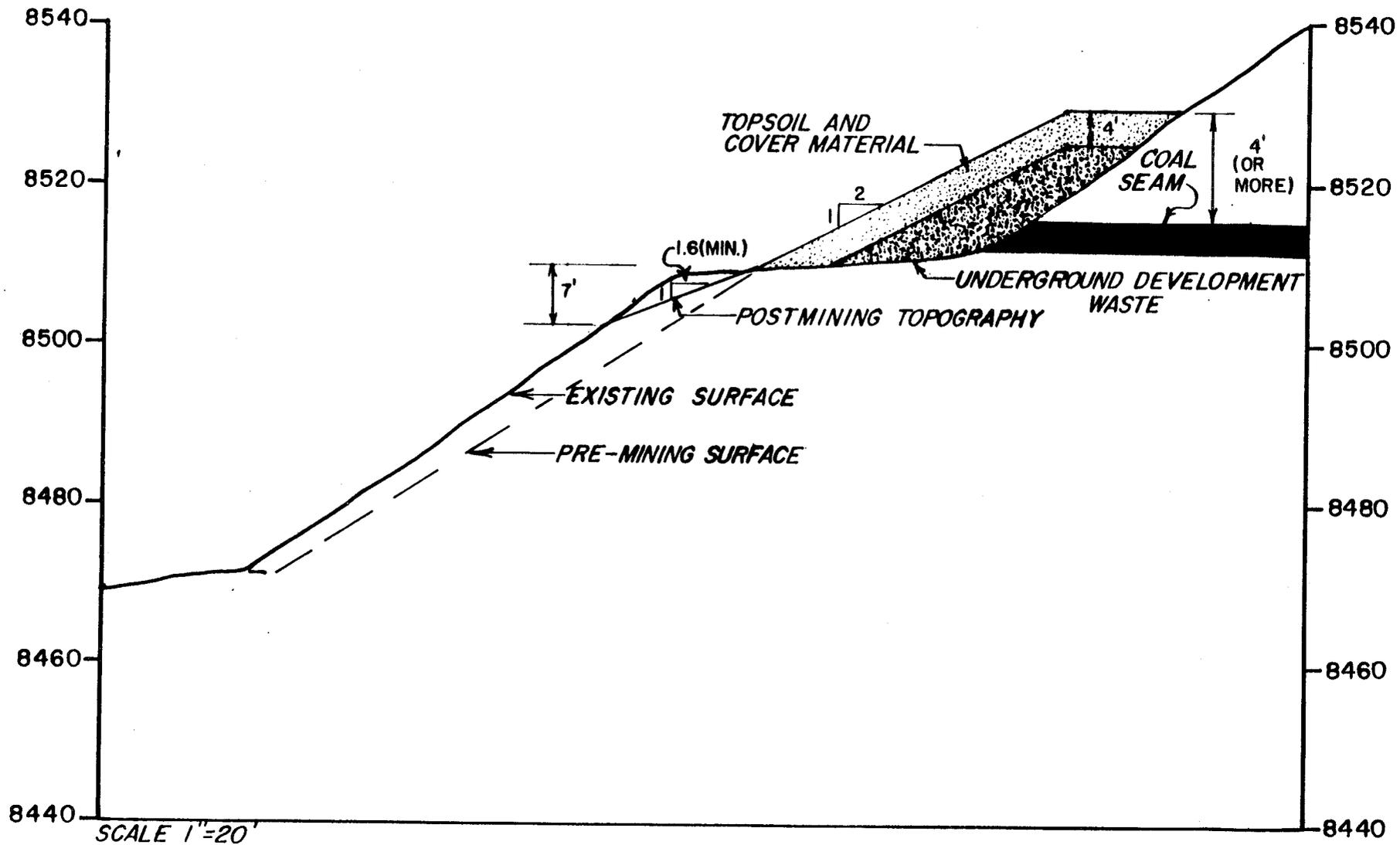
Underground development waste material which cannot be disposed of on the mine bench will be hauled to the alternate waste disposal location shown on the Coal Ownership Map (Map 2). Disposal of underground development waste material at the alternate waste disposal location will be in accordance with the pile geometry shown on Figure 3, Typical Section Reclaimed Mine Bench. The primary constraints on this section are that slopes of the final contoured surface will not exceed 2H:1V. The area will be covered with a total of four (4) feet combined topsoil and cover material. Following placement of the topsoil and cover material, the area will be contoured and revegetated.

