

WESTERN STATES MINERALS

J. B. KING MINE
ACT/015/002

STATE DECISION PACKAGE &
PERMIT APPLICATION

UTAH DIVISION OF OIL, GAS AND MINING
STATE DECISION DOCUMENT AND
TECHNICAL ANALYSIS
J. B. KING MINE
ACT/015/002

SEP 19 1990

Oil
GAS
PRICE

Western States Minerals Company
Emery County, Utah
August 13, 1990

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ADMINISTRATIVE OVERVIEW
WESTERN STATES MINERALS CORPORATION
J. B. KING MINE
ACT/015/002

SEP 19 1990

Emery County, Utah
August 13, 1990

Background

Western States Minerals Corporation purchased the J. B. King Mine (formerly known as the Dog Valley Mine) in March 1976. This mine has been in existence since the 1930's and is located approximately 8 miles south of Emery, Utah in the Dog Valley Wash. The mine permanently ceased operation January 15, 1981.

The reclamation of the J. B. King Mine was undertaken in 1985. Phase I bond release became effective May 20, 1986.

The applicant published notice for the five-year permit renewal for four consecutive weeks ending on July 19, 1990. No comments were received.

Recommendation for Approval

Approval for the five-year permit renewal is recommended, based on a review of the Permit Application Package updated through August 1990. The permit renewal term will not exceed the original permit term of five years and will expire on August 13, 1995.

