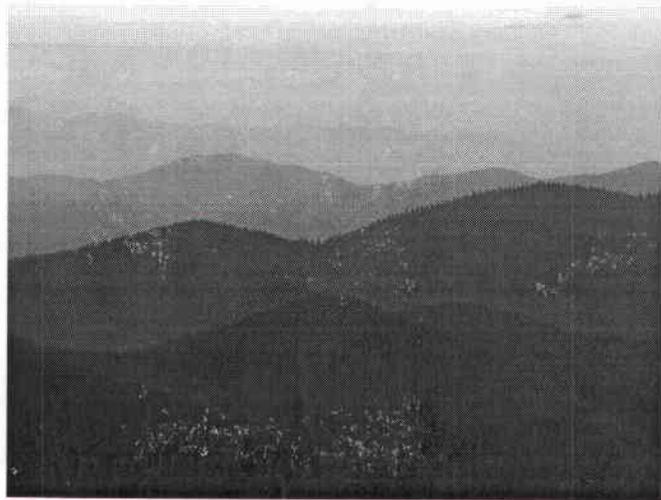


WILLOW CREEK MINE 2002 ANNUAL REPORT C/007/038



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In C/007/038, 2003, Summary

For additional information

0006

**PLATEAU
MINING
CORPORATION**

COPY

Willow Creek Mine
847 NW Hwy 191
Helper, Utah 84526
(435) 472-0482
Fax: (435) 472-0486

An affiliate of **RAG**

March 6, 2003

*C/007/038 Incoming
CCcover letter: Pete, Joe, Mike*

Ms. Pamela Grubaugh-Littig
Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, Utah 84114-5801

RE: 2002 Annual Report, Plateau Mining Corporation, Willow Creek Mine, C/007/038

Dear Ms. Grubaugh-Littig:

Enclosed are two copies of the aforementioned. If you have any questions or need additional information, please do not hesitate to contact me.

Sincerely,



Johnny Pappas
Sr. Environmental Engineer

Enclosures

File: Willow Creek Mine - Annual Report 2002
Chrono: JP030309.ltr

RECEIVED

MAR 07 2003

DIV. OF OIL, GAS & MINING

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	Plateau Mining Corporation
Mine Name	Willow Creek Mine
Operator Name (If other than permittee)	
Permit Expiration Date	April 24, 2006
Permit Number	C/007/038
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	P.O. Box 30, 847 Northwest Highway 191, Helper, UT 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)	42-02113	Legal Identity	
MSHA Impoundment(s)	1211-UT-09-02113-02	Schoolhouse Canyon Sed. Pond 013	
	1211-UT-09-02113-01	Schoolhouse Canyon Refuse Pile	
NPDES/UPDES Permit(s)	UTG040012	UPDES Permit	April 30, 2003
PSD Permit(s) (Air)	DAQE-037-00	Approval Order	
Other			

CERTIFIED REPORTS

List the certified inspection reports as required by the rules and under the approved plan that must be periodically submitted to 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	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Refuse Piles	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Impoundments	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Subsidence Monitoring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Vegetation Monitoring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Phase III release for Crandal Leach Field
Raptor Survey	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Soils Monitoring	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Water Monitoring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
First quarter	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Second quarter	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Third quarter	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Fourth quarter	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Geological / Geophysical	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Engineering	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Non Coal Waste / Abandoned Underground Equipment*	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Mine Sealed in November 2002, Water Monitoring reduction and PHC revision submitted in December 2002.
Other Data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Reminder: If equipment has been abandoned during 2002, an amendment must be submitted that includes a map showing its location, a description of what was abandoned, whether there was any hazardous or toxic materials and any revision to the PHC as necessary.

CERTIFIED REPORTS

List the certified inspection reports as required by the rules and under the approved plan that must be periodically submitted to 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	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Refuse Piles	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Impoundments	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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	
Atmospheric	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Subsidence Monitoring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Vegetation Monitoring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Phase III release for Crandal Leach Field
Raptor Survey	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Soils Monitoring	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Water Monitoring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
First quarter	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Second quarter	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Third quarter	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Fourth quarter	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Geological / Geophysical	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Engineering	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Non Coal Waste / Abandoned Underground Equipment*	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Mine Sealed in November 2002, Water Monitoring reduction and PHC revision submitted in December 2002.
Other Data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Reminder: If equipment has been abandoned during 2002, an amendment must be submitted that includes a map showing its location, a description of what was abandoned, whether there was any hazardous or toxic materials and any revision to the PHC as necessary.

APPENDIX A

Certified Reports

Excess Spoil Piles
Refuse Piles
Impoundments

As required under R645-301-514

CONTENTS

QUARTERLY REFUSE PILE CERTIFICATIONS

ANNUAL SEDIMENT POND CERTIFICATION

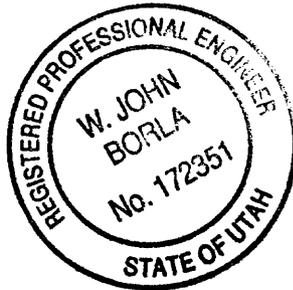
Plateau Mining Corporation

2002 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

Date: 3/5/03



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	12/10/02	6163.7	4.6	30	3.22
2	12/10/02	6154.8	0.052	5	0.049
10	12/10/02	Pond reclaimed in 2002 in conjunction with Adit No. 1			
11	12/10/02	6140.7	0.35	35 [☆]	0.23
12A	12/10/02	6103.6	0.64	25	0.48
12B	12/10/02	6095.05	0.35	35	0.23
13	12/10/02	6205.0	3.14	45	1.74
14*	12/10/02	95.3	0.72	30 [☆]	0.50
15*	12/10/02	98.2	0.45	15	0.39

*Elevation relative to open spillway elevation of 100.0.

[☆]Based on estimate due to water in the pond.

**Plateau Mining Corporation
Quarterly Refuse Pile Certification
First Quarter, 2002**

I hereby certify that I am a Registered Professional Engineer in the State of Utah. I certify that I have made an inspection of the coal processing refuse pile at Plateau Mining Corporation's Willow Creek Mine in Carbon County Utah. To the best of my knowledge and belief, the refuse pile has been constructed and maintained as designed. There are no apparent areas of instability, structural weakness or other hazardous conditions. The refuse pile is currently not being used for disposal.

W. John Borla
W. John Borla

Date: 3/28/02



**Plateau Mining Corporation
Quarterly Refuse Pile Certification
Second Quarter, 2002**

I hereby certify that I am a Registered Professional Engineer in the State of Utah. I certify that I have made an inspection of the coal processing refuse pile at Plateau Mining Corporation's Willow Creek Mine in Carbon County Utah. To the best of my knowledge and belief, the refuse pile has been constructed and maintained as designed. There are no apparent areas of instability, structural weakness or other hazardous conditions. The refuse pile is currently not being used for disposal.

W. John Borla
W. John Borla

Date: 5/30/02

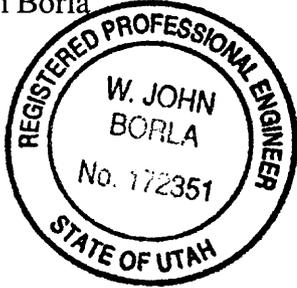


**Plateau Mining Corporation
Quarterly Refuse Pile Certification
Third Quarter, 2002**

I hereby certify that I am a Registered Professional Engineer in the State of Utah. I certify that I have made an inspection of the coal processing refuse pile at Plateau Mining Corporation's Willow Creek Mine in Carbon County Utah. To the best of my knowledge and belief, the refuse pile has been constructed and maintained as designed. There are no apparent areas of instability, structural weakness or other hazardous conditions. The refuse pile is currently not being used for disposal.

W. John Borla
W. John Borla

Date: 9/24/02



**Plateau Mining Corporation
Willow Creek Mine
Quarterly Refuse Pile Certification
Fourth Quarter, 2002**

I hereby certify that I am a Registered Professional Engineer in the State of Utah. I certify that I have made an inspection of the coal processing refuse pile at Plateau Mining Corporation's Willow Creek Mine in Carbon County Utah. To the best of my knowledge and belief, the refuse pile has been constructed and maintained as designed. There are no apparent areas of instability, structural weakness or other hazardous conditions. The refuse pile is currently not being used for disposal.

W. John Borla
W. John Borla

Date: 12/04/02



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

CONTENTS

VEGETATION MONITORING, PHASE III BOND RELEASE, LEACH FIELD AREA, CRANDALL CANYON, YEAR 2 STUDY

SUBSIDENCE MONITORING

**VEGETATION MONITORING
FOR PHASE III BOND RELEASE
FOR THE LEACH FIELD AREA
IN CRANDALL CANYON**

YEAR 2 STUDY
2002

Including a Two-Year Data Comparison: 2001-2002

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

Patrick Collins, Ph.D.

for

PLATEAU MINING CORPORATION

847 Northwest Highway 191

Helper, Utah 84526

Fieldwork: August 2002

Report: January 2003



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INTRODUCTION	1
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VEGETATION MONITORING
FOR PHASE III BOND RELEASE
FOR THE LEACH FIELD AREA
IN CRANDALL CANYON

Year 2

(Including a Two-Year Data Comparison: 2001-2002)

INTRODUCTION

Objectives for Monitoring

The Crandall Canyon area, located in Carbon County, Utah, has a history of coal mining and reclamation activities. Several areas previously disturbed by these mining activities have been reclaimed and reseeded with 'final' or 'contemporaneous' plant seed mixtures. One such area is called the "Leach Field Area". It is located near the end of a dirt road that begins from State Hwy. 6 and runs through the Plateau Mining Corporation's property. The study area will eventually be used for recreation and occupational uses. The Leach Field Area was seeded with the contemporaneous seed mixture, or a seed mixture that was not intended to duplicate or establish plant communities analogous to those adjacent undisturbed communities. There are special circumstances that have precluded Plateau Mining Corporation from seeding it with the final seed mix. The following statement taken from the Crandall Canyon Mining and Reclamation Plan explains these circumstances.