NAE has requested that the amount of cover material over the underground development waste be reduced from four (4) feet to one (1) foot, based on the analyses presented in Exhibit 15. In the event that UDOGM approves a reduction in cover thickness, the calculations and quantities of cover material will be in accordance with the approved change.

Backfilling and Grading

The Blazon No. 1 Mine surface facilities area will be returned to the final surface configuration shown on the Postmining Topography/Revegetation Map (Map 8). This configuration will provide sufficient room for the future uses by Mr. Otani and will also conform with the drainage pattern of the surrounding terrain. In addition, this topography will complement and be generally consistent with the surrounding land surface.

Given the steep slopes found in the vicinity of the portal bench, a portion of the face-up area will be left. In the canyon-like landscape of Mud Creek, the steep topography in many places represents what could



TYPICAL SECTION RECLAIMED MINE BENCH

FIGURE 3

be called a natural highwall. The planned postmining configuration of the portal face-up will blend into and complement the surrounding and existing topography.

Underground development waste and overburden material will be placed in a stable configuration on the portal bench to partially cover the mine face-up area. There is no practical way to completely eliminate the face-up area. Any further attempt to reduce or eliminate the face-up area beyond the planned placement of fill materials could be environmentally unsound and unproductive with respect to final reclamation objectives.

The portal face-up area above the entries has been in place for almost five years and no stability or safety problems have been encountered since that time. In addition, it is important to emphasize that the portal face-up area and the outslope beneath the portal bench have been in place during several harsh winters and subsequent high runoff periods. In fact, some of the worse slides that have occurred in the State of Utah have occurred during the 1983 and 1984 runoff periods.

Retention of Portion of Portal Face-Up Area

As previously mentioned in the Backfilling and Grading Section, complete elimination of the portal face-up of the Blazon No. 1 would be physically impossible and environmentally unsound. Therefore, a portion of the face-up area will remain following reclamation activities. To the degree possible, NAE will work to blend the portal pad bench area to complement the surrounding undisturbed terrain.

Procedures for Backfilling and Grading of Portal Bench and Above

1. Utilize underground development waste to cover the portals with a minimum of four (4) feet above the coal seam as shown on Figure 3, Typical Section Reclaimed Mine Bench. Place in lifts of one (1) to

two (2) feet and compact as much as possible. A dozer and/or a front-end loader will be utilized.

2. Use backhoe to reach downslope of portal bench and pull back material as far as possible. The backhoe will place material on the underground development waste and a dozer will spread the material in one (1) or two (2) foot lifts and will work the slope to an approximate 2H:1V slope.

With an inclinometer, NAE will visually site a line on the portal face-up area to establish the crest of the 2H:1V slope. NAE will make sure that this material is placed on cut material from the original portal development work. It should be noted that the complete backfilling or total elimination of the portal face-up area is not possible.

3. In those areas where some failure has occurred above the portal entries, NAE will try to maintain a 2H:1V slope to completely cover the collapsed area. In "brow" or open area beneath the competent sandstone above the entry, NAE will cover and dress the area with a backhoe or dozer to eliminate voids even if subject slope slightly exceeds 2H:1V.
4. Topsoil will be spread on the 2H:1V slope.
5. Appropriate revegetation measures will be performed.

Area E

6. The upper portion of the portal outslope will be pulled back by backhoe and left in roughened condition at approximately 1.6H:1V slope. The crest and toe of this area will blend into the overall slope. Approximately six (6) inches of topsoil will be placed on this area, if possible.

7. 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.
8. On the lower portion of the portal outslope where it has been oversteepened by cutting, these areas will be dressed and graded with a dozer to a 1.6H:1V slope as shown on Figure 4, Typical Section Lower Bench Toe Stabilization.

Area F.

9. This area will be regraded and ripped or scarified. Revegetation will be undertaken as per the Reclamation Plan for Area F.

