*To enter text, click in the box and type your response. If a box already contains an entry select the entry and type the replacement. You can use the **tab** key to move from one field to the next. To select a check box, click in the box or type an x.*

GENERAL INFORMATION

Permitte Name	Castle Gate Holding Company
Mine Name	Castle Gate Mine
Operator Name (If other then permittee)	
Permit Expiration Date	December 24, 2004
Permit Number	C/007/004
Authorized Representative Title	Johnny Pappas, Sr. Environmental Engineer
Phone Number	(435) 472-4741
Fax Number	(435) 472-4782
E-mail Address	jpappas@rag-american.com
Mailing Address	847 Northwest Highway 191, Helper, Utah 84526
Resident Agent	C.T. Corporation
Resident Agent Mailing Address	50 West Broadway, Salt Lake City, Utah 84101
Number of Binders Submitted	Two

IDENTIFICATION OF OTHER PERMITS

Identify other permits that are required in conjunction with mining and reclamation activities.

Permit Type	ID Number	Description	Expiration Date
MSHA Mine ID(s)	4200165	Legal Identity	
	4201202	Legal Identity	
MSHA Impoundment(s)	N/A		
NPDES/UPDES Permit(s)	UTG040012	UPDES Permit	April 30, 2003
PSD Permit(s) (Air)	N/A		

Other

RECEIVED
MAR 20 2002
DIV OF OIL GAS & MINING

CERTIFIED REPORTS

List the certified inspection reports as required by the rules and udder the approved plan that must be periodically submitted t the Division. Specify whether the information is included as Appendix A to this report or currently on file with the Division.

Certified Reports:	Required		Included or on file with DOGM		Comments
	Yes	No	Included	On File	
Excess Spoil Piles	☐	☒	☐	☐	
Refuse Piles	☐	☒	☐	☐	
Impoundments	☒	☐	☒	☐	
Other					
	☐	☐	☐	☐	
	☐	☐	☐	☐	

REPORTING OF OTHER TECHNICAL DATA

List other technical data and information as required under the approved plan, which must be periodically submitted to the Division. Specify whether the information is included as Appendix B to this report or currently on file with the Division.

Technical Data:	Required		Included or on file with DOGM		Comments
	Yes	No	Included	On file	
Climatological	☐	☒	☐	☐	
Subsidence Monitoring	☐	☒	☐	☐	
Vegetation Monitoring	☒	☐	☒	☐	Phase II Release Study - Hardscrabble
Raptor Survey	☐	☒	☐	☐	
Soils Monitoring	☐	☒	☐	☐	
Water Monitoring	☒	☐	☐	☒	Division Data Base
First quarter	☒	☐	☐	☒	
Second quarter	☒	☐	☐	☒	
Third quarter	☒	☐	☐	☒	
Fourth quarter	☒	☐	☐	☒	
Geological / Geophysical	☐	☒	☐	☐	
Engineering	☐	☒	☐	☐	
Other Data					
	☐	☐	☐	☐	
	☐	☐	☐	☐	
	☐	☐	☐	☐	
	☐	☐	☐	☐	

LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION

Change in administration or corporate structure can often bring about necessary changes to information found in the mining and reclamation plan. The Division is Requesting that each permittee review and update the legal, financial, compliance and related information in the plan as part of the annual report. Provide the department of Commerce, annual Report of Officers, or other equivalent information as necessary to ensure that the information provided in the plan is current. Provide any other change as necessary

regarding land ownership, lease acquisitions, legal results from appeals of violations, or other changes as necessary to update information required in the mining and reclamation plan. Include and certified financial statements, audits or worksheets which may be required to meet bonding requirements. Specify whether the information is currently on file with the Division or included as Appendix C to the report.

Legal / Financial Update	Required		Included or on File with DOGM		Comments
	Yes	No	Included	On file	
Department of Commerce, Annual Report Officers	☒	☐	☒	☐	
Other					
	☐	☐	☐	☐	
	☐	☐	☐	☐	
	☐	☐	☐	☐	

MINE MAPS

Copies of mine maps, current and up-to-date through at least December 31, 2001, are to be provided to the Division as Appendix D to this report in accordance with the requirements of R 645-301-525.270. These map copies shall be made in accordance with 30 CFR 75.1200 as required by MSHA. Upon request, the Division shall keep mine maps confidential.

Map Number(s)	Map Title/ Description	Confidential Yes	Confidential No
No Mining Conducted		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐

OTHER INFORMATION

Please provide any comments of further information to be included as part of the Annual Report. Any other attachments are to be provided as Appendix E to this report. If information is submitted as a group rather then by individual mine, please identify each of the mine's data in the list below.

Additional attachment to this report? **Yes** ☐ **No** ☒

APPENDIX A

Certified Reports

Excess Spoil Piles
Refuse Piles
Impoundments

As required under R645-301-514

Plateau Mining Corporation

2001 Sediment Pond Certification

I hereby certify that I am a Registered Professional Engineer in the State of Utah. I certify that I have made an inspection of Sediment Ponds at Plateau Mining Corporation's Willow Creek Mine. All of the pond embankments appear to be stable and in good physical condition. There are no apparent structural weaknesses or other hazardous conditions. I certify that I have reviewed the documentation pertaining to Attachment A, and that to the best of my knowledge the information shown thereon is accurate.

W. John Borla

W. John Borla

Date: 12/19/01

REGISTERED PROFESSIONAL ENGINEER
W. JOHN BORLA
No. 172351
STATE OF UTAH

Attachment A
Sediment Ponds Storage Capacities

Pond	Date	Decant Elevation	Sediment Storage Capacity in A.F.	Sediment Storage Volume Used in %	Sediment Storage Volume Remaining in A.F.
1	11/15/01	6163.7	4.6	30	3.22
2	11/15/01	6154.8	0.052	5	0.049
10*	11/15/01	94.6	0.017	20	0.014
11	11/11/01	6140.7	0.35	50	0.17
12A	11/15/01	6103.6	0.64	25	0.48
12B	11/15/01	6095.05	0.35	35	0.23
13	11/15/01	6205.0	3.14	45	1.74
14*	11/15/01	95.3	0.72	30☆	0.50
15*	11/15/01	98.2	0.45	10	0.41

*Elevation relative to open spillway elevation of 100.0.

☆Based on estimate due to water in the pond.

APPENDIX B

Reporting of Technical Data

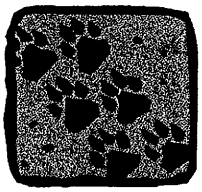
Including monitoring data, reports, maps, and other information
As required under the approved plan or as required by the Division

In accordance with the requirement of R645-310-130 and R645-301-140

VEGETATION MONITORING FOR PHASE II BOND RELEASE IN HARDSCRABBLE CANYON

2001

FOR THE
PLATEAU MINING CORPORATION



Prepared by

MT. NEBO SCIENTIFIC, INC.
330 East 400 South, Suite 6
P.O. Box 337
Springville, Utah 84663
(801) 489-6937

for

PLATEAU MINING CORPORATION
847 Northwest Highway 191
Helper, Utah 84526

Patrick Collins, Ph.D.

Fieldwork: August 2001
Report: January 2002

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VEGETATION MONITORING FOR PHASE II BOND RELEASE IN HARDSCRABBLE CANYON

INTRODUCTION

Objectives for Monitoring

Hardscrabble Canyon in Carbon County Utah has a rich history in coal mining activities. Coal mining areas previously disturbed by these mining activities have been reclaimed and reseeded with the 'final' plant seed mixture. Vegetation in the reclaimed areas was sampled in the growing season of 2001 as a means to monitor the success of final revegetation efforts. A certain degree of success could determine whether or not Phase II bond release would be possible. Phase II bond release applications are sought through the State of Utah, Division of Oil, Gas and Mining (DOGM).

A Reference Area, or an area previously chosen to be a standard of success for the revegetation at Hardscrabble Canyon, has also been sampled for comparisons.

General Site Description

The average elevation of the Reclaimed Area of Hardscrabble Canyon was approximately 6,700 ft

above sea level. The canyon sides are dominated by pinyon-juniper and Gambel's oak-grass plant communities. Most of the Reclaimed Area were located near the canyon bottoms that, prior to disturbance, were probably once dominated by Gambel's oak, sagebrush and grass communities. The Reclaimed Areas were seeded with native plant seeds.

Reference Area

A general Reference Area to be used as a standard for final revegetation success standards was chosen at a much earlier date by representatives of the mining company and the State of Utah, Division of Oil, Gas & Mining (DOGM). The Mining and Reclamation Plan (MRP) states that "the AML Reference Areas shown on Exhibit 9-6 will be used to evaluate previously mined areas". Because the AML (Abandoned Mined Lands) areas are relatively extensive, at least to be sampled as one Reference Area, a biologist from DOGM along with an official from Plateau Mining Corp., chose a subset portion of the AML areas that would be representative and therefore be used as the Reference Area. This area was located in a nearby canyon called Sowbelly Canyon. More specifically, the Reference Area was located down-canyon (or south) and very close to the previously disturbed mined areas that have also been reclaimed in Sowbelly Canyon. In fact, it is the same Reference Area that was used for a standard for revegetation success of the reclaimed areas in Sowbelly Canyon.