The approved premining land use designation for Crandall Canyon is undeveloped land. However, pursuant to negotiations for relocating the Barn Canyon powerline across private land, the landowner (C-Canyon, L.C.) requested and was given the opportunity to acquire the land shown on Map 1 (Agreement Document) for his authorization to install the powerline across his property. The new landowner is requesting a higher and better use of the land which requires portions of the M&RP be amended to facilitate his needs for unrestricted access to his land

during the operational, reclamation and post reclamation phases of the Mining and Reclamation Plan (Appendix 3.7V). The land owned by C-Canyon, L.C., falling within the disturbed area boundary (as shown on Map 1) will be reclaimed to a recreational postmining use. All other land with the disturbed area boundary will be reclaimed to its premining land use of undeveloped land. The primary road will remain for C-Canyon, L.C., to access its lands.

Therefore, at the request of the new landowner, the Leach Field Area in Crandall Canyon will be left in its present condition and an application for final bond release (Phase III Bond Release) will be sought. In doing so, approval was necessary to adjust the final reclamation standards of this area through the State of Utah, Division of Oil, Gas & Mining (DOGGM). During the approval process, it was also necessary for DOGM to obtain an allowance from the State of Utah, Division of Wildlife Resource (DWR) to have standards with no woody species density requirements. These approvals were obtained.

Two years of data is necessary for Phase III Bond Release. A report was also written for data collected in 2001. This earlier report was called:

VEGETATION MONITORING
FOR PHASE III BOND RELEASE
FOR THE LEACH FIELD AREA
IN CRANDALL CANYON

YEAR 1 STUDY
2001

The 2002 data in this document will be used as Year 2 as provides quantitative vegetation data for a Phase III (Final) Bond Release application.

Vegetation in the Leach Field Area was sampled in the growing season of 2002 as a means to monitor the success of revegetation activities accomplished by the Plateau Mining Corporation.

A certain degree of success could determine whether or not Phase III Bond Release would be

possible. Phase III Bond Release applications are sought through DOGM.

A Reference Area, or an area previously chosen to represent a standard of success for the revegetation in Crandall Canyon, has also been sampled for comparisons. This area was located near Plateau Mining Corporation's Willow Creek current coal yard.

METHODS

Quantitative and qualitative data were taken from the vegetation of the Leach Field Area in Crandall Canyon and the Reference Area. In order for the data to be compared statistically, methodologies for sampling in 2002 were virtually identical to those employed in 2001. Sampling was conducted from July 24-25, 2002. 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 Leach Field Area. At regular intervals along the transect line, random numbers were generated and used to measure distances at right angles from the line to determine sample locations. Whether these random numbers were odd or even determined which side of the transect line a given quadrat was placed. The random number selected would be high

enough to place quadrats to the lateral limits of the Leach Field 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.

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 measure 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:

$$IS_{MO} = \left(\frac{2MW}{MA + MB} \right) \times 100$$

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 another 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 Leach Field Area

Total living cover of the reclaimed Leach Field Area in 2002 was estimated at 60.88%. Of that

living cover, 91.53% of it were grasses, 8.05% were forbs, and 0.42% were shrubs (Table 1). The dominant grass species in descending order were: mountain brome (*Bromus carinatus*), crested wheatgrass (*Agropyron cristatum*) and Gt. Basin wildrye (*Elymus cinereus*). The dominant forb species was alfalfa (*Medicago sativa*). The only woody species present in the quadrats was viscid rabbitbrush (*Chrysothamnus viscidiflorus*). For 2002 cover and frequency values by species of the reclaimed Leach Field, refer to Table 2.

Reference Area

The Reference Area chosen to be used for standards of revegetation success had a total living cover of the 36.50% (Table 3). Grasses dominated the living cover comprising 65.28% of the composition. Shrubs comprised 23.11%, and forbs 11.60% of the living cover (Table 3). The dominant species for the Reference Area was the grass, Salina wildrye (*Elymus salinus*), followed by a shrub, big sagebrush (*Artemisia tridentata*). The dominant forb was Louisiana wormwood (*Artemisia ludoviciana*). For cover and frequency by species for this community, refer to Table 4.

Data Set Comparisons: 2001-2002

Comparisons were made between the 2001 and 2002 data of the reclaimed Leach Field Area in Crandall Canyon and its Reference Area near the Willow Creek coal yard in Price Canyon. To begin, statistical tests were implemented comparing the total living plant cover of the two areas.

In 2001 and 2002, a “Student’s t-test” analysis suggested that the vegetation of the Leach Field Area had a statistically significant greater amount of total living cover than that of the Reference Area (Fig. 1).

FIG. 1. STUDENT’S T-TEST - A Two-Year Total Living Cover Comparison Between the Reclaimed Area at Crandall Canyon and its Reference Area (2001-2002).

	\bar{x}	s	n	t	df	SL
2001						
Reclaimed Area:	66.63	7.36	40			
Reference Area:	48.00	11.96	40			
t-test				8.390	78	p<.005
2002						
Reclaimed Area:	60.88	11.06	40			
Reference Area:	36.50	13.33	40			
t-test				8.902	78	p<.005
\bar{x} = mean s = standard deviation n = sample size t = Student's t-value df = degrees of freedom SL = Significance Level						

Next, although the specific procedures to monitor final diversity standards were not explicitly outlined in Willow Creek’s Mining & Reclamation Plan (MRP) for the Leach Field Area in Crandall Canyon, the State of Utah requires final revegetation to be restored to cover that is “diverse, effective, and permanent”. Community or species diversity is therefore necessary to achieve Phase III Bond Release. The Motyka Index was recommended in Plateau Mining Corporation’s plans to be used to compare species diversity. Although this index is more of a ‘similarity index’ than a ‘diversity index’, it has been employed here to compare the data sets. The following parameters were assigned in Willow Creek’s plan as 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 Two-Year Comparison Between the Reclaimed Area at Crandall Canyon and its Reference Area (2001-2002).

$$IS_{MO} = \left(\frac{2MW}{MA+MB} \right) \times 100$$

	$IS_{MO} =$
2001	65.384
2002	49.281

IS_{MO} = Motyka Index
 MW = \sum of the smaller quantitative values of species of two communities
 MA = \sum of the quantitative values of all species in the reclaimed area community
 MB = \sum of the quantitative values of all species in the reference area community.

When using the above categories and employing the Motyka Index, the similarity value between the two communities was determined to be 49.28% in 2002. For a comparison between 2001 and 2002, refer to Fig. 2.

MacArthur's Diversity Index, a well-documented index to show community diversity, was also employed to the data sets

of the reclaimed Leach Field Area and the Reference Area. This comparison suggested that the total diversity of the Leach Field Area was greater than that of the Reference Area for both 2001 and 2002 (Fig. 3).

Still another method of comparing

FIG. 3. MacARTHUR'S INDEX - A Two-Year Comparison Between the Reclaimed Area at Crandall Canyon and its Reference Area (2001-2002).

	$1/\sum p_i^2 =$
2001	
<u>Reclaimed Area:</u>	10.446
<u>Reference Area:</u>	4.755
2002	
<u>Reclaimed Area:</u>	6.577
<u>Reference Area:</u>	4.685

p_i = the proportion of sum frequency contributed by the i th species in the sample area of concern.

species diversity of the two areas is to simply calculate the mean number of species present in the sample quadrats. Two-year results from this method also suggested that the Leach Field Area was more diverse with respect to the number of species when compared to the Reference Area (Fig. 4).

As one will note, cover and diversity for both the reclaimed Leach Field Area and Reference Area

FIG. 4. AVERAGE NUMBER OF SPECIES PER SQUARE METER- A Two-Year Comparison Between the Reclaimed Area at Crandall Canyon and its Reference Area (2001-2002).

	\bar{x} NO. SPP/M ² =
2001	
<u>Reclaimed Area:</u>	3.93
<u>Reference Area:</u>	3.03
2002	
<u>Reclaimed Area:</u>	3.15
<u>Reference Area:</u>	2.45

\bar{x} = mean
 NO. = number
 SPP = species
 M² = meter squared

decreased in 2002 when compared to 2001. One probable explanation for this change is the drought conditions that continue in Utah. The year 2002 was the fourth year of lower-than-average precipitation along the Wasatch Plateau, the geographic providence in which the study areas are located.

DISCUSSION

Approval by the State of Utah for Phase III Bond Release is dependent on several factors. The results of quantitative sampling the vegetation in the Leach Field Area and the Reference Area, chosen to represent revegetation standards, enables investigators to compare several

parameters of these two areas. For example, total ground cover, lifeform composition, cover by species, and frequency have been reported in the tables. Statistical tests and other community analyses have been employed on the data sets as a means to define and clarify the findings.

One community similarity index, Motyka's Index, established a value to represent the similarity of the two communities with respect to specific parameters (non-weedy shrub cover, weedy shrub cover, native perennial grass cover, etc). Using these parameters the Motyka's Index suggested that these two areas are dissimilar. This, however, is not surprising because the reclaimed Leach Field Area was seeded with a mixture of plant species not meant to duplicate the communities of the native undisturbed plant communities of the adjacent areas. Furthermore, woody plant species were not seeded in this area as they may have compromised the functional aspects of the Leach Field. The established vegetation does, however, represent the desires of the new landowner who wishes to use the property "to facilitate his needs for unrestricted access to his land during the operational, reclamation and post reclamation phases of the Mining and Reclamation Plan" (see Introduction of this report). In other words, this landowner wants the Leach Field Area to retain the plant species that currently exist there.

To continue the discussion of the comparison between the Leach Field Area and the Reference Area, two diversity indices suggested that the Leach Field Area had greater diversity than the Reference Area in 2001 and 2002 (MacArthur's Diversity Index and Average Number of Species Present).

The data analyses presented in this report suggest that the Leach Field Area had acceptable cover and diversity when compared to the native, undisturbed Reference Area. Although the species present in the Leach Field Area do not exactly duplicate the undisturbed Reference Area, they represent the preference of the current landowner. Therefore, the data sets summarized in this report (and the 2001 report mentioned in the Introduction of this report) could be used for the two years necessary for the Phase III Bond Release application through the State of Utah.

TABLE 1: Total cover and composition summary of the reclaimed areas in the Leach Field Area in Crandall Canyon.