Site and Soil Stabilization

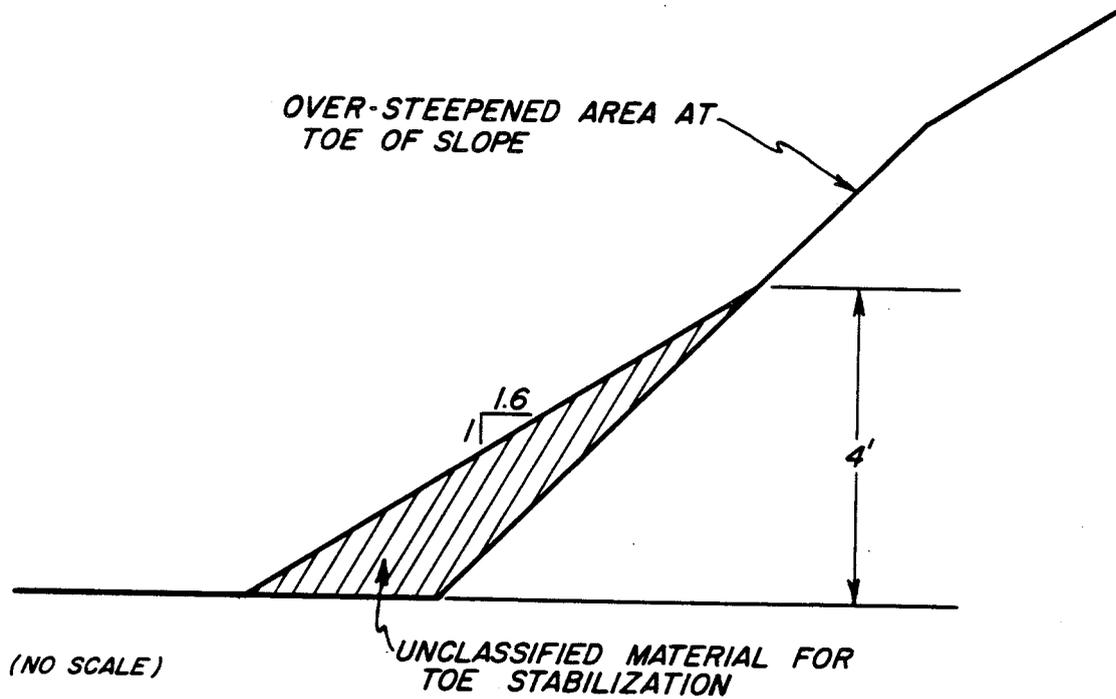
NAE believes that the proposed postmining topography will be stable and suitable for long-term use. Careful placement of underground development waste and overburden material on the portal bench will help strengthen the toe of the face-up area and thereby increase the overall stability of the area. Conversely, no problems are anticipated with the outslope fill of the portal bench.

NAE has prepared a geotechnical analyses of the final face-up and outslopes of the portal bench to ensure that a long-term static safety factor of at least 1.3 is maintained. The results of this geotechnical analyses are set forth in Exhibit 8, Geotechnical Analyses of Postmining Slopes at the Blazon No. 1 Mine.

On reseeded areas, NAE will work with UDOGM to stabilize and seed any areas where rills and gullies deeper than nine (9) inches form.

Scarification of Site

Following grading activities at the site, specifically on the portal bench and former roads leading to the portal bench, the areas will be



TYPICAL SECTION
LOWER BENCH TOE STABILIZATION

FIGURE 4

scarified with a chisel plow or disk to alleviate compaction caused by machinery and to provide a good bonding surface for placement of topsoil material.

Those areas that are too steep for scarification such as the outslope from the portal bench or certain slopes in the draw directly east to the lower bench, will not be scarified but will be left in a roughened condition to promote bonding of topsoil material.

The general areas designated for scarification are Area B, Area D, and Area F, as shown on the Topography/Revegetation Plan Map (Map 8). The total area to be scarified is approximately 0.75 acres.

Redistribution of Topsoil

Existing material found on the outslope of the portal bench will be utilized during reclamation, as this slope is too steep to adequately spread topsoil on. Planned work on the portal cut-slope area is the only available medium for reclamation. As stated above, NAE does not plan to obtain a separate source of material for use in the portal face-up. Simply the material found on the outslope area will be used as "substitute" material. Once grading work is complete on the portal bench area, including the outslope from the portal bench (Area E), two (2) soil samples will be taken and analyzed for the parameters listed on Table 1, Soil Analysis. Based on this analysis and the analyses for certain fertility parameters, NAE will contact UDOGM with regard to fertilization, type, and quantity.