METHODS

Quantitative and qualitative data were taken from the vegetation of the Reclaimed Area in Hardscrabble Canyon and the Reference Area in Sowbelly Canyon. Sampling was conducted in August 2001. Methodologies used for sampling were performed in accordance with the guidelines supplied by DOGM.

Transect and Quadrat Placement

Random/regular placement of sample quadrats were designed as an attempt to provide unbiased accuracy of the data compiled. This was accomplished by establishing one long transect line along the entire length of the Reclaimed Area. This line was placed in the lowest portion of the reclaimed drainage system. At regular intervals along the drainage transect line, random numbers were generated and used to measure distances at right angles from the drainage and to determine sample locations. Whether these random numbers were odd or even determined which side of the drainage a given quadrat was placed. The random number selected would be high enough to place quadrats to the lateral limits of the Reclaimed Area and all areas in-between. This insured that the sample quadrats were placed randomly over the entire study area in an attempt to adequately represent the site as a whole. The sample points that were placed randomly in the drainage were marked on the raw data sheets so they could be studied separately if desired.

Cover, Frequency and Composition

Cover estimates were made using ocular methods with meter square quadrats. Species composition and relative frequencies were also assessed from the quadrats. Additional information recorded on the raw data sheets were: estimated precipitation, slope, exposure, grazing use, animal disturbance and other appropriate notes. Plant nomenclature follows "A Utah Flora", (Welsh et al. 1993).

Sample Size & Adequacy

Sampling adequacy was calculated using the formula given below.

$$nMIN = \frac{t^2 s^2}{(dx)^2}$$

where,

nMIN	= minimum adequate sample
t	= appropriate confidence t-value
s	= standard deviation
x	= sample mean
d	= desired change from mean

The values used for "t" and "d" insured that sample adequacy was met with 90% confidence within a 10% deviation from the true mean.

Diversity & Similarity Indices

There are several well-documented methods to assess diversity and similarities in plant communities. The "Motyka Index" is a modified form of the "Sorenson Index", both similarity indices. This index was used on the data and the equation is shown below:

$$IS_{MO}=\left(\frac{2MW}{MA+MB}\right)x100$$

where,

MW = $\sum$ of the smaller quantitative values of species of two communities,
MA = $\sum$ of the quantitative values of all species in one community,
MB = $\sum$ of the quantitative values of all species in another community.

Two diversity indices have been reported in this document for the Reclaimed and Reference Areas. MacArthur's Diversity Index is an effective diversity measurement and is computed using the following equation:

$$1/\sum pi^2$$

where,

pi is the proportion of sum frequency contributed by the *i*th species in the sample area of concern.

The proportional contribution of each species is then squared and the values for all species in the sample areas are summed. This index integrates the number of species and the degree to which frequency of occurrence was equitably distributed among those species.

Another diversity measurement was provided that shows the average number of species encountered at each quadrat, providing a value for species diversity.

Photographs

Color photographs of each sample area were taken at the time of sampling and submitted with this report.

Raw Data

The raw data for total cover, cover by species, frequency and composition were also submitted in the Appendix of this report which should facilitate future scrutiny of the data and further statistical testing if desired.

RESULTS

Reclaimed Area

The total living cover of the Reclaimed Area in Hardscrabble Canyon was 44.82%, 44.31% of which came from understory cover (Table 1). Rock cover was also a major component of the ground cover at 25.19%. Grasses dominated the living cover and was calculated to be 61.00% of the total understory cover followed by forbs and woody species at 26.56% and 12.45%, respectively (Table 1).

As shown on Table 2, the most common plant species as indicated by cover and frequency was thickspike wheatgrass (*Elymus lanceolatus*) followed by western wheatgrass (*Elymus smithii*) and Indian ricegrass (*Stipa hymenoides*). Although several forbs were present in the sample quadrats, the most common by a narrow margin was Pacific aster (*Aster chilensis*) followed by Palmer penstemon (*Penstemon palmeri*). Rubber rabbitbrush (*Chrysothamnus nauseosus*) and big sagebrush (*Artemisia tridentata*) were the most common understory shrub species. Several other woody species were also present in the Reclaimed Area (see Table 2).

Reference Area

As noted previously, the Reference Area for Hardscrabble Canyon was located in Sowbelly Canyon. The total living cover here was 45.63% (Table 3). Most of this cover was from the understory cover. Again, rock was a major component of the ground cover at 19.33%.

Like the Reclaimed Area, grasses comprised the majority of the understory cover at 70.55% (Table 3). However, unlike the Reclaimed Area, shrubs were the next most important lifeform, followed by grasses (but not by a very wide margin).

The most common plant species in the Reference Area were the same grasses as were found in the Reclaimed Area – western wheatgrass and thickspike wheatgrass (Table 4). Unlike the Reclaimed Area, fourwing saltbush (*Atriplex canescens*), a shrub, was the next most common species. Also, and very dissimilar to the Reclaimed Area, there were only two forb species present in the sample

quadrats. The two forbs were blue-leaf aster (*Aster glaucodes*) and yellow sweetclover (*Melilotus officinalis*).

FIG. 1. STUDENT'S T TEST - A Comparison Between the Reclaimed Area at Hardscrabble Canyon and its Reference Area.

Reclaimed Area: $\bar{x}$=44.82; s=13.31; n=80

Reference Area: $\bar{x}$=45.63; s=12.41; n=40

t = -0.321; df = 118; SL = N.S.

Data Set Comparisons

Comparisons were made between the data of the Reclaimed Areas at Hardscrabble Canyon and its Reference Area. To begin, statistical tests were implemented comparing the total living plant cover of the two areas. A "Student's t-test" analysis suggested there was *no significant difference between the Reclaimed Area cover when it was compared to the Reference Area* (Fig. 1).

Next, although achievement of final diversity standards are not required for Phase II Bond Release, regulatory agencies usually require some type of discussion about diversity as a means of monitoring trends, hopefully toward greater species diversity. The Motyka Index was recommended to be used to compare species diversity in the Plateau's Mining and Reclamation Plan (MRP). Although this index is more of a 'similarity index' than a 'diversity index', it has been employed here to compare the data sets. Language in the MRP assigned the following categories to be used for comparisons with the Motyka Index:

Non-Weedy Shrub Cover,
Weedy Shrub Cover,
Native Perennial Grass Cover,
Introduced Perennial Grass Cover,
Non-Weedy Forb & Grass Cover,
Weedy Forb & Grass Cover.

FIG. 2. MOTYKA INDEX - A Comparison Between the Reclaimed Area at Hardscrabble Canyon and its Reference Area.

$$IS_{MO}=\left(\frac{2MW}{MA+MB}\right)x100=70.206$$

When using the above categories and employing the Motyka Index, the similarity value between the two communities was 70.21% (Fig. 2).

MacArthur's Diversity Index was also employed to the data sets of the Reclaimed and Reference Area. This comparison suggested that the total diversity of the Reclaimed Area was greater than that of the Reference Area by quite a wide margin (Fig. 3).

FIG. 3. MacARTHUR'S INDEX - A Comparison Between the Reclaimed Area at Hardscrabble Canyon and its Reference Area.

$1/\sum pi^2 =$

Reclaimed Area: 16.433

Reference Area: 6.430

Still another method of comparing species diversity of the two areas is to simply calculate the mean number of species present in the sample quadrats. Results from this method also suggested that the Reclaimed Area was more diverse with respect to species when compared to the Reference Area (Fig. 4).

FIG. 4. AVERAGE NUMBER OF SPECIES PER SQUARE METER- A Comparison Between the Reclaimed Area at Hardscrabble Canyon and its Reference Area.

$\bar{x}$ NO. SPP/M^2 =

Reclaimed Area: 3.93

Reference Area: 3.03

DISCUSSION

Approval by the State of Utah for Phase II Bond Release is dependent on several factors. One of the most important conditions is probably whether or not the reclaimed site is controlling erosional sediments. It states in the State Rules that: "*No part of the bond or deposit will be released under this paragraph so long as the lands to which the release would be applicable are contributing suspended solids to streamflow or runoff outside the permit area in excess of the requirements set by UCA 40-10-17(j) of the Act and by R645-301-751*". Comparing "background" conditions (or in this case the approved Reference Area), it has been shown that the cover values, so important for erosion control, of the Reclaimed Area is not statistically dissimilar than the Reference Area.

The State of Utah also encourages the collection of quantitative data that can indicate which plant species are growing on the Reclaimed Area, along with a quantified amount of each of the species that are becoming established. Reporting cover by species and frequency enables one to portray this information as well as calculate community similarity, community diversity, and species diversity. One community similarity index suggested that the Reclaimed Area are relatively similar to the Reference Area with respect to cover of shrubs, perennial grasses, combined herbaceous species, and weeds (Motyka). Two diversity indices suggested that the Reclaimed Area had greater diversity than the Reference Area (MacArthur's Diversity Index and Average Number of Species Present) .

These data analyses presented in this report suggest that the revegetation at Hardscrabble Canyon is progressing well. It is therefore proposed that with the statistical, similarity, and diversity comparisons described above, Phase II bond reduction through the State of Utah is probably warranted.