TOTAL COVER	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE
Living Cover	60.88	11.06	40
Litter	29.83	10.31	40
Bareground	6.33	3.30	40
Rock	2.98	2.60	40

COMPOSITION

Shrubs	0.42	2.60	40
Forbs	8.05	9.69	40
Grasses	91.53	10.39	40

TABLE 2: Species cover and frequency summary of the reclaimed areas in the Leach Field Area in Crandall Canyon.

SPECIES	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE	RELATIVE FREQUENCY
SHRUBS				
<i>Chrysothamnus viscidiflorus</i>	0.25	1.56	40	2.50
FORBS				
<i>Artemisia ludoviciana</i>	0.10	0.44	40	5.00
<i>Chenopodium sp.</i>	0.33	1.13	40	10.00
<i>Iva axillaris</i>	0.13	0.78	40	2.50
<i>Lappula occidentalis</i>	0.05	0.31	40	2.50
<i>Medicago sativa</i>	4.23	4.74	40	55.00
GRASSES				
<i>Agropyron cristatum</i>	14.63	13.76	40	72.50
<i>Bromus carinatus</i>	18.48	18.60	40	67.50
<i>Elymus cinereus</i>	10.88	20.64	40	30.00
<i>Elymus junceus</i>	3.25	13.11	40	7.50
<i>Elymus lanceolatus</i>	0.25	1.09	40	5.00
<i>Elymus smithii</i>	1.50	3.57	40	20.00
<i>Stipa comata</i>	5.83	12.97	40	25.00
<i>Stipa hymenoides</i>	1.00	3.00	40	10.00

TABLE 3: Total cover and composition summary of the Reference Area for Crandall Canyon (located in Price Canyon).

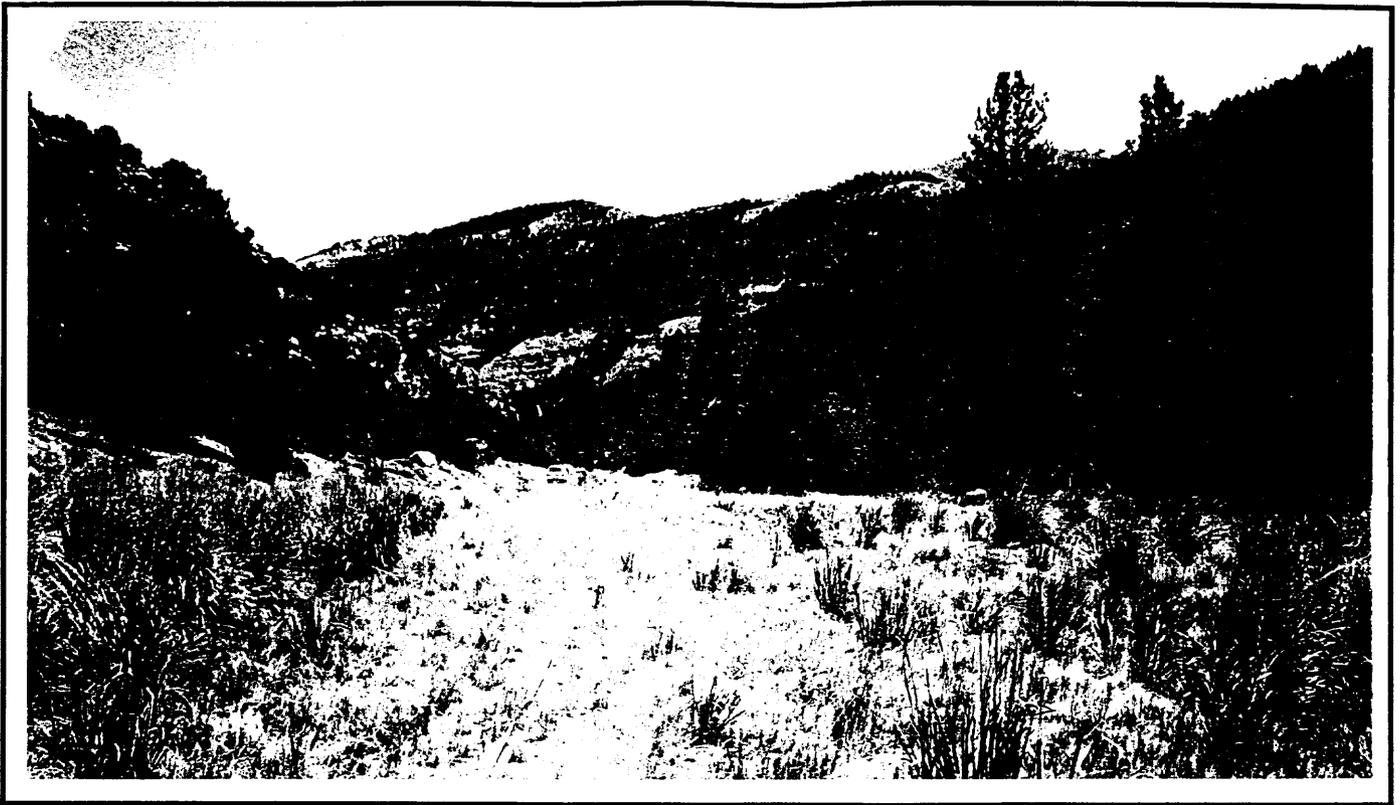
TOTAL COVER	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE
Living Cover	36.50	13.33	40
Litter	9.55	6.24	40
Bareground	9.20	7.33	40
Rock	44.75	18.47	40

COMPOSITION

Shrubs	23.11	35.02	40
Forbs	11.60	18.02	40
Grasses	65.28	33.55	40

TABLE 4: Species cover and frequency summary of the Reference Area for Crandall Canyon (located in Price Canyon).

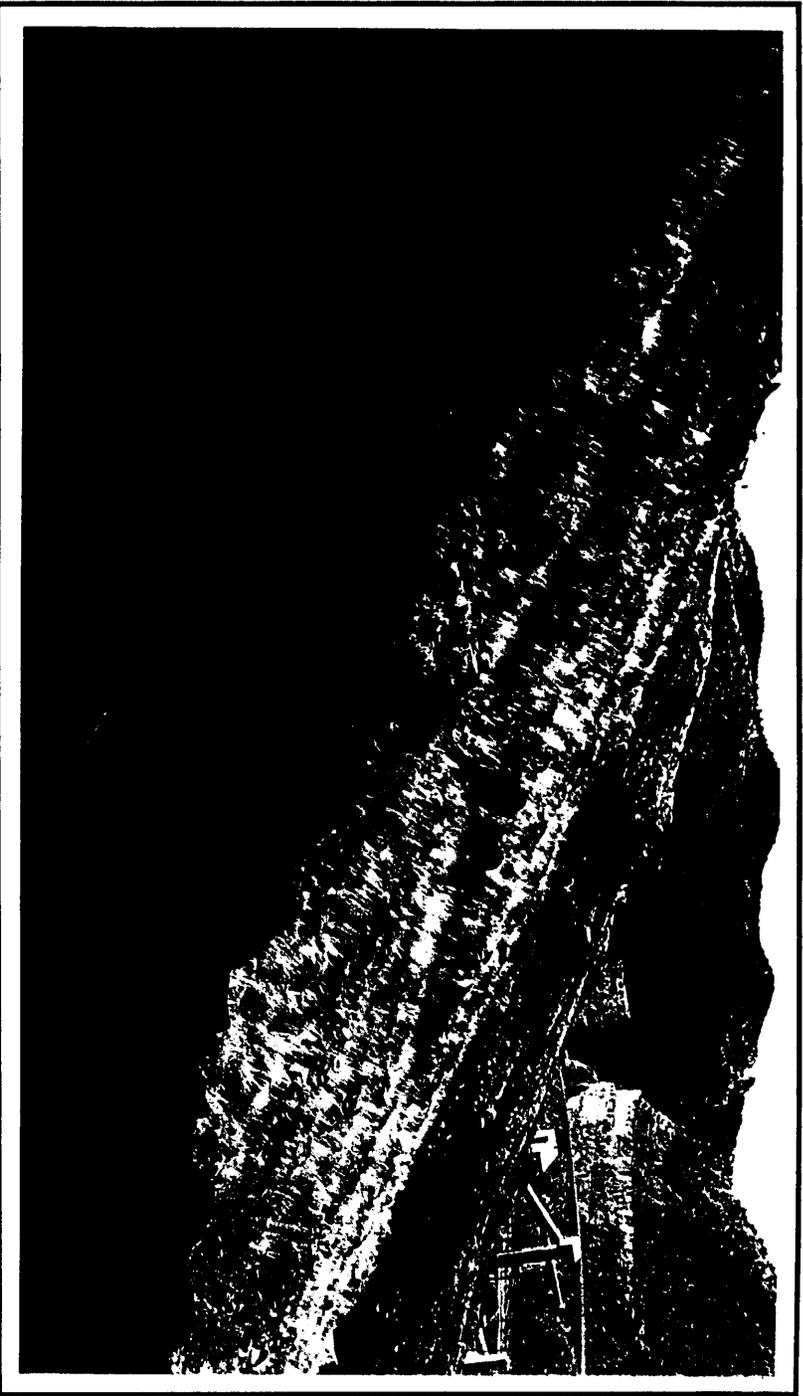
SPECIES	% MEAN COVER	STANDARD DEVIATION	SAMPLE SIZE	RELATIVE FREQUENCY
SHRUBS				
<i>Artemisia tridentata</i>	5.75	9.04	40	35.00
<i>Atriplex canescens</i>	0.75	3.46	40	5.00
<i>Artemisia nova</i>	0.45	2.81	40	2.50
<i>Opuntia polyacantha</i>	0.13	0.78	40	2.50
FORBS				
<i>Artemisia ludoviciana</i>	3.88	6.25	40	35.00
<i>Machaeranthera grindelioides</i>	0.25	1.09	40	5.00
GRASSES				
<i>Bromus tectorum</i>	4.93	6.11	40	57.50
<i>Elymus salinus</i>	18.25	15.61	40	82.50
<i>Stipa comata</i>	1.00	3.00	40	12.50
<i>Stipa hymenoides</i>	0.75	3.96	40	5.00



Reclaimed Areas of the Leach Field in Crandall Canyon (1 of 2)



Reclaimed Areas of the Leach Field in Crandall Canyon (2 of 2)