As mentioned above, the material on the outslope will be used as "substitute" material, as it is the only available medium for reclamation on this area. The area itself is quite small; therefore, the amount of material is relatively small.

The planned reclamation calls for utilizing a backhoe to pull back as much material as possible from beneath the portal bench. This material will be used to cover development waste placed on the portal which will

Table 1
SOIL ANALYSIS

Parameter	Method	Reference
Saturation %	Method 27a Saturation Percentage from Oven Drying	1
pH	Method 21a pH Reading of Saturated Soil Paste	1
EC	Method 4b Direct Indicating Bridge	1
Calcium	Method 3a Saturation Extract Analysis by ICP	1
Magnesium	Method 3a Saturation Extract Analysis by ICP	1
Sodium	Method 3a Saturation Extract Analysis by ICP	1
SAR	Calculation	
Texture	Method 43-S Hydrometer Method of Particle-Size Analysis	2
Nitrogen, Total	Method 83-3 Regular Macro-Kjeldhal Method	2
Phosphorus, Available	NH ₄ HCO ₃ -DTPA Extraction Procedure-Analysis by Automated Colorimetric	3
Potassium, available	NH ₄ HCO ₃ -DTPA Extraction Procedure-Analysis by Automated Colorimetric	3
Organic Matter	Method 24 Organic Matter	1
Cation Exchange Capacity	Method 19 Cation Exchange Capacity	1
Alkalinity - Lime %	Method 23c Alkaline-Earth Carbonates from Acid Neutralization	1

- 1 USDA Handbook 60 "Diagnosis and Improvement of Saline and Alkali Soils" 1969
- 2 ASA Monograph No. 9 Methods of Soil Analysis, 1965
- 3 Soltanpour, P.M. "Soil Test Methods Used at Colorado State University" 1981

conversely be covered with topsoil. In performing this operation, the outslope from the portal bench will be left in a somewhat roughened condition with slope changes for erosion control.

Topsoil Distribution Priority

Distribution of the topsoil from the topsoil stockpile area shall be prioritized as follows:

- Six (6) inches of topsoil material will be spread over the reclaimed area underneath the current underground development waste pile. This area is known as the Little Snyder Canyon drainage.
- Topsoil will be spread to a thickness of six (6) inches over the topsoil substitute material covering the final underground development waste stockpile.
- Topsoil will be spread in these areas to a thickness of six (6) inches until all topsoil in the current topsoil stockpile is consumed.
- Remaining areas will be covered with the topsoil substitute material found on the site.

NAE plans to use ACZ INC. Laboratory Division in Steamboat Springs, Colorado, for analytical work. This laboratory uses standard methods of analysis on all samples. All analyses performed by this lab are according to EPA, USGS, OSM, or other approved analytical standards. Attached as Table 1, Soil Analysis is the methods of analyses for the above parameters.

NAE will test topsoil for total nitrogen and available phosphorus, rather than nitrate-nitrogen and phosphorus. NAE will also conduct tests for pH, calcium, magnesium, sodium, sodium adsorption ratio, electrical conductivity, texture, and saturation percentage. These

tests will be completed by ACZ INC. Laboratory Division in Steamboat Springs, Colorado; this laboratory is a division-approved laboratory. ACZ INC. Laboratory Division will use standard methods of analyses as shown in Table 1, Soil Analysis.

Wind and water erosion will be controlled after topsoil replacement by chisel plowing or disking the area along the contour, if possible. The topsoil will be left in a roughened condition to improve moisture retention and to provide a good seed bed.

Soil Sampling

In order to ensure that the reapplied topsoil and other areas to be revegetated will support the proposed postmining vegetation, a soil sampling program will be implemented immediately after replacement of topsoil. After spreading the topsoil and regrading certain overburden surfaces, a sampling program will be initiated. Each sample will consist of a composite of the total depth of the topsoil replaced or the upper 18" to 24" of the overburden material. Soil samples will be taken at the locations shown on the Topography/Revegetation Map (Map 2).

Fertilization

Depending on the results of the soil testing work, NAE will submit recommended fertilizer application rates to UDOGM. No fertilizer will be applied without receiving approval from UDOGM.

Fertilizer will be applied using a cyclone type spreader and will be spread according to the rates determined in conjunction with the soil sampling and analytical testing.