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I D A H O

VICINITY MAP

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W Y O M I N G

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OGDEN

SALT LAKE CITY

VERNAL

PROVO

PRICE

SALINA

GREEN RIVER



MINE

MILFORD

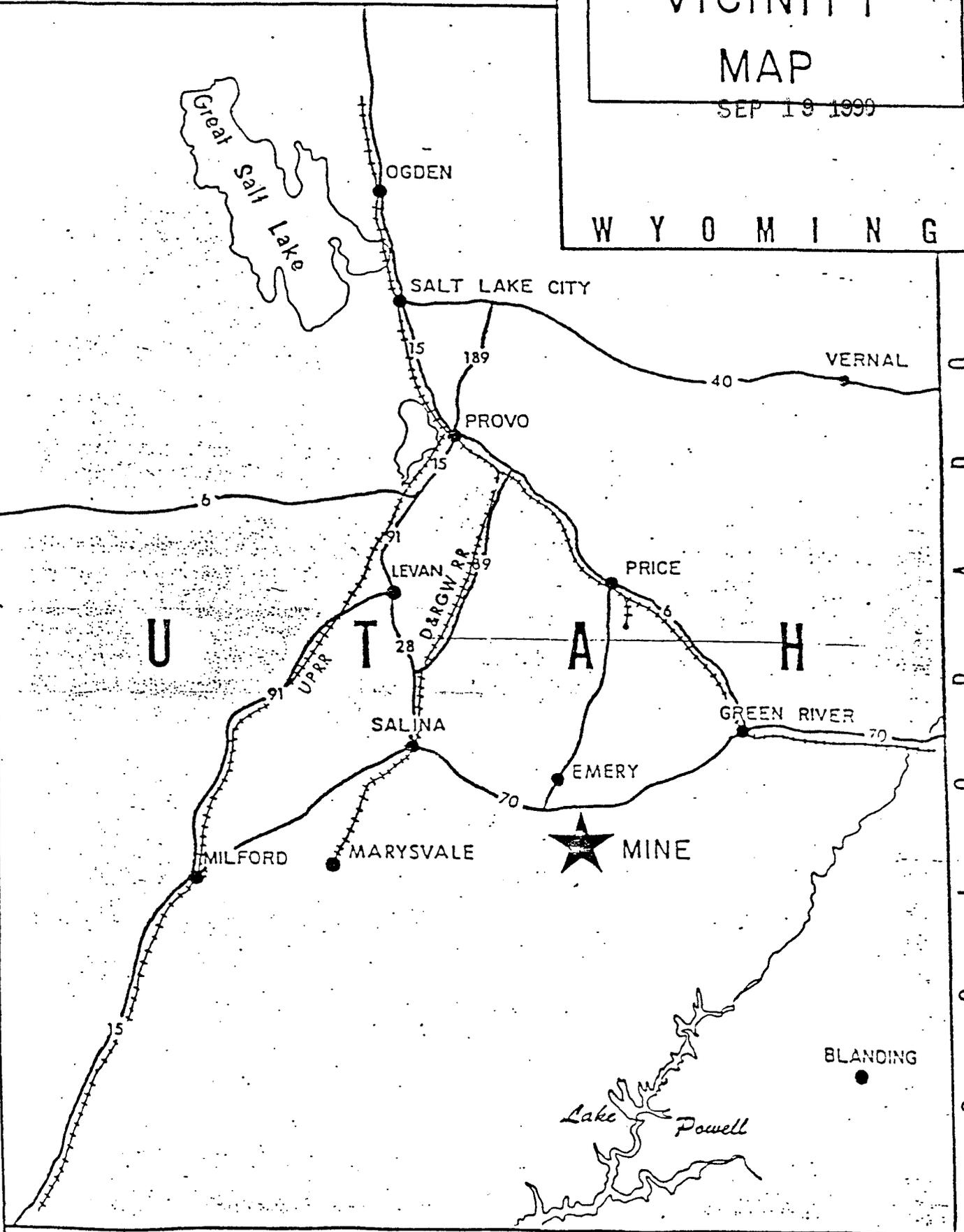
MARYSVALE

BLANDING

Lake Powell

A R I Z O N A

U T A H



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CHRONOLOGY

Western States Minerals Corporation
J. B. King Mine
ACT/015/002

Emery County, Utah
August 13, 1990

- April 27, 1990 Western States Minerals Corporation submits updated text, initiating 5-year permit renewal process.
- June 13, 1990 Division issues Determination of Completeness.
- June 28, 1990 Western States Minerals Corporation initiates public notice for four consecutive weeks.
- July 6, 1990 Western States Minerals Corporation submits "Reclamation Summary".
- July 25, 1990 Division issues Technical Deficiency letter.
- August 3, 1990 Western States Minerals Corporation decides to handle technical deficiencies through three stipulations.
- August 13, 1990 Public comment period concludes with no adverse comments received. Division makes necessary findings. Permit issued.

djh
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MINE PLAN INFORMATION

Mine Name J. B. King Mine State I.D. ACT/015/002
 Operator Western States Minerals Corp. County Emery
 Controlled By Western States Minerals Corporation
 Contact Person(s) Frank Filas Position Environmental Engineer
 Telephone (303) 425-7042
 New/Existing Reclaimed Mining Method (Room and Pillar) Reclamation
 Federal Lease No(s) None
 Legal Description(s) N/A

 State Lease No(s). ML 17687, ML 1003, SL 062712, ML 18783, ML 19231
Leases relinquished February 16, 1988
 Legal Description(s) See attached sheets
 Other Leases (identify) None
 Legal Description(s) N/A

Ownership Data:

Surface Resources (acres)	Existing Permit Area	Proposed Permit Area	Total Life of Mine Area
Federal	480	480	480
State	-0-	-0-	-0-
Private	-0-	-0-	-0-
Other	-0-	-0-	-0-
TOTAL	480	480	480

Coal Ownership (acres):

Surface Resources (acres)	Existing Permit Area	Proposed Permit Area	Total Life of Mine Area
Federal	-0-	-0-	-0-
State	480	480	480
Private	-0-	-0-	-0-
Other	-0-	-0-	-0-
TOTAL	480	480	480

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Coal Resource Data

	Total Reserves	Total Recoverable Reserves
Federal	Tons	N/A
State		
Private		
Other		
TOTAL		