TABLE 1: Total cover and composition summary for the Reclaimed Areas in Hardscrabble Canyon.

TOTAL COVER	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE
Living Cover (o)	0.50	4.44	80
Living Cover (u)	44.31	13.29	80
Living Cover (o+u)	44.82	13.31	80
Litter	11.11	6.90	80
Bareground	19.39	13.01	80
Rock	25.19	14.69	80
COMPOSITION (u)			
Trees/shrubs	12.45	21.46	80
Forbs	26.56	26.08	80
Grasses	61.00	28.17	80

o = overstory
u = understory

TABLE 2: Species cover and frequency summary for the Reclaimed Areas in Hardscrabble Canyon.

SPECIES	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE	RELATIVE FREQUENCY
OVERSTORY				
Populus fremontii	0.50	4.44	80	1.25
UNDERSTORY				
TREES & SHRUBS				
Artemisia nova	0.06	0.56	80	1.25
Artemisia tridentata	1.28	4.57	80	11.25
Atriplex canescens	0.94	4.81	80	6.25
Ceratoides lanata	0.38	1.54	80	6.25
Chrysothamnus nauseosus	1.96	5.56	80	18.75
Gutierrezia sarothrae	0.13	0.78	80	2.50
Quercus gambelii	0.94	8.33	80	1.25
Rosa woodsii	0.25	2.22	80	1.25
FORBS				
Achillea millefolium	0.06	0.56	80	1.25
Artemisia dracunculus	1.06	3.42	80	13.75
Aster chilensis	2.75	7.70	80	22.50
Capsella bursa-pastoris	0.06	0.56	80	1.25
Grindelia squarrosa	0.13	1.11	80	1.25
Hedysarum boreale	1.54	5.99	80	12.50
Kochia scoparia	0.31	1.99	80	2.50
Linum lewisii	0.06	0.56	80	1.25
Machaeranthera canescens	1.04	2.16	80	20.00
Medicago sativa	0.19	0.95	80	3.75
Melilotus officinalis	1.69	6.42	80	10.00
Penstemon palmeri	2.03	5.24	80	20.00
Penstemon sp.	0.19	0.95	80	3.75
Salsola pestifer	0.06	0.56	80	1.25
Sisymbrium altissimum	0.50	3.92	80	2.50
Viguiera multiflora	0.06	0.56	80	1.25

TABLE 2: *(continued)*

GRASSES

Agropyron cristatum	0.31	1.45	80	5.00
Bromus carinatus	0.31	1.45	80	5.00
Bromus tectorum	1.50	5.50	80	8.75
Dactylis glomeratus	0.38	2.47	80	2.50
Elymus cinereus	2.75	5.80	*80*	30.00
Elymus hispidus	0.19	0.95	80	3.75
Elymus lanceolatus	8.85	10.57	80	55.00
Elymus salinus	1.38	5.30	80	8.75
Elymus smithii	4.44	8.87	80	36.25
Elymus spicatus	2.19	4.10	80	26.25
Elymus trachycaulus	0.25	1.56	80	2.50
Poa pratensis	0.19	0.95	80	3.75
Poa secunda	1.00	4.06	80	8.75
Stipa hymenoides	2.94	6.340	80	27.50

TABLE 3: Total cover and composition summary for the Reference Area for Hardscrabble Canyon (located in Sowbelly Canyon).

TOTAL COVER	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE
Living Cover (o)	0.50	2.18	40
Living Cover (u)	45.13	12.52	40
Living Cover (o+u)	45.63	12.41	40
Litter	27.38	13.78	40
Bareground	8.18	7.14	40
Rock	19.33	15.86	40
COMPOSITION			
Shrubs	17.75	19.02	40
Forbs	11.69	19.96	40
Grasses	70.55	23.02	40

o = overstory
u = understory

TABLE 4: Species cover and frequency summary for the Reference Area in Hardscrabble Canyon (located in Sowbelly Canyon).

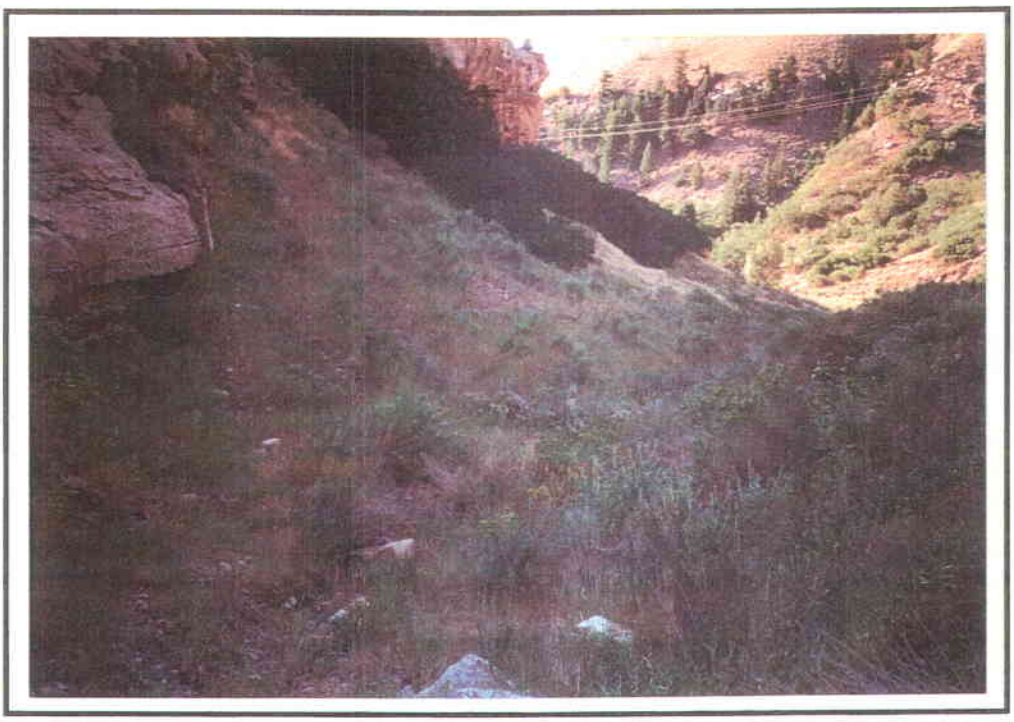
SPECIES	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE	RELATIVE FREQUENCY
OVERSTORY				
Quercus gambelii	0.50	2.18	40	5.00
UNDERSTORY TREES & SHRUBS				
Artemisia tridentata	0.38	1.73	40	5.00
Atriplex canescens	4.48	8.37	40	32.50
Chrysothamnus nauseosus	3.70	7.53	40	27.50
Quercus gambelii	0.25	1.56	40	2.50
FORBS				
Aster glaucodes	4.55	8.01	40	32.50
Melilotus officinalis	0.70	2.57	40	10.00
GRASSES				
Bromus carinatus	0.75	3.27	40	7.50
Bromus tectorum	0.13	0.78	40	2.50
Dactylis glomerata	0.50	1.87	40	7.50
Elymus cinereus	0.88	5.46	40	2.50
Elymus hispidus	0.25	1.56	40	2.50
Elymus lanceolatus	11.58	12.73	40	70.00
Elymus smithii	15.13	12.07	40	77.50
Elymus trachycaulus	0.88	5.46	40	2.50
Poa pratensis	0.25	1.56	40	2.50
Stipa hymenoides	0.75	2.11	40	12.50

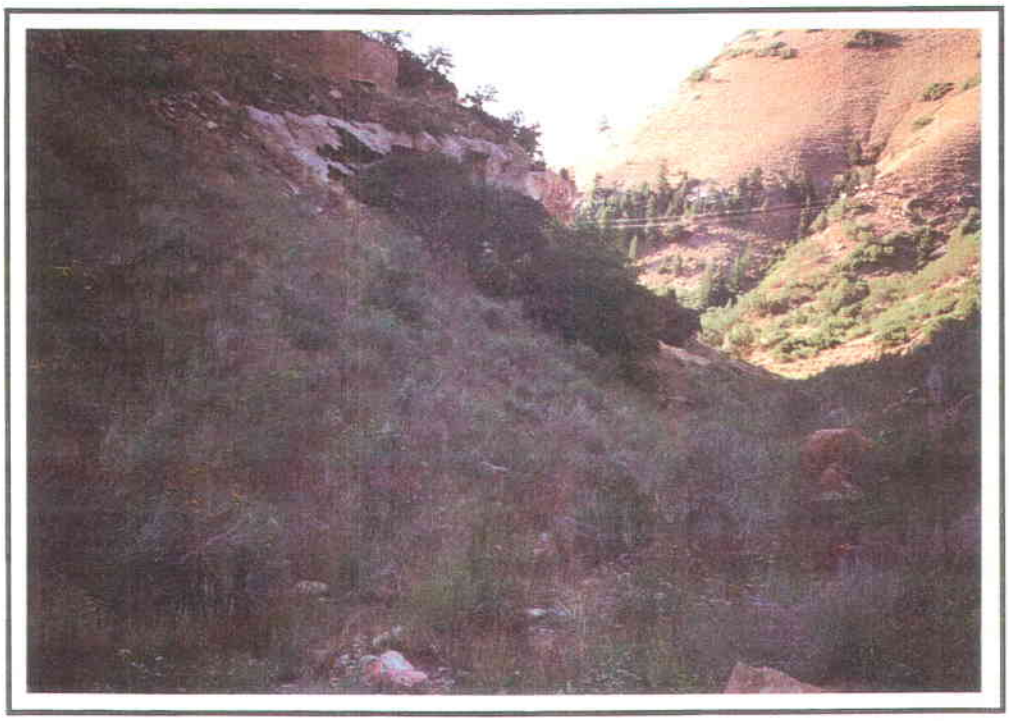
COLOR PHOTOGRAPHS

Reclaimed Areas in Hardscrabble Canyon

Reclaimed Areas

Reference Area for Hardscrabble Canyon





APPENDIX

Raw Data

PLATEAU MINING CORP
Hardscrabble (Sowbelly)
Reclaimed Area
Exposure: Variable
Slope: Variable
Sample Date: 29 Aug '01