Seeding Amounts and Methods

The proposed seed mixture, as shown in Table 2, Proposed Seed Mixture, contains the diversity necessary for site stability and future erosion control.

Table 2
SEED MIXTURE - Part 1

Species	Pounds Pure Live Seed/Acre
Grasses	
<u>Agropyron riparium</u> (Streambank wheatgrass)	4.0
<u>Agropyron trachycaulum</u> (Slender wheatgrass)	4.0
<u>Bromus marginatus</u> (Mountain brome)	5.0
<u>Poa cambyi</u> (Camby bluegrass)	3.0
<u>Poa pratensis</u> (Kentucky bluegrass)	<u>0.25</u>
Sub-Total - Grasses	16.25
Forbs	
<u>Achillea millefolium</u> (Western yarrow)	0.15
<u>Hedysarum boreale</u> (Sweet vetch)	1.0
<u>Linum lewesii</u> (Blue flax)	2.0
<u>Medicago sativa var Ladak</u> (Ladak alfalfa)	1.0
<u>Osmorhiza occidentalis</u> (Sweet anise)	1.0
<u>Melilotus officinalis</u> (Yellow sweetclover)	<u>2.0</u>
Sub-Total - Forbs	7.15
Woody Plants	
<u>Acer glabrum</u> (Rocky Mountain Maple)	3.0
<u>Amelanchier alnifolia</u> (Serviceberry)	2.5
<u>Artemisia tridentata ssp raseyana</u> (Mountain big sagebrush)	0.1
<u>Mahonia repens</u> (Oregon grape)	2.0
<u>Pseudotsuga menziesii</u> (Douglas fir)	1.0
<u>Ribes cereum</u> (Wax currant)	1.0
<u>Rosa woodsii</u> (Woods rose)	1.5
<u>Sambucus cerulea</u> (Blue Elderberry)	1.0
<u>Symphoricarpos oreophilus</u> (Snowberry)	<u>2.0</u>
Sub-Total - Woody Plants	14.1

Table 2
SEED MIXTURE - Part 2

Species	Stocking
<hr/>	
Transplants along stream	
<u>Salix spp.</u> (Willow)	150 cuttings
<u>Cornus stolonifera</u> (Red-osier dogwood)	50 plants
<u>Prunus virginiana</u> (Chokecherry)	50 plants
<u>Populus tremuloides</u> (Aspen)	150 seedlings

Reseeding work will be conducted during the spring or autumn months. All seeding will be done by broadcast methods utilizing a cyclone seeder. Areas to be reseeded to the mixture shown in Table 2, Proposed Seed Mixture, are Area B, Area C, Area D, Area E, and Area F as shown on the Topography/Revegetation Map (Map 8). Given the relatively small acreage to be seeded (approximately 1.5 acres), seeding by rangeland drill would not be economical or advisable. The cost of supplying the seed for the woody plants alone is estimated to be \$820.00 per acre.

Seedlings will be planted during the spring months of the year. The seedlings to be planted are as shown on Table 2, Proposed Seed Mixture. The proposed woody plant seed mixture will provide 2,410 woody plant stems per acre.

Mulching

After seeding, a straw mulch will be spread on all areas to be seeded. The flat areas will be disked to anchor the mulch and prepare a mellow yet firm seed bed. The area will be seeded with the mixture shown in Table 2, Proposed Seed Mixture.

All areas not receiving topsoil will have two (2) tons of alfalfa mixed into the substitute soil at the time of ripping.

On the steeper slopes found in Area C and Area E as shown on the Postmining Topography/Revegetation Map (Map 8), mulch will be spread and anchored using polypropylene netting. This will provide for future erosion control and protection for the newly seeded areas.

Straw mulch will be used at a rate of approximately 4,000 pounds per acre (2 tons/acre). The straw mulch will not be moldy or rotten; likewise, NAE will avoid using cereal grain mulches unless absolutely nothing else is available. If a grain mulch is used, the mulch will be free of weed seeds.

Irrigation

No irrigation is planned for the reclamation work of the Blazon No. 1 Mine site.

Reclamation Monitoring and Success

A request has been made, as shown in Exhibit 16, to reduce the bond liability period from ten (10) years to five (5) years. If UDOGM grants this request, NAE will monitor revegetation success according to the following schedule:

1st year - NAE will perform a reconnaissance survey on the reseeded site and inspect for shrub survival.