Recoverable Reserve Data

	Name	Thickness	Depth
Seam	Feron I Seam		
Seam			
Seam			
Seam			

Mine Life _____ Reclaimed _____
 Average Annual Production N/A Percent Recovery _____
 Date Projected Annual Rate Reached 1981
 Date Production Begins _____ Date Production Ended 1981
 Reserves Recoverable By: (1) Surface Mining _____
 (2) Underground Mining _____
 Reserves Lost Through Management Decision _____
 Coal Market N/A

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MINE LEASE DESCRIPTIONS

Western States Minerals Corporation
J. B. King Mine
ACT/015/002
Emery County, Utah
August 13, 1990

These leases were relinquished February 16, 1988

State Leases:

ML-17687

Township 23 South, Range 6 East, SLBM
Sec. 32: N1/2 NE1/4, and SE1/4 NE1/4 - 120 acres

ML-1003

Township 23 South, Range 6 East, SLBM
Sec. 32: SW1/4 NE1/4 - 40 acres

SL-062712

Township 23 South, Range 6 East, SLBM
Sec. 32: NW1/4 SE1/4 - 40 acres

ML-18783

Township 23 South, Range 6 East, SLBM
Sec. 32: E1/2 SE1/4 and SW1/4 SE1/4 - 120 acres

ML-19231

Township 23 South, Range 6 East, SLBM
Sec. 32: E1/2 SW1/4 and SW1/4 SW1/4 - 120 acres

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FINDINGS
WESTERN STATES MINERALS CORPORATION
J. B. KING MINE
ACT/015/002
Emery County, Utah
August 13, 1990

1. All procedures for public participation required by the Act, and the approved Utah State Program have been complied with (R614-300-120).
2. The plan and the permit application are accurate and complete and all requirements of the Surface Mining Control and Reclamation Act (the "Act"), and the approved Utah State Program have been complied with (R614-300-133.100).
3. The proposed lands to be included within the permit area are:
 - (a) not included within an area designated unsuitable for underground coal mining operations;
 - (b) not within an area under study for designated lands unsuitable for underground coal mining operations;
 - (c) not on any lands subject to the prohibitions or limitations of 30 CFR 761.11{a} (national parks, etc.), 761.11{f} (public buildings, etc.) and 761.11{g} (cemeteries);
 - (d) within 100 feet of a public road (R614-300-133.220); and
 - (e) not within 300 feet of any occupied dwelling (R614-300-133.220).
4. The applicant has satisfied the requirements for alluvial valley floors and prime farmlands (R614-300-134).
5. The assessment of the probable cumulative impacts of reclamation activities in the general area on the hydrologic balance has been made by the Division. The Reclamation Plan undertaken in the application has been designed to prevent damage to the hydrologic balance in the permit area (R614-300-133.400 and UCA 40-10-11{2}(c)).
6. The reclamation will not affect the continued existence of any threatened or endangered species or result in the destruction or adverse modification of their critical habitats (R614-300-133.500).

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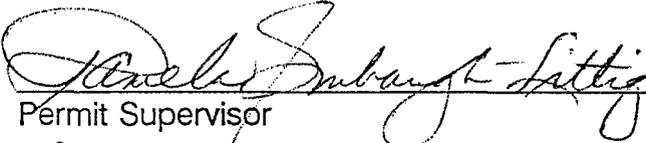
7. The Division's issuance of a permit is in compliance with the National Historic Preservation Act and implementing regulations (36 CFR 800) and (R614-300-133.600).

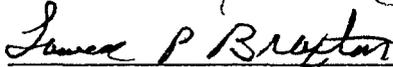
8. The applicant undertook acceptable practices for the reclamation of disturbed lands. These practices have been shown to be effective in the short term; there are no long-term reclamation records utilizing native species in the western United States. Nevertheless, the Division has determined that reclamation, as required by the Act, was feasibly accomplished under the Permit Application Package (PAP) (R614-300-133.710).