	1.00	2.00	3.00	4.00	5.00	6.00
OVERSTORY COVER						
Populus fremontii	0.00	0.00	0.00	0.00	0.00	0.00
UNDERSTORY COVER						
TREES & SHRUBS						
Artemisia nova	0.00	0.00	0.00	0.00	0.00	0.00
Artemisia tridentata	0.00	0.00	30.00	0.00	0.00	10.00
Atriplex canescens	0.00	0.00	0.00	0.00	0.00	0.00
Ceratoides lanata	0.00	0.00	0.00	0.00	0.00	0.00
Chrysothamnus nauseosus	0.00	0.00	0.00	0.00	0.00	0.00
Gutierrezia sarothrae	5.00	0.00	0.00	0.00	0.00	0.00
Quercus gambelii	0.00	0.00	0.00	0.00	0.00	0.00
Rosa woodsii	0.00	0.00	0.00	0.00	0.00	0.00
FORBS						
Achillea millefolium	0.00	0.00	0.00	0.00	0.00	0.00
Artemisia dracunculus	5.00	0.00	25.00	10.00	0.00	0.00
Aster chilensis	0.00	15.00	0.00	0.00	10.00	10.00
Capsella bursa-pastoris	0.00	0.00	0.00	0.00	0.00	0.00
Grindelia squarrosa	0.00	0.00	0.00	0.00	10.00	0.00
Hedysarum boreale	0.00	0.00	0.00	0.00	0.00	0.00
Kochia scoparia	0.00	0.00	0.00	0.00	0.00	0.00
Linum lewisii	0.00	0.00	0.00	0.00	0.00	0.00
Machaeranthera canescens	0.00	0.00	0.00	0.00	0.00	5.00
Medicago sativa	0.00	0.00	0.00	0.00	0.00	0.00
Melilotus officinalis	0.00	0.00	0.00	0.00	0.00	0.00
Penstemon palmeri	0.00	0.00	0.00	0.00	0.00	0.00
Penstemon sp.	0.00	0.00	0.00	0.00	0.00	0.00
Salsola pestifer	0.00	0.00	0.00	0.00	0.00	0.00
Sisymbrium altissimum	0.00	0.00	0.00	0.00	0.00	0.00
Viguiera multiflora	0.00	0.00	0.00	0.00	0.00	5.00
GRASSES						
Agropyron cristatum	0.00	0.00	0.00	0.00	0.00	0.00
Bromus carinatus	0.00	0.00	0.00	0.00	0.00	0.00
Bromus tectorum	0.00	0.00	15.00	0.00	20.00	0.00
Dactylis glomeratus	0.00	0.00	0.00	10.00	0.00	0.00
Elymus cinereus	0.00	0.00	0.00	0.00	0.00	0.00
Elymus hispidus	0.00	0.00	0.00	0.00	0.00	0.00
Elymus lanceolatus	0.00	0.00	0.00	0.00	0.00	0.00
Elymus salinus	0.00	0.00	0.00	0.00	0.00	5.00
Elymus smithii	0.00	0.00	0.00	0.00	0.00	0.00
Elymus spicatus	0.00	0.00	0.00	20.00	0.00	0.00
Elymus trachycaulus	0.00	10.00	0.00	0.00	0.00	0.00
Poa pratensis	5.00	0.00	0.00	0.00	0.00	0.00
Poa secunda	0.00	0.00	0.00	0.00	0.00	0.00
Stipa hymenoides	20.00	0.00	0.00	10.00	10.00	0.00

COVER						
Overstory Cover (o)	0.00	0.00	0.00	0.00	0.00	0.00
Understory Cover (u)	35.00	25.00	70.00	50.00	50.00	35.00
Litter	5.00	5.00	25.00	35.00	4.00	5.00
Bareground	40.00	5.00	1.00	5.00	45.00	40.00
Rock	20.00	65.00	4.00	10.00	1.00	20.00
% UNDERSTORY COMPOSITION						
Shrubs	14.29	0.00	42.86	0.00	0.00	28.57
Forbs	14.29	60.00	35.71	20.00	40.00	57.14
Grasses	71.43	40.00	21.43	80.00	60.00	14.29
TOTAL LIVING COVER (o+u)	35.00	25.00	70.00	50.00	50.00	35.00

7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	20.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35.00	0.00	0.00	0.00	0.00	5.00	0.00	5.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	5.00	0.00	5.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	5.00	0.00	0.00	0.00	10.00	0.00	0.00
0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	5.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	20.00	0.00	0.00	15.00	5.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	35.00	0.00	8.00	0.00	0.00	0.00	20.00	15.00
0.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.00	0.00	0.00	7.00	0.00	0.00	0.00	5.00	0.00

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50.00	40.00	40.00	40.00	15.00	30.00	25.00	30.00	45.00
5.00	5.00	10.00	15.00	5.00	10.00	5.00	10.00	15.00
10.00	50.00	10.00	10.00	30.00	30.00	45.00	25.00	25.00
35.00	5.00	40.00	35.00	50.00	30.00	25.00	35.00	15.00
80.00	0.00	0.00	0.00	0.00	33.33	0.00	16.67	44.44
0.00	0.00	37.50	0.00	33.33	16.67	60.00	0.00	0.00
20.00	100.00	62.50	100.00	66.67	50.00	40.00	83.33	55.56
50.00	40.00	40.00	40.00	15.00	30.00	25.00	30.00	45.00

16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	24.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	5.00	0.00	0.00	0.00	15.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	5.00	0.00	10.00	0.00	15.00	0.00	0.00
0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	75.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	5.00	10.00	0.00	0.00	0.00	0.00
0.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	3.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	7.00	5.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	20.00	0.00	20.00	0.00	10.00	0.00	30.00
0.00	20.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	5.00	0.00	10.00	0.00	0.00	0.00
0.00	0.00	10.00	0.00	0.00	0.00	10.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00
5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25.00	35.00	45.00	35.00	40.00	40.00	50.00	75.00	30.00
5.00	5.00	5.00	10.00	10.00	10.00	10.00	10.00	5.00
10.00	25.00	35.00	5.00	20.00	25.00	20.00	10.00	20.00
60.00	35.00	15.00	50.00	30.00	25.00	20.00	5.00	45.00
0.00	14.29	11.11	14.29	25.00	37.50	30.00	100.00	0.00
80.00	14.29	22.22	14.29	25.00	25.00	10.00	0.00	0.00
20.00	71.43	66.67	71.43	50.00	37.50	60.00	0.00	100.00
25.00	35.00	45.00	35.00	40.00	40.00	50.00	75.00	30.00

25.00	26.00	27.00	28.00	29.00	30.00	31.00	32.00	33.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	10.00	0.00	5.00	0.00
5.00	5.00	0.00	0.00	25.00	0.00	5.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	5.00	0.00	0.00	0.00	5.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	5.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	30.00	10.00	0.00	0.00	0.00	0.00	5.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	15.00	0.00	5.00	0.00	0.00	0.00	5.00	5.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.00	0.00	0.00	10.00	0.00	0.00	10.00	5.00	0.00
15.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	35.00
0.00	0.00	0.00	5.00	0.00	50.00	10.00	5.00	0.00
0.00	10.00	10.00	10.00	0.00	0.00	0.00	5.00	10.00
0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	10.00	0.00	0.00	0.00	0.00	5.00	0.00

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35.00	65.00	70.00	40.00	25.00	60.00	30.00	45.00	55.00
5.00	5.00	10.00	10.00	10.00	10.00	20.00	10.00	20.00
35.00	15.00	10.00	20.00	20.00	5.00	15.00	25.00	20.00
25.00	15.00	10.00	30.00	45.00	25.00	35.00	20.00	5.00
20.00	7.69	14.29	0.00	100.00	16.67	16.67	11.11	0.00
0.00	53.85	28.57	12.50	0.00	0.00	16.67	33.33	9.09
80.00	38.46	57.14	87.50	0.00	83.33	66.67	55.56	90.91
35.00	65.00	70.00	40.00	25.00	60.00	30.00	45.00	55.00