2nd year - NAE will monitor the reseeded area for cover and density and monitor shrub survival.

3rd year - Same as 2nd year.

5th year - Same as 3rd year.

9th year - NAE will monitor the reference area and the reseeded area for density, cover, and productivity.

10th year - Same as 9th year.

Transects will be randomly located within the reference area and the reseeded area. Sample size will be dependent upon the number needed to attain statistical adequacy using at least minimum sample size as presented in UDOGM guidelines. This revegetation monitoring will provide valuable site specific information, especially in the event it becomes apparent that some future modification to the success criteria will be required.

Schedule for Reclamation and Revegetation

NAE will pursue the schedule outlined on Figure 2, Reclamation Schedule, complete closure and reclamation work at the site. Seeding and planting are shown on the reclamation schedule for completeness only. These activities will be undertaken only during the appropriate seasons as noted herein.

Standards for Revegetation Success

As stated earlier in this report, the postmining land use for the Blazon Mine surface facilities will be restored for the commercial and industrial purposes of Jack Otani. The total area of surface facilities is approximately 4.65 acres of which 3.15 acres will remain in their existing condition, while only 1.5 acres will be seeded. NAE is concerned that the previously established reference area does not adequately portray the conditions found in the steep areas to be reclaimed in the 1985 reclamation work. Presently, NAE plans to restore the site for commercial/industrial uses and will only seed certain steeper slopes. Nonetheless, NAE will attempt to utilize the reference area previously established as a means for determination reclamation success. NAE will work with UDOGM to stabilize and reseed areas where rills and gullies form. Monitoring of the reseeded area will take place per the schedule outlined under Reclamation Monitoring and Success.

Protection of the Hydrologic Balance

All runoff during reclamation work from Areas B, C, D, and E and the existing pad area (surface facilities area) will be routed into existing sedimentation ponds as shown on the Postmining Topography/Vegetation Map (Map 8).

Straw bale dikes will be used in Area F to control erosion. These straw bales will be placed prior to construction along the downslope (outslope) side of the road to culvert A's location and beyond as shown on the Postmining Topography/Vegetation Map (Map 8). Sediment fences will be used in area F and area D as shown on the Postmining Topography/Vegetation Map (Map 2). These straw bales and sediment fences will be maintained until requirements of UMC 817.111-117 are met or until the Division determines that the potential for erosion is minimized and grants approval that sediment control is no longer necessary, whichever comes first.

NAE will continue water monitoring at the site during June and September of each year for the duration of the bonding period. However, NAE would like to revise its existing monitoring program to include only a site above and below the mine. The proposed monitoring sites are sites B1 and B3. In addition, NAE will monitor any discharge from the sedimentation ponds found at the site per the requirements of the NPDES permit in force.

NAE proposes to reduce the parameters to be tested. Table 5, Proposed Water Quality Parameter List, indicates the parameters that NAE proposes to test for the duration of the bond period. UDOGM should accept this request as a formal request to modify the existing monitoring program presently undertaken by NAE.

In order to demonstrate the requirements of 817.464, NAE will install and maintain a single stage sampler at the location shown on the Pre-Mining and Post-Mining Land Use Map (Map 3). Samples will be collected monthly during the snow-free months for the last 12 months prior to bond release. The sampler will be installed to delineate between the 10-year, 24-hour event and larger event. All water quality monitoring data will be submitted to UDOGM on a monthly basis.

NAE proposes to take one (1) water sample weekly during the reclamation period. The sample will be taken in Mudd Creek, downstream of the reclamation activity. Parameters tested will be Total Suspended Solids and Settleable Solids. Reclamation water sample data will be submitted to UDOGM on a monthly basis.