9. A 510{c} report has been run on the Applicant Violator System (AVS), which shows that: prior violations of applicable laws and regulations have been corrected; Western States Minerals is not delinquent in payment of fees for the Abandoned Mine Reclamation Fund; and the applicant does not control and has not controlled mining operations with a demonstrated pattern of wilful violations of the Act of such nature, duration, and with such resulting irreparable damage to the environment as to indicate an intent not to comply with the provisions of the Act (UMC 786.19{g}, {h}, {i}, [OSMRE Relatedness Report {dated August 13, 1990}).

10. The original bond was posted by the operator on January 10, 1985, in the amount of \$292,577.00. Phase I bond release was approved on May 20, 1986 and the bond was ridered April 28, 1986, with a current bond in the amount of \$126,078.00.

11. The applicant has the legal right to enter and complete reclamation activities in the permit area via the county road.


Permit Supervisor


Associate Director, Mining


Director

SEP 19 1990

FEDERAL

Permit Number ACT/015/002

August 13, 1990

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

This permit (five-year renewal), ACT/015/002, is issued for the state of Utah by the Utah Division of Oil, Gas and Mining (DOGM) to:

WESTERN STATES MINERALS CORPORATION
4975 Van Gordon Street
Wheat Ridge, Colorado 80033
(303) 425-7042

for the J. B. King Mine. A performance bond is filed with the DOGM in the amount of \$126,078, payable to the state of Utah, Division of Oil, Gas and Mining. DOGM must receive a copy of this permit signed and dated by the permittee.

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

Sec. 2 **PERMIT AREA** - The permittee is authorized to conduct reclamation activities on the following described lands within the permit area at the J.B. King Mine, situated in the state of Utah, Emery County:

Township 23 South, Range 6 East, SLBM

Sec. 32: SE1/4 NW1/4 (21 acres \pm disturbed)

Sec. 33: N1/2 NE1/4 SW1/4 (7 acres \pm disturbed)

Sec. 3 **PERMIT TERM** - This revised permit becomes effective on August 13, 1990, and expires on August 13, 1995.

Sec. 4 **ASSIGNMENT OF PERMIT RIGHTS** - The permit rights may not be transferred, assigned, or sold without the approval of the Director, DOGM. Transfer, assignment, or sale of permit rights must be done in accordance with applicable regulations, including but not limited to 30 CFR 740.13{e} and R614-303-300.

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

- (a) have the rights of entry provided for in 30 CFR 840.12, R614-400-220, 30 CFR 842.13 and R614-400-120.
- (b) be accompanied by private persons for the purpose of conducting an inspection in accordance with R614-400-200 and 30 CFR 842, when the inspection is in response to an alleged violation reported by the private person.

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

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

- (a) accelerated monitoring to determine the nature and extent of noncompliance and the results of the noncompliance;
- (b) immediate representation of measures necessary to comply; and
- (c) warning, as soon as possible after learning of solids, sludge, filter backwash or pollutants in the course of treatment or control of waters or emissions to the air in the manner required by the approved Utah State Program and the Federal Lands Program which prevents violation of any applicable state or federal law.

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

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

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

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

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

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

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

Sec. 14 **APPEALS** - The permittee shall have the right to appeal as provided for under R614-300-200.

Sec. 15 **SPECIAL CONDITIONS** - There are three special conditions associated with this permitting action, as described in Attachment A.

The above conditions (Secs. 1-15) are also imposed upon the permittee's agents and employees. The failure or refusal of any of these persons to comply with these conditions shall be deemed a failure of the permittee to comply with the terms of this permit and the lease. The permittee shall require his agents, contractors, and subcontractors involved in activities concerning this permit to include these conditions in the contracts between and among them. These conditions may be revised or amended, in writing, by the mutual consent of DOGM and the permittee at any time to adjust to

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

THE STATE OF UTAH

By: Dianne K. Nielson

Date: 8/13/90

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



Authorized Representative of
the Permittee

Date: 8/20/90

AT
8/13/90

ATTACHMENT A
STIPULATIONS

Stipulation R614-301-120 and R614-301-140-(JK)

Within 60 days of permit approval, the applicant must submit an accurate and current as-built topographical map of the J. B. King reclaimed mine site suitable for insertion into the Permit Application Package (PAP).