Reference Area for Crandall Canyon (1 of 2)



Reference Area for Crandall Canyon (2 of 2)

APPENDIX

Raw Data
2002

PLATEAU MINING CORP

Crandall Canyon

Reclaimed Leach Field

Exposure: E

Slope: 12 deg

Sample Date: 24-25 July 02

	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
<i>Chrysothamnus viscidiflorus</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FORBS							
<i>Artemisia ludoviciana</i>	0.00	0.00	0.00	2.00	2.00	0.00	0.00
<i>Chenopodium sp.</i>	0.00	0.00	0.00	1.00	0.00	0.00	2.00
<i>Iva axillaris</i>	0.00	0.00	0.00	0.00	5.00	0.00	0.00
<i>Lappula occidentalis</i>	0.00	0.00	0.00	2.00	0.00	0.00	0.00
<i>Medicago sativa</i>	0.00	5.00	5.00	5.00	18.00	5.00	8.00
GRASSES							
<i>Agropyron cristatum</i>	20.00	30.00	5.00	20.00	5.00	0.00	0.00
<i>Bromus carinatus</i>	10.00	10.00	45.00	35.00	20.00	55.00	50.00
<i>Elymus cinereus</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Elymus junceus</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Elymus lanceolatus</i>	5.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Elymus smithii</i>	5.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Stipa comata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Stipa hymenoides</i>	0.00	0.00	10.00	0.00	0.00	10.00	10.00
COVER							
Total Living Cover	40.00	45.00	65.00	65.00	50.00	70.00	70.00
Litter	55.00	50.00	30.00	30.00	45.00	25.00	20.00
Bareground	4.00	4.00	3.00	3.00	4.00	3.00	8.00
Rock	1.00	1.00	2.00	2.00	1.00	2.00	2.00
% COMPOSITION							
Shrubs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forbs	0.00	11.11	7.69	15.38	50.00	7.14	14.29
Grasses	100.00	88.89	92.31	84.62	50.00	92.86	85.71

8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	1.00	10.00	0.00	0.00	10.00	5.00	5.00	5.00	5.00
25.00	10.00	15.00	10.00	15.00	25.00	10.00	10.00	20.00	20.00
35.00	54.00	45.00	30.00	10.00	40.00	45.00	30.00	25.00	25.00
0.00	0.00	0.00	0.00	25.00	0.00	0.00	15.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00	5.00	5.00
0.00	0.00	10.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75.00	65.00	80.00	45.00	50.00	75.00	60.00	75.00	55.00	55.00
23.00	25.00	15.00	40.00	45.00	20.00	35.00	20.00	35.00	40.00
1.00	5.00	3.00	10.00	4.00	4.00	4.00	4.00	8.00	4.00
1.00	5.00	2.00	5.00	1.00	1.00	1.00	1.00	2.00	1.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20.00	1.54	12.50	0.00	0.00	13.33	8.33	6.67	9.09	9.09
80.00	98.46	87.50	100.00	100.00	86.67	91.67	93.33	90.91	90.91

18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00
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	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	7.00	0.00	0.00	10.00	0.00	10.00	10.00	0.00	0.00
30.00	15.00	25.00	30.00	40.00	0.00	40.00	15.00	0.00	10.00
0.00	40.00	10.00	20.00	10.00	0.00	15.00	5.00	0.00	10.00
15.00	0.00	0.00	0.00	0.00	55.00	0.00	20.00	0.00	45.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.00	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	0.00	5.00	0.00	0.00	0.00	0.00	0.00
0.00	8.00	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
55.00	70.00	40.00	50.00	65.00	65.00	65.00	60.00	60.00	70.00
35.00	25.00	45.00	35.00	30.00	30.00	25.00	25.00	20.00	20.00
9.00	4.00	10.00	10.00	4.00	4.00	8.00	10.00	10.00	9.00
1.00	1.00	5.00	5.00	1.00	1.00	2.00	5.00	10.00	1.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.67	0.00	0.00
9.09	10.00	0.00	0.00	15.38	0.00	15.38	16.67	0.00	7.14
90.91	90.00	100.00	100.00	84.62	100.00	84.62	66.67	100.00	92.86

	28.00	29.00	30.00	31.00	32.00	33.00	34.00	35.00	36.00	37.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
5.00	10.00	0.00	10.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00

55.00	35.00	5.00	30.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00
10.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	80.00	0.00	30.00	0.00	25.00	0.00	0.00	0.00	10.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.00	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	5.00	5.00	0.00	0.00	15.00
0.00	0.00	0.00	0.00	0.00	35.00	50.00	35.00	0.00	35.00	40.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

70.00	50.00	85.00	40.00	65.00	55.00	65.00	60.00	50.00	65.00
20.00	40.00	10.00	40.00	30.00	35.00	25.00	35.00	30.00	20.00
8.00	5.00	4.00	10.00	4.00	9.00	5.00	4.00	15.00	10.00
2.00	5.00	1.00	10.00	1.00	1.00	5.00	1.00	5.00	5.00

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.14	20.00	0.00	25.00	0.00	0.00	0.00	0.00	10.00	0.00
92.86	80.00	100.00	75.00	100.00	100.00	100.00	100.00	90.00	100.00

PLATEAU MINING CORP
 Crandall Canyon
 Reclaimed Leach Field
 Exposure: E
 Slope: 12 deg
 Sample Date: 24-25 July 02

38.00	39.00	40.00	Mean	SDev	Freq	
0.00	0.00	0.00	0.25	1.56	2.50	TREES & SHRUBS <i>Chrysothamnus viscidiflorus</i>
0.00	0.00	0.00	0.10	0.44	5.00	FORBS <i>Artemisia ludoviciana</i>
0.00	0.00	0.00	0.33	1.13	10.00	<i>Chenopodium sp.</i>
0.00	0.00	0.00	0.13	0.78	2.50	<i>Iva axillaris</i>
0.00	0.00	0.00	0.05	0.31	2.50	<i>Lappula occidentalis</i>
0.00	0.00	0.00	4.23	4.74	55.00	<i>Medicago sativa</i>
10.00	0.00	0.00	14.63	13.76	72.50	GRASSES <i>Agropyron cristatum</i>
0.00	50.00	0.00	18.48	18.60	67.50	<i>Bromus carinatus</i>
40.00	0.00	75.00	10.88	20.64	30.00	<i>Elymus cinereus</i>
0.00	0.00	0.00	3.25	13.11	7.50	<i>Elymus junceus</i>
0.00	0.00	0.00	0.25	1.09	5.00	<i>Elymus lanceolatus</i>
0.00	0.00	0.00	1.50	3.57	20.00	<i>Elymus smithii</i>
0.00	5.00	0.00	5.83	12.97	25.00	<i>Stipa comata</i>
10.00	0.00	0.00	1.00	3.00	10.00	<i>Stipa hymenoides</i>
60.00	55.00	75.00	60.88	11.06		COVER Total Living Cover
15.00	35.00	15.00	29.83	10.31		Litter
15.00	5.00	5.00	6.33	3.30		Bareground
10.00	5.00	5.00	2.98	2.60		Rock
0.00	0.00	0.00	0.42	2.60		% COMPOSITION Shrubs
0.00	0.00	0.00	8.05	9.69		Forbs
100.00	100.00	100.00	91.53	10.39		Grasses

PLATEAU MINING CORP
 Crandall Canyon
 Reference Area (Near Coal Yard)
 Exposure: SW
 Slope: 33 deg
 Sample Date: 24-25 July 02

	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
<i>Artemisia tridentata</i>	0.00	0.00	0.00	5.00	0.00	25.00	25.00
<i>Atriplex canescens</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Artemisia nova</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Opuntia polyacantha</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Pinus edulis</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FORBS							
<i>Artemisia ludoviciana</i>	0.00	5.00	10.00	0.00	0.00	0.00	0.00
<i>Machaeranthera grindelioides</i>	5.00	0.00	0.00	0.00	0.00	0.00	0.00
GRASSES							
<i>Bromus tectorum</i>	25.00	5.00	10.00	10.00	15.00	0.00	0.00
<i>Elymus salinus</i>	0.00	0.00	10.00	5.00	50.00	25.00	5.00
<i>Stipa hymenoides</i>	0.00	25.00	0.00	5.00	0.00	0.00	0.00
<i>Stipa comata</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COVER							
Total Living Cover	30.00	35.00	30.00	25.00	65.00	50.00	30.00
Litter	5.00	20.00	20.00	20.00	20.00	10.00	5.00
Bareground	35.00	10.00	5.00	5.00	5.00	5.00	5.00
Rock	30.00	35.00	45.00	50.00	10.00	35.00	60.00
% COMPOSITION							
Shrubs	0.00	0.00	0.00	20.00	0.00	50.00	83.33
Forbs	16.67	14.29	33.33	0.00	0.00	0.00	0.00
Grasses	83.33	85.71	66.67	80.00	100.00	50.00	16.67

8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00
25.00	20.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	5.00	0.00	0.00	0.00	0.00
0.00	0.00	13.00	10.00	0.00	3.00	0.00	0.00	2.00	0.00
5.00	0.00	7.00	45.00	30.00	27.00	55.00	35.00	18.00	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
50.00	20.00	20.00	55.00	30.00	35.00	55.00	35.00	20.00	50.00
10.00	5.00	5.00	10.00	10.00	10.00	5.00	5.00	5.00	10.00
5.00	5.00	25.00	25.00	5.00	10.00	5.00	5.00	5.00	5.00
35.00	70.00	50.00	10.00	55.00	45.00	35.00	55.00	70.00	35.00
90.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	14.29	0.00	0.00	0.00	50.00
10.00	0.00	100.00	100.00	100.00	85.71	100.00	100.00	100.00	50.00