34.00	35.00	36.00	37.00	38.00	39.00	40.00	41.00	42.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	10.00	15.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	5.00	5.00	5.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	35.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00
0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	35.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00
5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	5.00	20.00	10.00	5.00	5.00	5.00	7.00	0.00
5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	40.00	0.00	15.00	20.00	0.00	0.00
5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	0.00	0.00	10.00	8.00	10.00

0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.00	0.00
35.00	45.00	50.00	65.00	70.00	25.00	45.00	25.00	50.00
5.00	20.00	10.00	25.00	10.00	5.00	5.00	20.00	10.00
35.00	20.00	10.00	5.00	5.00	10.00	10.00	5.00	20.00
25.00	15.00	30.00	5.00	15.00	60.00	40.00	50.00	20.00
0.00	0.00	20.00	23.08	0.00	0.00	0.00	0.00	0.00
14.29	0.00	0.00	0.00	50.00	20.00	22.22	20.00	80.00
85.71	100.00	80.00	76.92	50.00	80.00	77.78	80.00	20.00
35.00	45.00	50.00	65.00	70.00	25.00	45.00	65.00	50.00

43.00	44.00	45.00	46.00	47.00	48.00	49.00	50.00	51.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	5.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00
0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.00	10.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	5.00	0.00	0.00	5.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.00	10.00	25.00	30.00	0.00	25.00	15.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	5.00	10.00	0.00	0.00	5.00	5.00	0.00	0.00
0.00	0.00	5.00	0.00	0.00	5.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	30.00	5.00	0.00	5.00	35.00

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45.00	35.00	50.00	40.00	55.00	45.00	25.00	35.00	40.00
5.00	10.00	10.00	10.00	5.00	10.00	10.00	5.00	30.00
30.00	35.00	5.00	20.00	30.00	30.00	55.00	45.00	10.00
20.00	20.00	35.00	30.00	10.00	15.00	10.00	15.00	20.00
0.00	0.00	0.00	0.00	18.18	0.00	0.00	71.43	0.00
44.44	57.14	10.00	25.00	18.18	0.00	20.00	14.29	12.50
55.56	42.86	90.00	75.00	63.64	100.00	80.00	14.29	87.50
45.00	35.00	50.00	40.00	55.00	45.00	25.00	35.00	40.00

52.00	53.00	54.00	55.00	56.00	57.00	58.00	59.00	60.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	5.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.00	45.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	5.00	25.00	0.00	0.00	0.00	10.00	0.00	0.00
0.00	5.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	5.00	10.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	10.00	5.00	15.00	10.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.00	30.00	10.00	20.00	0.00	8.00	10.00	10.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	10.00	10.00	10.00	10.00	7.00	0.00	5.00	0.00
0.00	0.00	0.00	10.00	10.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	15.00	0.00	5.00	0.00	0.00
5.00	0.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25.00	65.00	65.00	65.00	45.00	45.00	50.00	50.00	65.00
5.00	10.00	20.00	10.00	10.00	15.00	10.00	10.00	15.00
10.00	5.00	5.00	15.00	5.00	15.00	15.00	25.00	5.00
60.00	20.00	10.00	10.00	40.00	25.00	25.00	15.00	15.00
20.00	0.00	15.38	15.38	0.00	0.00	0.00	0.00	0.00
0.00	23.08	46.15	0.00	0.00	11.11	50.00	70.00	69.23
80.00	76.92	38.46	84.62	100.00	88.89	50.00	30.00	30.77
25.00	65.00	65.00	65.00	45.00	45.00	50.00	50.00	65.00

61.00	62.00	63.00	64.00	65.00	66.00	67.00	68.00	69.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	40.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	0.00	45.00	0.00	25.00	5.00	0.00	0.00	0.00
0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
15.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00
0.00	0.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	5.00	0.00	15.00	0.00	5.00	0.00	10.00	5.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25.00	25.00	0.00	0.00	0.00	20.00	15.00	30.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	5.00	10.00	5.00
0.00	0.00	0.00	0.00	0.00	5.00	0.00	5.00	10.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	30.00	0.00	10.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45.00	70.00	50.00	50.00	50.00	45.00	35.00	65.00	35.00
25.00	10.00	10.00	35.00	5.00	10.00	5.00	10.00	10.00
5.00	10.00	5.00	5.00	5.00	35.00	35.00	5.00	30.00
25.00	10.00	35.00	10.00	40.00	10.00	25.00	20.00	25.00
0.00	57.14	0.00	0.00	0.00	0.00	14.29	7.69	28.57
44.44	0.00	100.00	10.00	50.00	11.11	28.57	0.00	14.29
55.56	42.86	0.00	90.00	50.00	88.89	57.14	92.31	57.14
45.00	70.00	50.00	50.00	50.00	45.00	35.00	65.00	35.00

70.00	71.00	72.00	73.00	74.00	75.00	76.00	77.00	78.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	5.00	0.00	0.00	0.00	5.00	0.00
0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	20.00	0.00	0.00	5.00	0.00	5.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	20.00	0.00	0.00	0.00	5.00	0.00	0.00	5.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	5.00	30.00	35.00	0.00	0.00	30.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	10.00	0.00	0.00	0.00	5.00	0.00	0.00	5.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20.00	0.00	30.00	5.00	0.00	0.00	35.00	0.00	25.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	10.00	0.00	5.00	0.00	5.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00
10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40.00	35.00	60.00	50.00	35.00	25.00	35.00	50.00	50.00
10.00	5.00	25.00	20.00	5.00	10.00	15.00	10.00	10.00
35.00	10.00	5.00	20.00	35.00	25.00	15.00	10.00	20.00
15.00	50.00	10.00	10.00	25.00	40.00	35.00	30.00	20.00
0.00	5.71	0.00	10.00	0.00	0.00	0.00	10.00	0.00
0.00	65.71	50.00	60.00	100.00	60.00	0.00	80.00	20.00
100.00	28.57	50.00	30.00	0.00	40.00	100.00	10.00	80.00
40.00	35.00	60.00	50.00	35.00	25.00	35.00	50.00	50.00

PLATEAU MINING CORP
Hardscrabble (Sowbelly)
Reclaimed Area
Exposure: Variable
Slope: Variable
Sample Date: 29 Aug '01

79.00	80.00	Mean	SDev	Freq	
					OVERSTORY COVER
0.00	0.00	0.50	4.44	1.25	*POPULUS FREMONTII*
					UNDERSTORY COVER
					TREES & SHRUBS
0.00	0.00	0.06	0.56	1.25	*Artemisia nova*
0.00	0.00	1.28	4.57	11.25	*Artemisia tridentata*
0.00	0.00	0.94	4.81	6.25	*Atriplex canescens*
0.00	0.00	0.38	1.54	6.25	*Ceratoides lanata*
0.00	0.00	1.96	5.56	18.75	*Chrysothamnus nauseosus*
0.00	0.00	0.13	0.78	2.50	*Gutierrezia sarothrae*
0.00	0.00	0.94	8.33	1.25	*Quercus gambelii*
0.00	0.00	0.25	2.22	1.25	*Rosa woodsii*
					FORBS
0.00	0.00	0.06	0.56	1.25	*Achillea millefolium*
0.00	0.00	1.06	3.42	13.75	*Artemisia dracunculus*
5.00	0.00	2.75	7.70	22.50	*Aster chilensis*
0.00	0.00	0.06	0.56	1.25	*Capsella bursa-pastoris*
0.00	0.00	0.13	1.11	1.25	*Grindelia squarrosa*
0.00	0.00	1.54	5.99	12.50	*Hedysarum boreale*
0.00	0.00	0.31	1.99	2.50	*Kochia scoparia*
0.00	0.00	0.06	0.56	1.25	*Linum lewisii*
5.00	0.00	1.04	2.16	20.00	*Machaeranthera canescens*
0.00	0.00	0.19	0.95	3.75	*Medicago sativa*
5.00	0.00	1.69	6.42	10.00	*Melilotus officinalis*
0.00	0.00	2.03	5.24	20.00	*Penstemon palmeri*
0.00	0.00	0.19	0.95	3.75	*Penstemon sp.*
0.00	0.00	0.06	0.56	1.25	*Salsola pestifer*
0.00	0.00	0.50	3.92	2.50	*Sisymbrium altissimum*
0.00	0.00	0.06	0.56	1.25	*Viguiera multiflora*
					GRASSES
0.00	0.00	0.31	1.45	5.00	*Agropyron cristatum*
0.00	5.00	0.31	1.45	5.00	*Bromus carinatus*
0.00	0.00	1.50	5.50	8.75	*Bromus tectorum*
0.00	0.00	0.38	2.47	2.50	*Dactylis glomeratus*
5.00	0.00	2.75	5.80	30.00	*Elymus cinereus*
0.00	0.00	0.19	0.95	3.75	*Elymus hispidus*
5.00	35.00	8.85	10.57	55.00	*Elymus lanceolatus*
0.00	0.00	1.38	5.30	8.75	*Elymus salinus*
5.00	0.00	4.44	8.87	36.25	*Elymus smithii*
5.00	0.00	2.19	4.10	26.25	*Elymus spicatus*
0.00	0.00	0.25	1.56	2.50	*Elymus trachycaulus*
0.00	0.00	0.19	0.95	3.75	*Poa pratensis*
5.00	0.00	1.00	4.06	8.75	*Poa secunda*
5.00	0.00	2.94	6.40	27.50	*Stipa hymenoides*