Sedimentation Ponds

Jack Otani, the surface owner, has requested that NAE leave the small sediment pond cells located at the site. These sediment ponds are shown on the Reclamation Plan Map (Map 7). Given the small size of the surface area, there should be no real need for any long-term sediment

Table 5
PROPOSED WATER QUALITY PARAMETER LIST

Field Measurements:

- Water Levels or Flow
- pH
- Specific Conductivity (umhos/cm)
- Temperature (°C)

Laboratory Measurements: (mg/l)

- Total Dissolved Solids
 - Total Hardness (as CaCO₃)
 - Carbonate (CO₃⁻²)
 - Bicarbonate (HCO₃⁻)
 - Calcium (Ca)
 - Chloride (CL⁻)
 - Dissolved Iron (Fe)
 - Magnesium (Mg)
 - Manganese (Mn)
 - Potassium (K)
 - Sodium (Na)
 - Sulfate (SO₄⁻²)
-

control. Therefore, these ponds should be more than adequate to maintain long-term sediment control at the site. For calculations and certification of the sediment ponds, refer to Exhibit 23, Hydrology and Hydraulics.

NAE has requested that the current National Pollutant Discharge Elimination System ("NPDES") Permit UT-0023647 be discontinued. A formal request was made in writing to the EPA from Alan Smith of NAE on May 29, 1985. A copy of this letter is set forth in Exhibit 9.

Bond Calculations

Bond calculations have been included as Exhibit 24, Reclamation Bond Estimate.

Bond Release

NAE has requested a release of portions of the performance bond held by UDOGM for reclamation of the Blazon No. 1 Mine. This bond release request is based on reduction of the bond liability period from ten (10) years to five (5) years as requested in Exhibit 16. A request for further reduction in bond amount has been made based on the reduction in development waste cover thickness requested in Exhibit 15. NAE hopes that UDOGM will act soon concerning these requests for reduction in bond amount and liability period.

Disposal of Non-Coal Waste

Any non-coal solid waste generated as a result of reclamation activities at the Blazon No. 1 Mine will be hauled to an approved landfill.

Miscellaneous Maps

The following maps are included in this final closure and reclamation plan:

Map 1 - Blazon No. 1 Mine Surface Ownership, 10/3/83

- Map 2 - Blazon No. 1 Mine Coal Ownership, Dated 9/83
- Map 3 - Blazon No. 1 Mine Premining & Postmining Land Use,
Dated 9/83
- Map 4 - Blazon No. 1 Mine Vegetation, Dated 2/84
- Map 5 - Blazon No. 1 Premining Topography, Dated 10/5/83
- Map 16 - Secondary Road Design, Dated 2/84
- Map 17 - Blazon No. 1 Mine Soils, Dated 2/84

These maps were originally submitted to UDOGM as part of other documents. The Surface Ownership Map (Map 1) has been revised to reflect Jack Otani as surface owner.

Air Resources Protection

NAE will plan and employ fugitive dust control measures during reclamation work including, where necessary:

1. Periodic watering of roads
2. Prompt revegetation of regraded lands

Slides and Other Damage

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.

UMC 817.25 TOPSOIL: NUTRIENTS AND SOIL AMENDMENTS

North American Equities NV will develop a plan for sampling, analysis, and soil amendment of replaced topsoil materials based upon the DOGM guidelines in effect just prior to the completion of mining activities. North American Equities NV will present this plan to DOGM for review and approval prior to initiation of final reclamation.

North American Equities NV will utilize standard farm equipment and implements to apply soil amendments. Fertilization and other soil amendment practices will be scheduled for the fall of the year concurrent with seeding activities, where possible. (Dependent upon the type of soil amendment required, it may be necessary to utilize both the fall and spring seasons for soil amendment applications.)

North American Equities will base selection of appropriate fertilizers or other forms of soil amendment upon the results of the soil sampling program.

UMC 817.97 PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES

The impacts on seeps and springs in the area due to mining activities of the Blazon No. 1 Mine are anticipated to be minimal. The only spring located within the affected area is Spring G-4 as shown on the Hydrology/Geology Map (Map 5). This seep is considered insignificant as a source of water for wildlife and domestic stock as its flow rate is 1 gpm or less. The remaining seeps and springs, which are shown on the Hydrology/Geology Map (Map 5) are outside the permit area and the life of mine affected area, therefore, no disturbance to these springs or seeps due to subsidence is expected.