18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00
20.00	20.00	25.00	15.00	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	10.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.00	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	15.00	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	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
2.00	0.00	0.00	10.00	5.00	15.00	0.00	2.00	5.00	20.00
8.00	0.00	0.00	0.00	5.00	20.00	5.00	0.00	30.00	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	10.00	0.00	0.00	0.00	0.00	15.00	0.00
30.00	20.00	40.00	40.00	45.00	35.00	25.00	20.00	60.00	30.00
5.00	5.00	5.00	10.00	10.00	5.00	5.00	5.00	10.00	5.00
5.00	5.00	5.00	5.00	10.00	5.00	5.00	10.00	15.00	15.00
60.00	70.00	50.00	45.00	35.00	55.00	65.00	65.00	15.00	50.00
66.67	100.00	100.00	50.00	44.44	0.00	0.00	90.00	16.67	0.00
0.00	0.00	0.00	0.00	33.33	0.00	80.00	0.00	0.00	16.67
33.33	0.00	0.00	50.00	22.22	100.00	20.00	10.00	83.33	83.33

28.00	29.00	30.00	31.00	32.00	33.00	34.00	35.00	36.00	37.00
0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	8.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	10.00	15.00	5.00	10.00	0.00	7.00	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	5.00	0.00	0.00	5.00	0.00	5.00
10.00	5.00	30.00	20.00	30.00	20.00	35.00	35.00	40.00	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	5.00	0.00	0.00	0.00	5.00	5.00	0.00	0.00
10.00	20.00	45.00	30.00	50.00	30.00	50.00	45.00	55.00	45.00
2.00	10.00	10.00	5.00	30.00	5.00	5.00	10.00	10.00	10.00
3.00	15.00	10.00	5.00	5.00	5.00	5.00	20.00	5.00	25.00
85.00	55.00	35.00	60.00	15.00	60.00	40.00	25.00	30.00	20.00
0.00	0.00	0.00	0.00	0.00	16.67	0.00	0.00	14.55	0.00
0.00	50.00	0.00	33.33	30.00	16.67	20.00	0.00	12.73	0.00
100.00	50.00	100.00	66.67	70.00	66.67	80.00	100.00	72.73	100.00

PLATEAU MINING CORP
 Crandall Canyon
 Reference Area (Near Coal Yard)
 Exposure: SW
 Slope: 33 deg
 Sample Date: 24-25 July 02

38.00	39.00	40.00	Mean	SDev	Freq	
<hr/>						TREES & SHRUBS
7.00	0.00	10.00	5.75	9.04	35.00	<i>Artemisia tridentata</i>
0.00	0.00	0.00	0.75	3.46	5.00	<i>Atriplex canescens</i>
0.00	0.00	0.00	0.45	2.81	2.50	<i>Artemisia nova</i>
0.00	0.00	0.00	0.13	0.78	2.50	<i>Opuntia polyacantha</i>
0.00	0.00	0.00	0.38	2.34	2.5	<i>Pinus edulis</i>
<hr/>						FORBS
8.00	10.00	0.00	3.88	6.25	35.00	<i>Artemisia ludoviciana</i>
0.00	0.00	0.00	0.25	1.09	5.00	<i>Machaeranthera grindelioides</i>
<hr/>						GRASSES
5.00	10.00	0.00	4.93	6.11	57.50	<i>Bromus tectorum</i>
25.00	20.00	5.00	18.25	15.61	82.50	<i>Elymus salinus</i>
0.00	0.00	0.00	0.75	3.96	5.00	<i>Stipa hymenoides</i>
0.00	0.00	0.00	1.00	3.00	12.50	<i>Stipa comata</i>
<hr/>						COVER
45.00	40.00	15.00	36.50	13.33		Total Living Cover
15.00	25.00	5.00	9.55	6.24		Litter
15.00	5.00	5.00	9.20	7.33		Bareground
25.00	30.00	75.00	44.75	18.47		Rock
<hr/>						% COMPOSITION
15.56	0.00	66.67	23.11	35.02		Shrubs
17.78	25.00	0.00	11.60	18.02		Forbs
66.67	75.00	33.33	65.28	33.55		Grasses

**SUBSIDENCE MONITORING REPORT
2002
WILLOW CREEK MINE
C/007/038**

**Plateau Mining Corporation
P.O. Box 30
847 NW HWY 191
Helper, Utah 84526**

**2002 SUBSIDENCE MONITORING REPORT
WILLOW CREEK MINE
C/007/038**

INTRODUCTION

The Willow Creek Mine is owned and operated by Plateau Mining Corporation (PMC). The mine is located approximately 4 miles North of Helper, Utah, at the extreme northwest end of the Book Cliffs Coal Field. Mining commenced in the fall of 1996 with continuous mining equipment. Longwall mining began in mid-1998 and continued until November of 1998, at which time the mine experienced a fire at its D-1 longwall panel forcing the sealing of the mine.

Longwall mining began with the D-2 panel in the fall of 1999, and continued until July 31, 2000, when the mine experiences another fire at its D-3 panel. The mine was again sealed and no mining has occurred since then. During the fall of 2001, the mine was ventilated, but no mining occurred.

During 2002, mining equipment was removed from the mine in preparation for final sealing. The equipment removal operation was overseen by the BLM and DOGM to their satisfaction. Maps showing the equipment sealed in the mine and the final closure of the mine are presented in Appendix D of the 2002 Annual Report.

MONITORING

Subsidence monitoring was conducted in 2002 on the area overlaying and adjacent to the longwalled panels. The data shows no substantial subsidence has occurred over the area due to mining. Subsequent monitoring of the control points that exhibited slight movement in prior years, show no substantial subsidence. Subsidence monitoring locations can be seen on Drawing 1.

According to the mining and reclamation plan, approximately 90 percent of longwall related subsidence occurs within 2 to 3 years following completion of mining. The BLM determines that subsidence is substantially complete by showing the cumulative subsidence over a three year monitoring period having been 1 foot or less under normal conditions.

An amendment will be submitted to the Division for approval to discontinue subsidence monitoring. However, should the amendment not be approved then monitoring of the control points above the longwalled panels will be conducted in 2003.

Table 1

Willow Creek Subsidence Monitoring Report

Point No.	See Note	Northing					Easting					Elevation					Difference in Subsidence							
		1997	1998	1999	2000	2001	2002	1997	1998	1999	2000	2001	2002	1997	1998	1999	2000	2001	2002	1st Year	2nd Year	3rd Year	4th Year	5th Year
SS-CON-1		522,620.59	522,620.59	522,620.59			2,178,659.27	2,178,659.27	2,178,659.27				8,454.68	8,454.68	8,454.68				0.00	0.00				
MAT		535,667.74	535,667.74	535,667.74			2,181,889.15	2,181,889.15	2,181,889.15				7,454.05	7,454.05	7,454.05				0.00	0.00				
GENE		523,471.08	523,471.08	523,471.08			2,191,540.98	2,191,540.98	2,191,540.98				8,270.31	8,270.31	8,270.31				0.00	0.00				
EAST		510,457.12	510,457.12	510,457.12			2,183,503.59	2,183,503.59	2,183,503.59				6,404.55	6,404.55	6,404.55				0.00	0.00				
BC-1		510,968.15	510,968.15	510,968.15			2,176,438.10	2,176,438.10	2,176,438.10				6,164.78	6,164.78	6,164.78				0.00	0.00				
BARN		510,795.10	510,795.10	510,795.10			2,177,679.20	2,177,679.20	2,177,679.20				6,266.66	6,266.66	6,266.66				0.00	0.00				
CPSS-A1		522,745.86					2,187,566.89						8,197.40											
CPSS-A2		521,671.73					2,187,569.75						8,193.80											
CPSS-A3		520,768.74					2,187,896.03						8,066.11											
CPSS-A4		519,860.97					2,187,988.46						7,912.53											
CPSS-A5		519,011.36					2,187,610.47						7,916.46											
CPSS-A6		517,930.91					2,187,299.45						7,612.88											
CPSS-B1		522,746.92			522,746.86	522,746.92	2,183,319.13				2,183,319.73	2,183,319.56	8,436.73			8,436.26	8,436.73		-0.47	0.00				
CPSS-B2		522,159.43	522,159.33		522,159.33	522,159.43	2,183,398.56	2,183,398.54			2,183,399.08	2,183,398.56	8,405.47	8,405.40		8,405.08	8,405.45		-0.07	-0.39	-0.02			
CPSS-B3		521,609.07	521,608.90		521,608.78	521,609.07	2,183,159.40	2,183,159.36			2,183,159.87	2,183,159.40	8,333.67	8,333.55		8,333.30	8,333.64		-0.12	-0.37	-0.03			
CPSS-B4		521,163.03	521,162.96		521,163.03	521,163.03	2,182,946.10	2,182,945.99			2,182,946.10	2,182,946.10	8,311.86	8,311.76		8,311.86	8,311.85		-0.10	0.00	-0.01			
CPSS-B5		520,975.93	520,975.93	520,975.71	520,975.64	520,975.93	2,183,005.23	2,183,005.23	2,183,005.32	2,183,005.30	2,183,005.23		8,241.87		8,241.83	8,241.64	8,241.24			-0.04	-0.23	-0.63		
CPSS-B6		520,793.89	520,793.76		520,793.55	520,793.89	2,183,045.26	2,183,045.19			2,183,045.69	2,183,045.26	8,173.15	8,173.11		8,172.82	8,173.12		-0.04	-0.33	-0.03			
CPSS-B7		520,576.29	520,576.11	520,575.99	520,575.94	520,576.18	2,183,093.01	2,183,093.02	2,183,093.09	2,183,093.01	2,183,092.89		8,155.94	8,155.90	8,155.90	8,155.77	8,155.92		-0.04	-0.04	-0.17	-0.02		
CPSS-B8		520,393.19	520,393.01	520,392.88	520,393.05	520,393.25	2,183,067.84	2,183,067.87	2,183,067.90	2,183,067.90	2,183,067.78		8,138.52	8,138.51	8,138.54	8,138.17	8,138.42		-0.02	0.02	-0.35	-0.10		
CPSS-B9		520,193.59	520,193.46	520,193.30	520,193.24	520,193.49	2,183,013.81	2,183,013.83	2,183,013.85	2,183,013.79	2,183,013.76		8,141.51	8,141.46	8,141.48	8,141.33	8,141.50		-0.05	-0.03	-0.18	-0.01		
CPSS-B10		520,106.34	520,106.18		520,105.95	520,106.31	2,182,977.42	2,182,977.45			2,182,977.39	2,182,977.42	8,150.56	8,150.49		8,150.32	8,150.56		-0.07		-0.24	0.00		
CPSS-B11		520,016.74	520,016.61	520,016.51	520,016.39	520,016.72	2,182,929.89	2,182,929.88	2,182,929.95	2,182,929.87	2,182,929.88		8,149.32	8,149.24	8,149.28	8,149.06	8,149.31		-0.08	-0.04	-0.26	-0.01		
CPSS-B12		519,919.33	519,919.21		519,918.93	519,919.33	2,182,896.04	2,182,896.03			2,182,896.00	2,182,896.02	8,127.35	8,127.28		8,127.05	8,127.34		-0.07		-0.30	-0.01		
CPSS-B13		519,838.92	519,838.82		519,838.59	519,838.91	2,182,833.93	2,182,833.92			2,182,834.43	2,182,833.93	8,131.04	8,130.86		8,130.51	8,131.04		-0.18		-0.53	0.00		
CPSS-B14		519,743.12	519,743.00		519,743.19	519,743.13	2,182,808.51	2,182,808.54			2,182,808.59	2,182,808.52	8,113.12	8,113.06		8,112.93	8,113.11		-0.06		-0.19	-0.01		
CPSS-B15		519,652.71	519,652.50		519,652.22	519,472.58	2,182,779.76	2,182,779.76			2,182,779.65	2,182,779.58	8,099.64	8,099.64		8,099.35	8,099.53		0.00		-0.29	-0.11		
CPSS-B16	**	519,554.72	519,554.47				2,182,757.62	2,182,757.59					8,082.02	8,082.14					0.12					
CPSS-B16	**				519,593.39						2,182,737.18					8,083.48								
CPSS-B17	**	519,458.86	519,458.65				2,182,686.73	2,182,686.74					8,075.27	8,075.22					-0.05					
CPSS-B17	**				519,425.02						2,182,661.43					8,076.59								
CPSS-B18		519,348.31	519,348.11		519,347.76	519,348.13	2,182,661.62	2,182,661.70			2,182,661.66	2,182,661.51	8,065.87	8,065.73		8,065.32	8,065.67		-0.14	-0.55				
CPSS-B19		519,244.50	519,244.26	519,244.08	519,244.00	519,244.50	2,182,643.37	2,182,643.44	2,182,643.47	2,182,643.32	2,182,643.37		8,066.37	8,066.28	8,066.22	8,065.81	8,066.25		-0.09	-0.10	-0.56			
CPSS-B20		519,159.92		LOST			2,182,646.53		LOST				8,068.32		LOST						LOST			
CPSS-B20			519,184.81		519,184.69	519,184.80		2,182,647.64		2,182,647.65	2,182,647.51			8,069.88		8,069.55	8,069.73		-0.33					
CPSS-B21		519,068.94		LOST			2,182,681.82		LOST				8,075.41		LOST						LOST			
CPSS-B21			519,084.46		519,084.07	519,084.38		2,182,649.74		2,182,649.63	2,182,649.51			8,073.55		8,073.27	8,073.44		-0.28					
CPSS-B22	**	518,979.74	518,979.62				2,182,676.51	2,182,676.47					8,088.31	8,088.18					-0.13					
CPSS-B22	**				519,018.17	519,018.47					2,182,671.32	2,182,670.87				8,085.65	8,086.24							
CPSS-B23	**	518,872.98	518,872.76				2,182,691.75	2,182,691.87					8,094.70	8,094.31					-0.39					
CPSS-B23	**				518,807.31						2,182,676.24					8,105.25								