						COVER	
0.00	0.00	0.50	4.44			Overstory Cover (o)	
45.00	40.00	44.31	13.29			Understory Cover (u)	
10.00	10.00	11.11	6.90			Litter	
35.00	20.00	19.39	13.01			Bareground	
10.00	30.00	25.19	14.69			Rock	
						% UNDERSTORY COMPOSITION	
0.00	0.00	12.45	21.46			Shrubs	
33.33	0.00	26.56	26.08			Forbs	
66.67	100.00	61.00	28.17			Grasses	
45.00	40.00	44.81	13.31			TOTAL LIVING COVER (o+u)	

PLATEAU MINING CORP
Hardscrabble (Sowbelly)
Reference Area
Exposure: Variable
Slope: Variable

Sample Date: 29 Aug '01	1.00	2.00	3.00	4.00	5.00	6.00
OVERSTORY COVER						
Quercus gambelii	0.00	0.00	0.00	0.00	0.00	0.00
UNDERSTORY COVER						
TREES & SHRUBS						
Artemisia tridentata	0.00	0.00	0.00	0.00	0.00	0.00
Atriplex canescens	10.00	0.00	25.00	7.00	0.00	0.00
Chrysothamnus nauseosus	10.00	8.00	0.00	0.00	0.00	25.00
Quercus gambelii	0.00	0.00	0.00	0.00	0.00	0.00
FORBS						
Aster glaucodes	0.00	7.00	0.00	8.00	10.00	25.00
Melilotus officinalis	0.00	0.00	5.00	0.00	0.00	0.00
GRASSES						
Bromus carinatus	0.00	0.00	5.00	0.00	0.00	0.00
Bromus tectorum	0.00	0.00	0.00	0.00	0.00	0.00
Dactylis glomeratus	0.00	0.00	0.00	0.00	0.00	0.00
Elymus cinereus	0.00	0.00	0.00	0.00	0.00	0.00
Elymus hispidus	0.00	10.00	0.00	0.00	0.00	0.00
Elymus lanceolatus	35.00	25.00	0.00	0.00	5.00	10.00
Elymus smithii	10.00	0.00	15.00	20.00	30.00	10.00
Elymus trachycaulus	0.00	0.00	0.00	0.00	0.00	0.00
Poa pratensis	0.00	0.00	0.00	0.00	0.00	0.00
Stipa hymenoides	0.00	0.00	5.00	0.00	0.00	0.00
COVER						
Overstory Cover (o)	0.00	0.00	0.00	0.00	0.00	0.00
Understory Cover (u)	65.00	50.00	55.00	35.00	45.00	70.00
Litter	25.00	35.00	25.00	40.00	40.00	25.00
Bareground	5.00	5.00	5.00	5.00	5.00	4.00
Rock	5.00	10.00	15.00	20.00	10.00	1.00
% UNDERSTORY COMPOSITION						
Shrubs	30.77	16.00	45.45	20.00	0.00	35.71
Forbs	10.77	10.00	14.55	28.57	55.56	21.43
Grasses	69.23	70.00	45.45	57.14	77.78	28.57
TOTAL LIVING COVER (o+u)	65.00	50.00	55.00	35.00	45.00	70.00

7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	20.00	0.00	0.00	0.00	10.00	0.00	25.00	0.00
20.00	0.00	0.00	30.00	20.00	5.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.00	0.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	15.00	20.00	10.00	0.00	10.00	50.00	20.00	5.00
25.00	10.00	10.00	20.00	20.00	0.00	10.00	10.00	30.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	45.00	55.00	60.00	40.00	35.00	65.00	55.00	35.00
35.00	45.00	35.00	30.00	5.00	10.00	10.00	25.00	40.00
4.00	9.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
1.00	1.00	5.00	5.00	50.00	50.00	20.00	15.00	20.00
33.33	44.44	0.00	50.00	50.00	42.86	0.00	45.45	0.00
0.00	55.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00
41.67	55.56	54.55	50.00	50.00	57.14	100.00	54.55	100.00
60.00	45.00	55.00	60.00	40.00	35.00	65.00	55.00	35.00

16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	24.00
0.00	0.00	0.00	10.00	10.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00
15.00	35.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	5.00	0.00	0.00	5.00	0.00	15.00	0.00
0.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	25.00	10.00	10.00	5.00	0.00	25.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	35.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	25.00	5.00	0.00	0.00	0.00	0.00	0.00	15.00
40.00	5.00	0.00	0.00	10.00	0.00	5.00	10.00	15.00
0.00	0.00	35.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00
0.00	0.00	5.00	0.00	0.00	5.00	0.00	0.00	0.00
0.00	0.00	0.00	10.00	10.00	0.00	0.00	0.00	0.00
55.00	65.00	50.00	45.00	30.00	30.00	30.00	60.00	55.00
25.00	25.00	40.00	35.00	60.00	5.00	10.00	25.00	20.00
10.00	5.00	5.00	5.00	5.00	30.00	15.00	5.00	5.00
10.00	5.00	5.00	15.00	5.00	35.00	45.00	10.00	20.00
27.27	53.85	10.00	0.00	33.33	50.00	0.00	25.00	0.00
0.00	0.00	50.00	22.22	33.33	16.67	0.00	41.67	27.27
72.73	46.15	90.00	44.44	33.33	16.67	83.33	75.00	54.55
55.00	65.00	50.00	55.00	40.00	30.00	30.00	60.00	55.00

25.00	26.00	27.00	28.00	29.00	30.00	31.00	32.00	33.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	5.00	0.00	2.00	10.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	3.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	15.00	20.00	5.00	50.00	20.00	15.00	5.00	10.00
25.00	20.00	5.00	30.00	0.00	20.00	25.00	0.00	30.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45.00	40.00	25.00	45.00	50.00	45.00	50.00	10.00	40.00
35.00	50.00	10.00	35.00	30.00	40.00	30.00	5.00	30.00
5.00	5.00	35.00	5.00	5.00	5.00	5.00	20.00	5.00
15.00	5.00	30.00	15.00	15.00	10.00	15.00	65.00	25.00
0.00	0.00	0.00	22.22	0.00	4.44	20.00	0.00	0.00
0.00	0.00	0.00	0.00	6.00	0.00	0.00	0.00	0.00
66.67	100.00	100.00	77.78	100.00	88.89	80.00	100.00	100.00
45.00	40.00	25.00	45.00	50.00	45.00	50.00	10.00	40.00

34.00	35.00	36.00	37.00	38.00	39.00	40.00	Mean	SDev
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	2.18
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	1.73
0.00	0.00	0.00	10.00	0.00	0.00	5.00	4.48	8.37
0.00	0.00	0.00	0.00	0.00	0.00	5.00	3.70	7.53
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	1.56
0.00	0.00	2.00	0.00	0.00	0.00	0.00	4.55	8.01
0.00	0.00	0.00	0.00	5.00	15.00	0.00	0.70	2.57
0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.75	3.27
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.78
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	1.87
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88	5.46
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	1.56
5.00	0.00	8.00	5.00	10.00	15.00	30.00	11.58	12.73
40.00	35.00	30.00	25.00	15.00	0.00	0.00	15.13	12.07
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88	5.46
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	1.56
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	2.11
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	2.18
45.00	35.00	40.00	40.00	35.00	30.00	40.00	45.13	12.52
40.00	45.00	10.00	10.00	10.00	10.00	35.00	27.38	13.78
5.00	10.00	5.00	10.00	25.00	15.00	5.00	8.18	7.14
10.00	10.00	45.00	40.00	30.00	45.00	20.00	19.33	15.86
0.00	0.00	0.00	25.00	0.00	0.00	25.00	17.75	19.02
0.00	5.71	0.00	12.50	42.86	0.00	13.13	11.69	16.96
100.00	100.00	95.00	75.00	85.71	50.00	75.00	70.55	23.02
45.00	35.00	40.00	40.00	35.00	30.00	40.00	45.63	12.41

PLATEAU MINING CORP
Hardscrabble (Sowbelly)
Reference Area
Exposure: Variable
Slope: Variable
Sample Date: 29 Aug '01

Freq	
	OVERSTORY COVER
5.00	*Quercus gambelii*
	UNDERSTORY COVER
	TREES & SHRUBS
5.00	*Artemisia tridentata*
32.50	*Atriplex canescens*
27.50	*Chrysothamnus nauseosus*
2.50	*Quercus gambelii*
	FORBS
32.50	*Aster glaucodes*
10.00	*Melilotus officinalis*
	GRASSES
7.50	*Bromus carinatus*
2.50	*Bromus tectorum*
7.50	*Dactylis glomeratus*
2.50	*Elymus cinereus*
2.50	*Elymus hispidus*
70.00	*Elymus lanceolatus*
77.50	*Elymus smithii*
2.50	*Elymus trachycaulus*
2.50	*Poa pratensis*
12.50	*Stipa hymenoides*
	COVER
	Overstory Cover (o)
	Understory Cover (u)
	Litter
	Bareground
	Rock
	% UNDERSTORY COMPOSITION
	Shrubs
	Forbs
	Grasses
	TOTAL LIVING COVER (o+u)

APPENDIX C

Legal Financial, Compliance and Related Information

Annual Report of Officers
As submitted to the Utah Department of Commerce

Other change in ownership and control information
As required under R645-301-110

State of Utah
DEPARTMENT OF COMMERCE
Division of Corporations & Commercial Code

FILED
APR 19 2001
Utah Div. Of Corp. & Comm. Code

Non-Refundable Processing Fee $10.00

Registration Information Change Form

(This Form Does Not Renew Your Filing)

Please make all corrections or changes to registered information on this form. Means of payment are: cash, check, or money order made payable to the "State of Utah." If you are faxing you must include, on a cover sheet, the number of a Visa or MasterCard with the date of expiration. Note: If you are using this form with a reinstatement please do not include the $10.00 processing fee with the reinstatement fee.