Stipulation R614-301-356.100-(SMW)

Within 60 days of permit approval, the applicant must submit a vegetative sampling plan suitable for insertion into the PAP which partitions the reseeded areas into at least three sample areas with similar slope and aspect. A weight method of averaging and analyzing the data must be included in the plan.

Stipulation R614-301-742.113-(TM)

Within 60 days of permit approval, the applicant must submit a plan to provide long term solutions for phasing out silt fences and incorporating more permanent erosion control structures in their place. The plan must identify the structures that will be used and how they will be designed and implemented. This material must be submitted for insertion into the PAP.

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UMC 784.13, Reclamation Summary

The J.B. King Coal Mine ceased underground mining operations in May, 1981. The portals were permanently sealed, and the facilities and equipment were removed for salvage during the spring and summer of 1985. Reclamation of the 28 acres of surface disturbance was performed in August, September and October of 1985.

The design and management of the reclamation was performed by Coal Systems, Inc. of Salt Lake City, Utah. Demolition, excavation, and grading were performed by Nielson Construction Company of Huntington, Utah. The total cost of the reclamation excluding engineering design, permitting costs, and salvage values was approximately \$260,000 (i.e., \$9,000-\$10,000/acre).

The J.B. King Mine had been operated intermittently since 1930. Essentially all of the surface area had been disturbed prior to the establishment of the Utah Mine Land Reclamation Act in 1975, and Western States Minerals Corporation's subsequent purchase of the mine site in 1976. Consequently, there was a limited supply of stockpiled topsoil at the site and a large portion of the surface area was contaminated by fine coal dust and sediment.

The first phase of the reclamation consisted of removing six inches to four feet of contaminated surface material from the yard, coal stockpile area, and from the slurry/sedimentation ponds. This material was placed around the toe of the existing coarse refuse area utilizing 20 and 30 cubic yard scrapers.

In conjunction with this work, the cement pads and foundations for the shop and mill were broken up and used as part of the portal backfill. Nonorganic trash and debris were buried in a designated landfill at the southeast end of the mine site. All of the mine wells were plugged according to state requirements except WW #1 which was left intact at the request of Utah State Lands and Forestry.

The second phase of reclamation consisted of grading the refuse area to a rolling topography with a maximum slope of 2H/1V. This area was then dry compacted with a drum roller mounted on a D-6 Dozer. The seven mine portals were backfilled by dozing two foot lifts of material from the portal bench area into and against the portals. Each lift was compacted prior to the placement of the next lift.

The third phase of reclamation consisted of the excavation, haulage and placement of four feet of topsoil and substitute topsoil on the regraded refuse pile and the coal stockpile pad. The topsoil stockpile and the existing sediment control berm were utilized to supply a small portion of the required soil material. The majority of the soil material was borrowed from what is now the main diversion channel which extends from the portal area at the southeast corner of the site to the northwest corner of the mine site. Concurrently with this work, a new sediment pond, sized to contain the 10 year, 24 hour storm event was constructed at the northwest end of the mine site. A D-9 and D-8 Dozer, three large scrapers, and a water truck were utilized during this phase of the project.

The fourth phase of reclamation consisted of:

1. Shaping the main channel,
2. installing check dams in the feeder ditch,
3. building a sedimentation control berm and ditch along the northern perimeter of the refuse area,
4. ripping the soil cover to a depth of 18 inches,
5. and seeding the entire 28 acre site.