North American Equities NV plans to implement a fish and wildlife plan which will incorporate several measures considered necessary to limit impacts to fish and wildlife. The mitigation measures proposed for protection of fish and wildlife include, but are not limited to the following:

- Limiting coal haulage to daylight hours
- Prohibiting firearms on mine property
- Fencing of dangerous area(s)
- Employee education on the protection of wildlife resources
- Use of favored browse and cover plant species for revegetation
- Limiting of off-site exploration during spring moose and elk calving season (May 16 - July 16)

North American Equities does not plan to disturb additional surface for operations of the Blazon No. 1 Mine. The current disturbance has affected an area approximately 500 feet in length along Mud Creek. Particular care has been taken to minimize the disturbance to the stream channel and adjacent buffer zone. Although this small area has been affected and will continue to be affected during operation of the Blazon

No. 1 Mine, its significance when compared to the availability of similar habitat in the area is minute. Wildlife utilizing this habitat have been displaced to adjacent areas. The reclamation plan for Mud Creek and the adjacent buffer zone incorporates willow and other favored browse species in the proposed revegetation effort. (Refer to the response under UMC 784.13.) After reclamation has been completed, and the vegetative cover re-established, wildlife originally utilizing the area will become re-established on the reclaimed land.

North American Equities NV does not plan to disturb any lands in the high priority summer range areas as shown on Plate No. 3 of the Mining and Reclamation Plan. Only a very small area of the crucial-critical range will be disturbed during the life of the operation. Following the operation's completion, reclamation activities will be carried out to establish native vegetation on the disturbed area. Revegetation and reclamation of this area are more fully discussed in Section UMC 784.13, Reclamation Plan: General Requirements.

The surface disturbance for the Blazon No. 1 Mine is less than five (5) acres and is used for offices, coal handling facilities, and truck loading facilities. Coal exploration activity will be limited. Due to the limited existing and planned disturbance, the effects or impacts to fish and wildlife are expected to be minimal.

North American Equities NV will show the Utah Division of Wildlife Resources film presentation on wildlife impacts at coal mines to all mine personnel before resumption of mining activities at the Blazon No. 1 Mine. North American Equities NV believes this program will be very informative and beneficial regarding measures of wildlife and fish protection.

A discussion with Mr. Robert Hassenyager of the Utah Division of Wildlife has indicated that there are no threatened or endangered species of mammals, reptiles, or fish in the vicinity of the Blazon No. 1 Mine permit area. He is currently doing a further check on possible endangered raptors and will submit his findings when the study has been completed.

Mr. George Cook of the Price Office of the SCS reports that a detailed study of the plant life in the vicinity of the Blazon No. 1 Mine has not delineated any threatened or endangered plant species.

UMC 817.106 REGRADING OR STABILIZING RILLS AND GULLIES

Regular site inspections will be made of the reclaimed areas to identify any areas where the formation of rills and gullies is occurring. In any areas where rill erosion becomes evident, North American Equities NV will construct such surface water control devices as water bars, diversion ditches, contour furrows, or other surface features to control the runoff.

Any necessary erosion control features will be constructed using small farm equipment and/or hand methods to minimize disturbance. If rills and gullies must be repaired, leveling or grading in localized areas will be accomplished in a similar manner. Where severe gulling must be repaired, small crawler tractors or front end loaders will be utilized to complete the backfilling and grading work.

In all repair work North American Equities NV will confine disturbance to the immediate area of rills and gullies. Frequent monitoring to identify any erosion will ensure that any necessary repairs are made on a timely basis and that resulting areal disturbance is minimized.

CONCLUSION

NAE has worked diligently over the course of the last several months to respond to all concerns voiced by UDOGM regarding the reclamation of the Blazon No. 1 Mine. NAE is anxious to complete the necessary reclamation work so that the property can be transferred to Jack Otani for his use and that the NAE bond can be released.

It is important to emphasize that only 4.65 acres have been affected by the surface facilities of the Blazon No. 1 Mine. Approximately 3.15 acres will be left in the existing configuration for Mr. Otani, while a mere 1.5 acres need to be seeded for erosion control. Certainly, UDOGM should recognize the extremely small size of the area and the minimal amount of reclamation work necessary to achieve the desired postmining land use for commercial and industrial purposes.

NAE would again like to stress that the decision to close and reclaim the Blazon No. 1 Mine was a difficult one. A substantial investment of both money and time was made by NAE in the property and project. Although NAE has chosen to close and reclaim the mine, a significant financial loss will still be experienced.

In this light, NAE wants to minimize or eliminate any unnecessary costs in closing and reclaiming the site. Any extraneous delays and/or costs must be avoided during the forthcoming reclamation work.