WHEN REPLACING THE REGISTERED AGENT THE NEW AGENT MUST SIGN.

DO NOT USE THIS FORM if you are resigning as a Officer, Director, Trustee, or Registered Agent. You must submit a Letter of Resignation. There is no fee associated with a Letter of Resignation.

ENTITY FILE # 1405411 REGISTRATION DATE 4/20/98

1. REGISTERED NAME: Castle Gate Holding Company
2. REGISTERED AGENT (Required Information): no change
   First / Middle / Last / NEW AGENT MUST SIGN ABOVE
3. REGISTERED ADDRESS: STREET ADDRESS REQUIRED
4. CITY, STATE & ZIP: UTAH
   REGISTERED AGENT MUST BE IN UTAH
5. PURPOSE OF THE BUSINESS: no change
6. ADDRESS OF THE PRINCIPAL OFFICE IN THE HOME STATE: 999 Corporate Blvd. MD
   STREET ADDRESS / STATE OR COUNTY
   Linthicum Heights 21090
   CITY / ZIP

	POSITION TO CHANGE	NAME	ADDRESS
7.	[] Add [] Remove President	J. M. DeMichiei	ADDRESS 999 Corporate Blvd. (change) CITY Linthicum Heights STATE MD ZIP 21090
8.	[] Add [] Remove Vice Pres.	D. H. Roland	ADDRESS 999 Corporate Blvd. (change) CITY Linthicum Heights STATE MD ZIP 21090
9.	[] Add [] Remove Secretary	G. A. Walker	ADDRESS 999 Corporate Blvd. CITY Linthicum Heights STATE MD ZIP 21090
10	[X] Add [] Remove Treasurer	G. G. Pearson	ADDRESS 999 Corporate Blvd. CITY Linthicum Heights STATE MD ZIP 21090
11.	[] Add [X] Remove Treasurer	F. J. Wood	ADDRESS CITY STATE ZIP
12.	[] Add [] Remove		ADDRESS CITY STATE ZIP

Under penalties of perjury and as an authorized authority, I declare that this statement of change(s), has been examined by me and is, to the best of my knowledge and belief, true, correct, and complete.

BY Sharon J. Fetherlinh Title Assistant Secretary Date 4/12/01

Mail In: 160 East 300 South, 2nd Floor, Box 146705
Salt Lake City, Utah 84114
Walk In: 160 East 300 South, 1st Floor
Corporation's Information Center: (801)530-4849
Toll Free: (877) 526-3994 (Utah Residents)
Fax: (801) 530-6111
Web Site: http://www.commerce.state.ut.us

commonformsmisccrlcf
Revised: 01-25-01 mm

Date: 04/19/2001
Receipt Number: 290553
Amount Paid: $310.00

TAP

Entity Number	Type	PROCESSING FEE RENEW BEFORE LATE DATE	LATE DATE & FEE	Expiration Date
1405411-0143	Corporation - Foreign - Profit Castle Gate Holding Company			

DO NOT WRITE ON, FOLD, OR STAPLE COUPON.

FILED

APR 19 2001

Utah Div. Of Corp. & Comm. Code

(Detach carefully along this perforation)

PLEASE READ THE INSTRUCTIONS CAREFULLY

INSTRUCTIONS FOR APPLICATION FOR RENEWAL

TIMELY RENEWAL: Pursuant to Utah Law, all renewals must be filed within their legally prescribed time. Failure to do so may result in the loss of all protection and privileges in the State of Utah.

RENEWAL FEES: Application fees are subject to change by the Legislature each July 1st. The fees quoted above are current at the time this renewal form was printed.

RENEWAL: Please submit original form only. Carefully detach and submit with the enclosed return envelope along with the appropriate fee. **For multiple renewals please submit separate payments.** Payments are accepted by check or money order and should be payable to "State of Utah" **DO NOT SEND CASH.** Please indicate registration number or business name on check.

CHANGES: The Registration Information Change Form can be used to make changes to your filing.

Download: http://www.commerce.state.ut.us

Orders: orders@br.state.ut.us or (801) 530-4849, toll free in-state (877) 526-3994

If you have questions concerning this renewal or would like to check the status of your record please contact the Corporations Information Center at: (801) 530-4849 or toll free in-state (877) 526-3994 or go to http://www.state.ut.us/serv/bus. Forms may be downloaded from our Web site: http://www.commerce.state.ut.us

REQUIREMENTS:

Date: 04/19/2001

Receipt Number: 298553

Amount Paid: $310.00

TAB

March 4, 2002

RAG AMERICAN COAL HOLDING, INC.

(Formerly Ruhrkohle-Stinnes Corporation; name change to Ruhr-American Coal Corporation 10/1/75; name change to RAG American Coal Corporation 2/22/98; name change to RAG American Coal Holding, Inc. 6/18/99)

Principal Operating Office:	999 Corporate Blvd. Linthicum Heights, MD 21090
Telephone:	410/689-7500
Incorporation:	
State	Delaware The Corporation Trust Company, 1209 Orange Street, Wilmington, DE 19801
Date	October 31, 1974
Existence	Perpetual
Qualified to Do Business In:	West Virginia, Colorado and Maryland
Ownership – Percentage:	RAG Coal International Aktiengesellschaft (5/30/2000) – 100% Rellinghauser Strasse 1-11, 45128 Essen, Germany
IRS Identification Number:	13-2793319

Officers:

Title	Name	Social Security #	Date Assumed Office
President and Chief Executive Officer	James F. Roberts	[redacted]	March 1, 1999
Senior Vice President, Western Operations	Thomas J. Lien	[redacted]	September 14, 2001
Senior Vice President, Eastern Operations	Randy L. McMillion	[redacted]	September 14, 2001
Senior Vice President, General Counsel and Secretary	Greg A. Walker	[redacted]	August 24, 1999
Senior Vice President, Planning and Engineering	Klaus-Dieter Beck	German	September 14, 2001
Senior Vice President, Development and Information Technology	James A. Olsen	[redacted]	September 14, 2001
Senior Vice President, Safety and Human Resources	M. R. Peelish	[redacted]	September 14, 2001
Senior Vice President, Sales and Marketing	John R. Tellmann	[redacted]	February 21, 2002
Senior Vice President, Finance and Controller	Frank J. Wood	[redacted]	September 14, 2001/March 1, 2000
Treasurer	Gary G. Pearson	[redacted]	March 27, 2001

Directors:

Chairman	Jürgen W. Stadelhofer	German	September 9, 1997
	Christoph Danzer-Vanotti	German	September 18, 2000
	Karl F. Jakob	German	July 1, 1999
	Heribert Protzek	German	September 18, 2000
	Joel Richards III	[redacted]	June 7, 2001
	James F. Roberts	[redacted]	March 1, 1999
	Manfred Warda	German	September 18, 2000
	Anthony Williams	Withheld	March 22, 2000
	Fritz Ziegler	German	September 18, 2000

March 4, 2002

RAG AMERICAN COAL HOLDING, INC.