Table 1

Willow Creek Subsidence Monitoring Report

																				Difference in				
	See	Northing	Northing	Northing	Northing	Northing	Northing	Easting	Easting	Easting	Easting	Easting	Easting	Elevation	Elevation	Elevation	Elevation	Elevation	Elevation	Subsidence	Subsidence	Subsidence	Subsidence	Subsidence
	Note	1997	1998	1999	2000	2001	2002	1997	1998	1999	2000	2001	2002	1997	1998	1999	2000	2001	2002	1st Year	2nd Year	3rd Year	4th Year	5th Year
Point No.																								
CPSS-B24		518,770.62	518,770.52		518,770.13	518,770.39		2,182,690.49	2,182,690.52		2,182,690.52	2,182,690.35		8,118.15	8,118.07		8,117.07	8,117.80		-0.08	-1.08			
CPSS-B25		518,643.00	518,642.92	518,642.68	518,642.35	518,642.74		2,182,708.90	2,182,708.88	2,182,708.90	2,182,708.92	2,182,708.80		8,147.81	8,147.73	8,147.98	8,147.21	8,147.74	8,147.81	-0.08	0.17	-0.60	-0.07	0.00

Table 1

Willow Creek Subsidence Monitoring Report

Point No.	See Note	Northing					Easting					Elevation					Difference in Subsidence							
		1997	1998	1999	2000	2001	2002	1997	1998	1999	2000	2001	2002	1997	1998	1999	2000	2001	2002	1st Year	2nd Year	3rd Year	4th Year	5th Year
CPSS-B26		518,558.36	518,558.13	518,557.69	518,557.71	518,558.08		2,182,713.22	2,182,713.22	2,182,713.43	2,182,713.49	2,182,713.05		8,161.52	8,161.24	8,161.45	8,160.56	8,161.33	8161.3	-0.28	-0.07	-0.96	-0.19	-0.22
CPSS-B27		518,487.68	518,487.49		518,487.21	518,487.50		2,182,763.51	2,182,763.54		2,182,763.95	2,182,763.39		8,165.95	8,165.85		8,165.27	8,165.68	8165.89	-0.10		-0.68	-0.27	-0.06
CPSS-B28		518,390.47	518,390.27	518,390.06	518,389.93	518,390.25		2,182,799.71	2,182,799.85	2,182,799.68	2,182,799.59	2,182,799.59		8,174.71	8,174.68	8,174.64	8,174.29	8,174.51	8174.73	-0.03	-0.07	-0.42	-0.20	0.02
CPSS-B29		518,278.45	518,278.25	518,278.03	518,277.83	518,278.08		2,182,835.74	2,182,835.88	2,182,835.84	2,182,835.66	2,182,835.65		8,183.00	8,182.94	8,182.79	8,182.63	8,182.88	8183.02	-0.06	-0.21	-0.37	-0.12	0.02
CPSS-B30		518,087.41	518,087.18	518,086.67	518,086.99	518,087.10		2,182,878.18	2,182,878.20	2,182,878.42	2,182,878.77	2,182,877.98		8,182.00	8,181.95	8,182.26	8,181.17	8,181.88	8181.96	-0.05	0.26	-0.83	-0.12	-0.04
CPSS-B31		517,962.54	517,962.37	517,961.81	517,962.08	517,962.31		2,182,752.82	2,182,752.68	2,182,753.06	2,182,753.37	2,182,752.62		8,139.22	8,139.14	8,139.41	8,138.36	8,139.03	8139.16	-0.08	0.19	-0.86	-0.19	-0.06
CPSS-B32		517,780.02	517,779.87	517,780.14	517,780.02	517,779.79		2,182,683.40	2,182,683.27	2,182,683.12	2,182,683.11	2,182,683.17		8,120.42	8,120.35	8,120.15	8,120.00	8,120.29	8120.37	-0.07	-0.27	-0.42	-0.13	-0.05
CPSS-B33	**	517,608.46	517,608.39					2,182,587.51	2,182,587.46					8,119.37	8,119.35					-0.02				
CPSS-B33	**				517,686.32	517,686.58											8,121.97	8,122.62	8122.71			0.65	0.74	
CPSS-B34	**	517,440.39	517,440.35					2,182,472.81	2,182,472.81					8,120.68	8,120.69						0.01			
CPSS-B34	**				517,548.53	517,548.74											8,125.65	8,126.36	8126.64			0.71	0.99	
CPSS-B35		517,243.54	517,243.54	517,242.87	517,243.57	517,243.33		2,182,385.82	2,182,385.82	2,182,385.93	2,182,385.45	2,182,385.62		8,130.64	8,130.64	8,130.49	8,130.18	8,130.56	8130.67	0.00	-0.15	-0.46	-0.08	0.03
CPSS-B36		517,096.27	517,096.29	517,095.51	517,095.76			2,182,271.11	2,182,271.11	2,182,271.24	2,182,271.00			8,165.39	8,165.40	8,165.20	8,164.98		8165.51	0.01	-0.19	-0.41		0.12
CPSS-B37	*	516,895.56	516,895.54					2,182,190.05	2,182,190.06					8,170.19	8,170.18					-0.01				
CPSS-B37	*			516,906.85	516,906.79					2,182,208.01	2,182,207.96					8,163.78	8,163.71		8164.13			-0.07		0.35
CPSS-B38	**	516,694.75	516,832.61					2,182,170.65	2,182,121.59					8,175.99	8,176.36						0.36			0
CPSS-B38	**				516,732.72												8,185.06							
CPSS-B39		516,515.56	516,515.35	516,515.70	516,515.60	516,515.38		2,182,157.41	2,182,157.24	2,182,157.19	2,182,157.27	2,182,157.34		8,160.19	8,160.03	8,160.05	8,160.06	8,160.19	8160.56	-0.16	-0.14	-0.13	0.00	0.37
CPSS-B40		516,426.35	516,426.20	516,426.45	516,426.33	516,426.35		2,182,131.32	2,182,131.22	2,182,131.16	2,182,131.16	2,182,131.32		8,142.62	8,142.50	8,142.47	8,142.44	8,142.62	8143	-0.12	-0.15	-0.18	0.00	0.38
CPSS-B41		516,330.44	516,330.40	516,330.50	516,330.43	516,330.44		2,182,107.58	2,182,107.55	2,182,107.44	2,182,107.44	2,182,107.58		8,124.84	8,124.74	8,124.67	8,124.53	8,124.83	8125.24	-0.10	-0.17	-0.31	-0.01	0.40
CPSS-B42		516,216.10	516,216.07	516,216.21	516,216.13	516,216.10		2,182,097.77	2,182,097.74	2,182,097.58	2,182,097.69	2,182,097.77		8,113.93	8,113.90	8,113.90	8,113.77	8,113.92	8114.39	-0.03	-0.03	-0.16	-0.01	0.46
CPSS-B43		516,134.90	516,134.87	516,135.07	516,134.93	516,134.90		2,182,099.32	2,182,099.26	2,182,099.18	2,182,099.18	2,182,099.32		8,116.09	8,116.04	8,115.97	8,115.88	8,116.08	8116.57	-0.05	-0.12	-0.21	-0.01	0.48
CPSS-B44		516,036.19	516,036.08	516,035.31	516,035.64	516,036.19		2,182,101.33	2,182,101.29	2,182,101.45	2,182,101.84	2,182,101.33		8,120.72	8,120.70	8,120.51	8,120.23	8,120.70	8121.16	-0.02	-0.21	-0.49	-0.02	0.44
CPSS-B45		515,928.14	515,928.07	515,927.35	515,927.71	515,928.14		2,182,127.54	2,182,127.50	2,182,127.46	2,182,128.09	2,182,127.54		8,128.41	8,128.38	8,128.24	8,128.08	8,128.40		-0.03	-0.17	-0.33	-0.01	
CPSS-B46		515,838.21	515,838.17	515,838.10	515,838.01	515,838.21		2,182,141.47	2,182,141.40	2,182,141.33	2,182,141.38	2,182,141.47		8,141.88	8,141.75	8,141.67	8,141.61	8,141.86		-0.13	-0.21	-0.27	-0.02	
CPSS-B47		515,728.20	515,728.14		515,727.79	515,728.20		2,182,184.80	2,182,184.71		2,182,185.45	2,182,184.80		8,163.66	8,163.64		8,163.15	8,163.65		-0.02		-0.51	-0.01	
CPSS-B48		515,647.43	515,647.40			515,647.43		2,182,171.32	2,182,171.28			2,182,171.32		8,144.15	8,144.08			8144.14		-0.07			-0.01	
CPSS-B49		515,533.30	515,533.22	515,533.20	515,533.18	515,533.30		2,182,160.85	2,182,160.80	2,182,160.74	2,182,160.79	2,182,160.85		8,150.65	8,150.60	8,150.38	8,150.47	8,150.63		-0.05	-0.27	-0.18	-0.02	
CPSS-B50		515,451.22	515,451.19	515,450.38	515,450.67	515,451.22		2,182,129.57	2,182,129.55	2,182,129.68	2,182,130.22	2,182,129.57		8,154.35	8,154.31	8,153.65	8,154.23	8,154.33		-0.04	-0.70	-0.12	-0.02	
CPSS-B51		515,387.79			515,387.42	515,387.79		2,182,047.28			2,182,047.91	2,182,047.28		8,159.28			8,158.81	8,159.25				-0.47	-0.03	
CPSS-B52		515,329.12			515,328.64	515,329.12		2,181,969.90			2,181,970.68	2,181,969.90		8,153.27			8,152.86	8,153.25				-0.41	-0.02	
CPSS-B53		515,229.58						2,181,931.85						8,113.66										
CPSS-B54		515,154.24						2,181,909.79						8,084.73										
CPSS-B55		515,055.67						2,181,915.75						8,049.67										
CPSS-B56		514,951.17						2,181,895.69						8,024.18										
CPSS-B57		514,863.31						2,181,846.10						8,011.35										
CPSS-B58		514,793.73						2,181,821.30						7,995.47										
CPSS-B59		514,679.96						2,181,769.76						7,959.38										
CPSS-B60		514,605.34			514,604.69			2,181,721.61			2,181,721.76			7,925.85			7,925.35						-0.50	
CPSS-B61		514,514.83						2,181,694.47						7,871.72										
CPSS-B62		514,424.47			514,423.93			2,181,654.82			2,181,655.01			7,870.80			7,870.42							-0.38