Approximately five acres of the site were drill seeded and the remainder was broadcast seeded at double the drill seed rate. The seeded area was also fertilized and mulched according to the schedule below. Equipment used during this phase of the reclamation included a D-9 Dozer w/3 prong ripper, a small backhoe, a D-6 Dozer, a 70 hp farm tractor with disc, a drill seeder, a broadcast seeder/fertilizer, and a 30 hp mulcher. The seeding was completed during early October, 1985.

Fall 1985 Seeding
J.B. King Mine

I. SEED MIX

A. <u>Grasses</u>	<u>%</u>
Western Wheatgrass	10.1
Thickspike Wheatgrass	4.5
Streambank Wheatgrass	4.5
Beardless Wheatgrass	4.5
Blue Grama	6.8
Galleta	4.5
Indian Ricegrass	9.1
Needle and Thread	4.5
Big Bluegrass	2.3
B. <u>Forbs</u>	
Gooseberry Globemallow	1.1
Yellow Sweet Clover	6.8
Palmer Penstemon	1.1

C.	<u>Shrubs</u>	<u>‡</u>
	Fringed Sage	1.1
	Fourwing Saltbush	4.5
	Shadscale	4.5
	Winterfat	4.5
	Rubber Rabbitbrush	1.1
D.	<u>Inert</u>	21.6
E.	<u>Crop</u>	2.2
F.	<u>Weed</u>	0.7
		<u>100.0</u>

G. Prairie Sage: 1.2# applied at rate of 0.1# PLS/A over 12 acres (primarily along borrow pit ditch banks).

II. RATE OF APPLICATION

A. 5 ACRES @ 20#/ACRE; drill seeding was attempted but discontinued due to un-even, rocky surface in many areas and because range in size of seeds was too great which prevented uniform feeding of the mix.

B. 23 ACRES @ 39#/ACRE; the remaining acreage was seeded using a broadcast seeder at a doubled application rate.

III. SEED SUPPLIER - Maple Leaf Industries, Inc., Ephraim, Utah

IV. PLANTING TECHNIQUE - Approximately 5 acres/day were seeded, mulched and crimped. The seed was broadcast during the calm morning hours; mulching and crimping the 5 acres required the rest of the day.

V. MULCHING - A barley straw mulch was blown over the entire seeded area at a rate of 3000#/A. The straw was inspected by a District Agricultural Inspector and determined to be reasonably weed free.

VI. CRIMPING - The straw was crimped into the soil using a double-gang farm disc with the gangs adjusted to prevent furrowing by the discs.

VII. FERTILIZER - Fertilizer was applied prior to planting at a rate of 200#/A (150# Urea, 50# Double superphosphate).

A revegetation test plot was installed during reclamation at the request of the Division of Oil, Gas and Mining. This plot covers approximately one acre and is located at the top of the reclaimed refuse area. This test plot incorporates varying depths of topsoil (0 to 4 feet), and three different fertilizer application rates.

The fifth and final phase of reclamation was performed during the first week of April, 1986 and consisted of the planting of 5,000 seedlings and the construction of 2700 feet of perimeter fence. This work plus the previous fall seeding was performed by Coal Systems, Inc.

Spring 1986 Seedlings Mix
J.B. King Mine

Item	Quantity
Fringed Sage	500
Fourwing Saltbrush	1,450
Shadescale	1,450
Gardner Saltbush	1,500
Mormon Tea	100 - (total amount available)
Total	5,000

Post reclamation monitoring was conducted on a monthly basis during the first year after reclamation was completed and quarterly thereafter. The sedimentation pond has never overflowed even during the relatively wet period from July, 1986 through November, 1986. There has been no contribution of suspended solids to runoff outside of the reclaimed area. Post reclamation concerns have consisted primarily of erosion, vegetation success, and tension cracks associated with subsidence. Each of these concerns is discussed in more detail below:

Erosion

The main diversion channel and the feeder ditch were originally designed to be unarmored with gently sloping revegetated banks. The design did not properly take into account the intensity of the rainfall events nor the relatively low vegetative cover common to this region. This resulted in excessive erosion of the feeder channel and the upper reaches of the main channel.