Resignations since June 30, 1999:

Title	Name	Social Security No.	Date Resigned
Secretary and Treasurer	Roy West	[redacted]	August 24, 1999
Vice President, Finance and Treasurer	J. Alan Link	[redacted]	April 1, 2000
Director	Rainer Benning	German	September 30, 2000
Vice President, Development	James A. Olsen	[redacted]	March 27, 2001
Vice President, Human Resources	Michael R. Peelish	[redacted]	March 27, 2001
Treasurer	Frank J. Wood	[redacted]	March 27, 2001
Assistant Treasurer	Gary G. Pearson	[redacted]	March 27, 2001
Executive Vice President	John M. DeMichiei	[redacted]	September 13, 2001
Vice President, West Virginia Operations	Randy Hansford	[redacted]	September 14, 2001
Vice President, Planning and Engineering	Klaus-Dieter Beck	German	September 14, 2001
Vice President, Development and Information Technology	James A. Olsen	[redacted]	September 14, 2001
Vice President, Safety and Human Resources	Michael R. Peelish	[redacted]	September 14, 2001
Vice President	Frank J. Wood	[redacted]	September 14, 2001
Senior Vice President	John R. Tellmann	[redacted]	February 21, 2002

September 27, 2001

RAG AMERICAN COAL COMPANY

Principal Operating Office: 999 Corporate Blvd.
Linthicum Heights, MD 21090

Telephone: 410/689-7500

Incorporation:
State: The Corporation Trust Company, 1209 Orange Street, Wilmington, DE 19801
Date: June 18, 1999
Existence: Perpetual

Qualified to Do Business In: Maryland

Ownership - Percentage: RAG American Coal Holding, Inc. (6/30/99) – 100%
999 Corporate Blvd., Linthicum Heights, MD 21090

IRS Identification Number: 54-1947356

OFFICERS:

Title	Name	Social Security #	Date Assumed Office
President and Chief Executive Officer	James F. Roberts	[redacted]	June 24, 1999
Senior Vice President, General Counsel and Secretary	Greg A. Walker	[redacted]	June 30, 1999
Vice President	James A. Olsen	[redacted]	September 18, 2000
Vice President and Controller	Darrell H. Roland	[redacted]	March 1, 2000
Vice President	Frank J. Wood	[redacted]	June 30, 1999
Vice President, Safety and Human Resources	Michael R. Peelish	[redacted]	March 27, 2001
Treasurer	Gary G. Pearson	[redacted]	March 27, 2001

DIRECTORS:

Karl F. Jakob	German	September 30, 2000
James F. Roberts	[redacted]	June 18, 1999
Jurgen W. Stadelhofer	German	July 20, 1999

September 27, 2001

RAG AMERICAN COAL COMPANY

Resignations (since incorporation):

Title	Name	Social Security No.	Date Resigned
Assistant Secretary	J. Alan Link	[redacted]	June 30, 1999
Secretary, Treasurer	Roy West	[redacted]	June 30, 1999
Senior Vice President, Sales and Marketing	Nicholas P. Moros	[redacted]	August 11, 1999
Assistant Secretary	Susan E. Chetlin	[redacted]	December 31, 1999
Controller	Frank J. Wood	[redacted]	March 1, 2000
Senior Vice President, Development	Richard D. Mills	[redacted]	March 31, 2000
Director, Vice President and Treasurer	J. Alan Link	[redacted]	April 1, 2000
Senior Vice President, Western Operations	George E. Vajda	[redacted]	May 16, 2000
Vice President, Process Management	Randall J. Scott	[redacted]	June 30, 2000
Director	Rainer Benning	German	September 30, 2000
Treasurer	Frank J. Wood	[redacted]	March 27, 2001
Vice President, Planning	Klaus-Dieter Beck	German	March 27, 2001
Vice President, Human Resources	Michael R. Peelish	[redacted]	March 27, 2001
Assistant Treasurer	Gary G. Pearson	[redacted]	March 27, 2001
Executive Vice President, Chief Operating Officer	John M. DeMichiei	[redacted]	September 13, 2001

September 27, 2001

RAG MIDWEST HOLDING COMPANY
(Formerly Cyprus Amax Midwest Holding Company, name change 6/30/99)

Principal Operating Offices: 999 Corporate Blvd.
Linthicum Heights, MD 21090

Telephone: 410/689-7500

Incorporation:
State: Delaware, The Corporation Trust Company, 1209 Orange Street, Wilmington, DE 19801
Date: April 2, 1998
Existence: Perpetual

Qualified to Do Business In:

Ownership – Percentage: RAG American Coal Company (successor by merger to Cyprus Amax Coal Company 6/30/99) – 100%
999 Corporate Blvd., Linthicum Heights, MD 21090

IRS Identification Number: 84-1456626

OFFICERS:

Title	Name	Social Security #	Date Assumed Office
President	Randy L. McMillion	[redacted]	September 14, 2001
Senior Vice President, General Counsel and Secretary	Greg A. Walker	[redacted]	June 30, 1999
Vice President and Controller	Darrell H. Roland	[redacted]	March 1, 2000
Vice President	Frank J. Wood	[redacted]	April 2, 1998
Treasurer	Gary G. Pearson	[redacted]	March 27, 2001
Assistant Secretary	C. Corwin Bromley	[redacted]	January 1, 2000
Assistant Secretary	Sharon J. Fetherhuff	[redacted]	January 1, 2000
Assistant Secretary	William M. Hartzler	[redacted]	January 1, 2000
DIRECTORS	James F. Roberts	[redacted]	June 30, 1999
	Frank J. Wood	[redacted]	June 30, 1999

September 27, 2001

RAG MIDWEST HOLDING COMPANY

Resignations since Incorporation:

Title	Name	Social Security #	Date Resigned
Assistant Secretary	Morris W. Kegley	[redacted]	July 15, 1998
President	Randall J. Scott	[redacted]	October 8, 1998
Director	Garold R. Spindler	[redacted]	June, 30, 1999
Director	Gerald J. Malys	[redacted]	June, 30, 1999
Director	Philip C. Wolf	[redacted]	June, 30, 1999
Senior Vice President	Gerald J. Malys	[redacted]	June, 30, 1999
Senior Vice President, General Counsel and Secretary	Philip C. Wolf	[redacted]	June 30, 1999
Vice President	Patrick J. Panzarino	[redacted]	June 30, 1999
Vice President and Treasurer	Farokh S. Hakimi	[redacted]	June 30, 1999
Assistant Treasurer	J. M. Coyner	[redacted]	June 30, 1999
Director of Tax	J. David Flemming	[redacted]	June 30, 1999
Assistant Secretary	Sharon J. Fetherhuff	[redacted]	June 30, 1999
Assistant Secretary	Greg A. Walker	[redacted]	June 30, 1999
Assistant Secretary	Dale E. Huffman	[redacted]	June, 30, 1999
Senior Vice President, Sales and Marketing	Nicholas P. Moros	[redacted]	August 11, 1999
Assistant Secretary	Susan E. Chetlin	[redacted]	December 31, 1999
Controller	Frank J. Wood	[redacted]	March 1, 2000
Vice President and Treasurer	J. Alan Link	[redacted]	April 1, 2000
Treasurer	Frank J. Wood	[redacted]	March 27, 2001
Assistant Treasurer	Gary G. Pearson	[redacted]	March 27, 2001
President and Director	John M. DeMichiei	[redacted]	September 13, 2001

September 27, 2001

CASTLE GATE HOLDING COMPANY

Principal Operating Offices:	999 Corporate Blvd. Linthicum Heights, MD 21090
Telephone:	410/689-7500
Incorporation:	
State	Delaware, The Corporation Trust Company, 1209 Orange Street, Wilmington, DE 19801
Date	April 2, 1998
Existence	Perpetual
Qualified to Do Business In:	Utah
Ownership - Percentage:	RAG Midwest Holding Company - 100% 999 Corporate Blvd., Linthicum Heights, MD 21090
IRS Identification Number:	84-1456620

OFFICERS:

Title	Name	Social Security #	Date Assumed Office
President	Thomas J. Lien	[redacted]	September 14, 2001
Senior Vice President, General Counsel and Secretary	Greg A. Walker	[redacted]	June 30, 1999
Vice President and Controller	Darrell H. Roland	[redacted]	March 1, 2000
Vice President	Frank J. Wood	[redacted]	April 2, 1998
Treasurer	Gary G. Pearson	[redacted]	March 27, 2001
Assistant Secretary	C. Corwin Bromley	[redacted]	January 1, 2000
Assistant Secretary	Sharon J. Fetherhuff	[redacted]	January 1, 2000
Assistant Secretary	William M. Hartzler	[redacted]	January 1, 2000

DIRECTORS:	James F. Roberts	[redacted]	June 30, 1999
	Frank J. Wood	[redacted]	June 30, 1999

September 27, 2001

CASTLE GATE HOLDING COMPANY

Resignations since Incorporation:

Assistant Secretary	Morris W. Kegley	July 15, 1998
President	Randall J. Scott	October 8, 1998
Director	Garold R. Spindler	June 30, 1999
Director	Gerald J. Malys	June 30, 1999
Director	Philip C. Wolf	June 30, 1999
Senior Vice President	Gerald J. Malys	June 30, 1999
Senior Vice President, General Counsel and Secretary	Philip C. Wolf	June 30, 1999
Vice President	Patrick J. Panzarino	June 30, 1999
Vice President and Treasurer	Farokh S. Hakimi	June 30, 1999
Assistant Treasurer	J. M. Coyner	June 30, 1999
Director of Tax	J. David Flemming	June 30, 1999
Assistant Secretary	Sharon J. Fetherhuff	June 30, 1999
Assistant Secretary	Greg A. Walker	June 30, 1999
Assistant Secretary	Dale E. Huffman	June 30, 1999
Senior Vice President, Sales and Marketing	Nicholas P. Moros	August 11, 1999
Assistant Secretary	Susan E. Chetlin	December 31, 1999
Controller	Frank J. Wood	March 1, 2000
Vice President and Treasurer	J. Alan Link	April 1, 2000
Treasurer	Frank J. Wood	March 27, 2001
Assistant Treasurer	Gary G. Pearson	March 27, 2001
President and Director	John M. DeMichiei	September 13, 2001

APPENDIX D

Mine Maps

As required under R645-302-525-270

APPENDIX E

Other Information

In accordance with the requirements of R645-301 and R645-302