Table 1

Willow Creek Subsidence Monitoring Report

Point No.	See Note	Northing					Easting					Elevation					Difference in Subsidence							
		1997	1998	1999	2000	2001	2002	1997	1998	1999	2000	2001	2002	1997	1998	1999	2000	2001	2002	1st Year	2nd Year	3rd Year	4th Year	5th Year
CPSS-B63		514,332.30						2,181,640.82						7,823.30										
CPSS-B64		514,143.02			514,142.66			2,181,610.85			2,181,611.09			7,809.020			7,807.98						-1.04	
CPSS-B65		513,938.02						2,181,559.09						7,757.540										
CPSS-B66		513,777.42			513,776.84			2,181,459.09			2,181,459.14			7,761.960			7,761.58						-0.38	
CPSS-B67		513,599.48			513,598.91			2,181,389.34			2,181,389.36			7,742.48			7,742.08						-0.40	
CPSS-BA1	**	517,742.25	517,742.20	517,742.20		517,742.25		2,183,424.70	2,183,424.60	2,183,424.60		2,183,424.70		7,948.16	7,948.08	7,948.08		7,948.15	7,948.15	-0.08	-0.08		-0.01	-0.01
CPSS-BA1	**				517,679.27						2,183,471.53						7,951.02							
CPSS-BA2		517,469.18	517,469.10	517,469.10	517,469.28	517,469.18		2,183,680.19	2,183,680.12	2,183,680.12	2,183,679.69	2,183,680.19		7,864.92	7,864.88	7,864.88	7,864.67	7,864.91	7,865	-0.04	-0.04	-0.25	-0.01	0.08
CPSS-BA3		517,261.72	517,261.68	517,261.68	517,261.72	517,261.72		2,184,339.00	2,184,339.00	2,184,339.00	2,184,339.10	2,184,339.10		7,773.45	7,773.40	7,773.40	7,773.45	7,773.44	7,773.74	-0.05	-0.05	0.00	-0.01	0.29
CPSS-BB1		515,376.24		515,376.24				2,182,172.64		2,182,172.64				8,127.61		8,127.61							0.00	
CPSS-BB2		514,561.22		514,561.22				2,183,158.51		2,183,158.51				7,860.68		7,860.68							0.00	
CPSS-BC1	*	516,770.52		516,770.52				2,182,159.96		2,182,159.96				8,184.03		8,184.03							0.00	
CPSS-BC1	*				516,750.03						2,182,098.39					8,169.09		8,170.06						0.97
CPSS-BC2		516,827.72	516,827.68	516,827.72	516,827.10	516,827.72		2,182,071.50	2,182,071.54	2,182,071.50	2,182,071.62	2,182,071.50		8,161.62	8,161.56	8,161.62	8,161.38	8,161.61	8,161.83	-0.06	0.00	-0.24	-0.01	0.21
CPSS-BC3		516,909.07		516,908.46	516,908.51	516,909.07		2,182,034.90		2,182,035.27	2,182,035.10	2,182,034.90		8,113.13		8,113.13	8,112.54	8,113.11	8,113.26		0.00	-0.59	-0.02	0.13
CPSS-BC4		516,983.12		516,982.56	516,982.53	516,983.12		2,181,975.52	2,181,975.87	2,181,975.75	2,181,975.52		8,072.21		8,071.69	8,071.35	8,072.20	8,072.2			-0.52	-0.86	-0.01	-0.01
CPSS-BC5		517,081.70		517,081.22	517,080.99	517,081.70		2,181,947.55	2,181,947.91	2,181,947.41	2,181,947.55		8,031.56		8,031.42	8,031.00	8,031.55	8,031.55			-0.14	-0.56	-0.01	-0.01
CPSS-BC6		517,152.39		517,152.36	517,151.81	517,152.40		2,181,883.81	2,181,883.93	2,181,883.83	2,181,883.81		7,997.15		7,997.43	7,996.04	7,997.15	7,997.18			0.28	-1.11	0.00	0.03
CPSS-BC7		517,225.09		517,224.84	517,224.67	517,225.10		2,181,866.02	2,181,866.63	2,181,866.05	2,181,866.05		7,963.27		7,963.28	7,962.54	7,963.26	7,963.52			0.01	-0.73	-0.01	0.25
CPSS-BC8		517,305.17		517,304.79	517,304.72	517,305.20		2,181,777.09	2,181,777.49	2,181,777.20	2,181,777.10		7,907.35		7,907.10	7,906.65	7,907.36	7,906.93			-0.25	-0.70	0.01	-0.42
CPSS-BC9		517,370.98		517,370.98	517,370.46	517,371.00		2,181,731.41	2,181,731.41	2,181,731.55	2,181,731.40		7,881.650		7,881.04	7,880.53	7,881.65	7,881.66			-0.61	-1.12	0.00	0.01
CPSS-BC10		517,422.49			517,420.77	517,422.50		2,181,630.03			2,181,628.20	2,181,630.00		7,820.10		7,820.10	7,819.25	7,820.09	7,820.12		0.00	-0.85	-0.01	0.02
CPSS-BC11	**	517,504.11		517,504.11		517,504.10		2,181,571.76		2,181,571.76		2,181,571.80		7,785.26		7,785.26		7,785.24	7,785.27		0.00		-0.02	0.01
CPSS-BC11	**				517,556.07						2,181,539.62					7,769.93								
CPSS-BC12		517,577.67			517,575.99	517,577.70		2,181,507.80			2,181,506.01	2,181,507.82		7,763.65		7,763.66	7,763.21	7,763.64	7,763.75		0.01	-0.44	-0.01	0.10
CPSS-BC13		517,653.52			517,653.47	517,653.53		2,181,444.02			2,181,443.66	2,181,444.03		7,745.51		7,745.54	7,744.03	7,745.50	7,745.47		0.03	-1.48	-0.01	-0.04
CPSS-BC14		517,735.14			517,733.21	517,735.15		2,181,375.18			2,181,373.12	2,181,375.20		7,727.34		7,727.41	7,726.92	7,727.33	7,727.32		0.07	-0.42	-0.01	-0.02
CPSS-BC15		517,799.76		517,798.92	517,798.02	517,799.77		2,181,317.63		2,181,317.63	2,181,315.84	2,181,317.64		7,698.37		7,698.14	7,697.85	7,698.36	7,698.37		-0.23	-0.52	-0.01	0.00
CPSS-BC16		517,896.97		517,896.45	517,895.21	517,896.98		2,181,247.92		2,181,248.04	2,181,246.04	2,181,247.93		7,654.490		7,648.42	7,654.07	7,654.50	7,654.42		-6.07	-0.42	0.01	-0.07
CPSS-BC17		517,958.68			517,956.87	517,958.68		2,181,206.38			2,181,204.50	2,181,206.39		7,617.70			7,617.42	7,617.71	7,617.4			-0.28	0.01	-0.30
CPSS-BC18		518,036.90		518,036.30	518,035.38	518,036.90		2,181,125.80		2,181,126.08	2,181,124.22	2,181,125.80		7,591.810		7,591.88	7,591.27	7,591.82	7,591.77		0.07	-0.54	0.01	-0.04
CPSS-BC19		518,080.98		518,080.98	518,079.53	518,080.97		2,181,056.88		2,181,056.88	2,181,055.24	2,181,056.88		7,572.010		7,572.01	7,571.56	7,572.01	7,571.94		0.00	-0.45	0.00	-0.07
CPSS-BC20		518,128.78	518,125.04		518,127.41	518,128.77		2,180,978.42	2,180,977.79		2,180,976.88	2,180,978.42		7,547.74	7,547.66	7,547.81	7,547.36	7,547.75	7,547.67		0.07	-0.38	0.01	-0.07
CPSS-BC21		518,143.08		518,141.74	518,141.90	518,143.08		2,180,825.18		2,180,823.70	2,180,823.61	2,180,825.20		7,491.15		7,490.78	7,490.46	7,491.15	7,491.24		-0.37	-0.69	0.00	0.09
CPSS-BC22		518,208.65	518,208.57	518,207.38	518,207.45	518,208.66		2,180,769.93	2,180,769.97	2,180,768.46	2,180,768.37	2,180,769.94		7,419.08	7,418.91	7,418.56	7,418.59	7,419.09	7,419.03		-0.52	-0.49	0.01	-0.05
CPSS-BC23		518,272.14	518,272.07	518,270.96	518,270.96	518,272.15		2,180,701.87	2,180,701.86	2,180,700.41	2,180,700.27	2,180,701.88		7,361.71	7,361.56	7,361.17	7,361.10	7,361.70	7,361.74		-0.54	-0.61	-0.01	0.03
CPSS-BC24		518,365.85		518,364.65	518,364.71	518,365.84		2,180,637.47		2,180,636.00	2,180,635.91	2,180,637.46		7,314.95		7,314.51	7,314.56	7,314.94	7,315.02		-0.44	-0.39	-0.01	0.07
CPSS-C1		512,938.57						2,177,940.73						6,285.47										
CPSS-C2		513,041.29						2,177,983.90						6,289.67										
CPSS-C3		513,125.82						2,178,036.86						6,303.85										
CPSS-C4		513,191.42						2,178,090.36						6,310.41										

Table 1

Willow Creek Subsidence Monitoring Report

																				Difference in Subsidence				
See	1997	1998	1999	2000	2001	2002	1997	1998	1999	2000	2001	2002	1997	1998	1999	2000	2001	2002	1st Year	2nd Year	3rd Year	4th Year	5th Year	
Point No.																								
CPSS-C5	513,305.34						2,178,126.29						6,327.47											

Table 1
Willow Creek Subsidence Monitoring Report

Point No.	See Note	Northing	Northing	Northing	Northing	Northing	Northing	Easting	Easting	Easting	Easting	Easting	Easting	Elevation	Elevation	Elevation	Elevation	Elevation	Elevation	Difference in Subsidence				
		1997	1998	1999	2000	2001	2002	1997	1998	1999	2000	2001	2002	1997	1998	1999	2000	2001	2002	1st Year	2nd Year	3rd Year	4th Year	5th Year
CPSS-C6		513,367.03						2,178,147.59						6,336.01										
CPSS-C7		513,471.77						2,178,210.70						6,324.86										
CPSS-C8		513,563.30						2,178,239.97						6,333.04										
CPSS-C9		513,629.57						2,178,330.54						6,338.72										
CPSS-C10		513,751.84						2,178,381.02						6,350.18										
CPSS-C11		513,841.80						2,178,346.77						6,349.55										
CPSS-C12		513,941.89						2,178,395.60						6,353.91										
CPSS-C13		514,029.11						2,178,339.10						6,370.76										
CPSS-C14		514,116.46						2,178,463.79						6,387.41										
CPSS-C15		514,248.17						2,178,393.05						6,370.04										
CPSS-C16		514,315.87						2,178,358.85						6,375.13										
CPSS-C17		514,396.37						2,178,293.36						6,396.86										
CPSS-C18		514,490.99						2,178,255.39						6,399.80										
CPSS-C19		514,710.47						2,178,250.48						6,424.25										
CPSS-C20		514,872.11						2,178,280.61						6,420.51										
CPSS-C21		515,100.60						2,178,308.09						6,461.67										
CPSS-C22		515,262.10						2,178,286.25						6,455.81										
CPSS-C23		515,447.90						2,178,306.46						6,475.56										
CPSS-C24		515,643.53						2,178,268.94						6,483.13										
CPSS-C25		515,859.17						2,178,297.78						6,512.82										
CPSS-C26		515,995.70						2,178,423.16						6,519.89										
CPSS-C27		516,205.96						2,178,540.98						6,538.93										
CPSS-C28		516,393.77						2,178,566.14						6,553.64										
CPSS-C29		516,599.37						2,178,651.09						6,580.62										
CPSS-C30		516,651.40						2,178,799.44						6,596.78										
CPSS-C31		516,756.69						2,178,782.88						6,574.39										
CPSS-C32		516,818.45						2,178,778.67						6,579.77										
CPSS-C33		516,878.58						2,178,865.19						6,625.05										
CPSS-C34		516,968.52						2,178,909.54						6,626.10										
CPSS-C35		517,104.90						2,178,915.54						6,626.92										
CPSS-C36		517,183.81						2,178,974.21						6,636.39										
CPSS-C37		517,246.97						2,179,026.80						6,637.36										
CPSS-C38		517,319.03						2,179,088.06						6,659.84					6659.84					0.00
CPSS-C39		517,445.06						2,179,095.08						6,672.66					6672.66					0.00
CPSS-C40		517,556.28						2,179,095.55						6,674.98					6674.99					0.01
CPSS-C41		517,642.35						2,179,152.34						6,675.69					6675.68					-0.01
CPSS-C42		517,713.40						2,179,125.98						6,691.45					6691.45					0.00
CPSS-C43		517,789.04						2,179,188.84						6,700.90					6700.88					-0.02
CPSS-C44		517,888.31						2,179,220.33						6,715.09					6715.09					0.00
CPSS-C45		517,987.19						2,179,250.51						6,726.46					6726.46					0.00
CPSS-C46		518,121.30						2,179,215.39						6,729.80					6729.78					-0.02

Map(s) is kept with this report located in the Public Information Center of our Salt Lake City office.

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

CONTENTS

CHANGE IN OFFICERS

Entity Number	Type	Amount Paid TO PUBLIC SERVICES LAST DATE	License Number	Expiration Date
812494-0143	Corporation - Foreign - Profit	\$10.00		

DO NOT WRITE ON, FOLD, OR STAPLE COUPON.
SUBMIT SEPARATE PAYMENTS FOR MULTIPLE RENEWALS

DO NOT SUBMIT CHANGE FORM OR MISCELLANEOUS DOCUMENTS WITH THIS RENEWAL.

CT CORPORATION SYSTEM
PLATEAU MINING CORPORATION
50 W. BROADWAY, 8TH FLOOR
SALT LAKE CITY, UT 84101-2006

RECEIVED

AUG 20 2002

Utah Div. Of Corp. & Comm. Code

\$10.00

(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@hc.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/cercv/faq>. Forms may be downloaded from our Web site: <http://www.commerce.state.ut.us>

REQUIREMENTS:

Submit changes with processing fee to:

Utah Division of Corporations & Commercial Code
Box 146705
Salt Lake City UT 84114-6705

Date: 08/20/2002

Receipt Number: 853466

Amount Paid: \$780.00



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

RENEWAL

Non-Refundable Processing Fee \$10.00

RECEIVED

Registration Information Change Form (This Form Does Not Renew Your Filing)

AUG 20 2007

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 # 812494-0143, Registration Date 8/17/87, Registered Name Plateau Mining Corporation, Registered Agent (Required Information), Registered Address (Street Address Required), City, State & ZIP UTAH, Purpose of the Business, Address of the Principal Office in this Home State.

Table with columns: POSITION TO CHANGE, NAME, ADDRESS. Includes entries for J. M. DeMichiel and T. J. Lien.

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 [Signature] Title Vice President Date 8/13/02

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

Date: 08/20/2003 Receipt Number: 653466 Amount Paid: 5750.00

APPENDIX D

Mine Maps

As required under R645-302-525-270

CONTENTS

FINAL MINE MAP

MINE EQUIPMENT SEALED IN MINE MAP

APPENDIX E

Other Information

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

CONTENTS

DEMOLITION OF CONVEYORS UG-1 THROUGH SC-4, SEALING OF MINE PORTAL AND FAN SHAFT BACKFILLING

Willow Creek Mine 2002 Reclamation

2002 brought the Willow Creek Mine to a close. The Willow Creek Mine sealed its portals and backfilled its fan shaft. The Mine fan was shut off on November 6; backfilling of the fan shaft commenced on November 20, and the final block seal was constructed in Portal No. 5 on November 12, effectively sealing the mine. Prior to sealing the mine, equipment was removed as directed by the BLM and DOGM.

A final inspection by the BLM and DOGM was conducted on November 5, 2002, to determine if any mining related materials that are to be sealed within the mine could have a potential affect on the ground water quality.

Disassembling of the overland conveyors UG-1, SC-1, SC-2, SC-3, SC-4, and appurtenant structures was also performed in the fall of 2002. The in-mine well drilled into the K-seam was abandoned by a licensed well driller, as were other monitoring wells (B-11 and B-12) that were to be used during the K-seam dewatering program.

The boreholes in Eagle and Dinosaur Canyons were also plugged; however the access roads and pad sites will be reclaimed in 2003. The access road and pad sites to and for exploration drill holes E-14 and E-15 were reclaimed in 2002 as required by the surface landowner.

Backfilling of portal entries is to be done in early 2003. This material will be placed at least 15 to 20 feet in-by the portal entrance, but far enough from the block seals as to not jeopardize their integrity.