In May, 1987, rip rap was installed in the eroded channel areas. Unfortunately, the contractor did not install the rip rap correctly which resulted in continued erosion problems. In June, 1988 the channels were recontoured and the rip rap was installed properly. The check dams in the feeder ditch were also reinstalled. The channels have remained reasonably intact and functional since that time.

A second area of erosion concern has been the west and southwest facing slopes of the reclaimed refuse area. Contour furrows were constructed along this slope during reclamation. It was believed that these furrows in combination with straw bales and silt fences would control erosion until vegetation had been established. In the late summer of 1986, the contour furrows were filled with sediment and breached after the occurrence of several major storm events. This resulted in rilling along most of the slope area. The rilling has continued intermittently since that time and is controlled through the use of silt fencing and the placement of rock anchored straw in the larger rills.

Vegetation

The west and southwest facing slopes of the reclaimed refuse area has been the most difficult area of the site to revegetate. This is due to a combination of the southern exposure, unauthorized cattle grazing, and low precipitation from 1988-1990. In 1989, the perimeter fence was completely rebuilt and a road was relocated outside of the reclaimed area in order to limit cattle trespass. It is believed that hand seeding of the rill areas during the fall plus increased precipitation will gradually increase the vegetative cover in this area.

Some of the areas which were traversed by heavy equipment during the channel reconstruction also have relatively low vegetative cover. These areas which comprise approximately two acres were ripped, reseeded and mulched in mid October, 1989.

Tension Cracks

In May, 1983 an area of subsidence was discovered above the 2nd East Panel. This was the only area of the mine which was completely pillared out. Additional subsidence has not occurred since 1983 as evidenced by the annual subsidence surveys. A series of tension cracks exist along the perimeter of the subsided area. These cracks have measured 6 to 12 inches in width and several hundred feet in length.

Remedial work to close the cracks was first conducted in 1984 and consisted of jamming small timbers into the cracks and backfilling with soil. Additional soil backfill was added in April, 1986. The area remained stable from that time until July, 1988 when a plus 5 magnitude earthquake occurred in the immediate area. This resulted in the redistribution of stresses and the reopening of the tension cracks.

In order to eliminate the possibility of the future reappearance of the cracks, it was decided to excavate down to bedrock and then backfill the cracks with a fine grained sand. This was performed in the fall of 1988, and again in the spring of 1990 after additional settlement was noted. Some additional settlement is expected in the future and will be filled in with sand as needed.

SEP 19 1990

January 15, 1986

TO: Coal File

FROM: *gh* John J. Whitehead, Permit Supervisor/Reclamation
Hydrologist

RE: Satisfactory Responses to Stipulations, Western States
Minerals Corporation, J. B. King Mine, INA/015/002, #2
and #4, Emery County, Utah

The three stipulations contained in the J. B. King Mine permanent program permit have been adequately addressed by the operator as noted below:

Stipulation 817.53-(1)-RVS

1. Within 180 days of permit approval, the applicant must submit to the Division written documentation of the transfer of water well #1 to the surface landowner. In the event that the well is not transferred, the applicant must plug and abandon the well in accordance with the approved plans in the MRP.

Applicant's Response

The permittee transmitted to the Division a letter dated December 12, 1985 which contained a copy of a Quit Claim Deed to the Department of Natural Resources, Division of State Lands & Forestry (DSLRF) for the subject water well #1. This adequately addressed this stipulation.

Stipulation 817.103-(1)-EH

1. The applicant shall, within 30 days of permit approval, submit a revised Map 4050-5-14 depicting the test plot area.

Applicant's Response

Permittee transmitted revised Map 4050-5-14 to the Division with a letter dated September 9, 1985. This stipulation is thus adequately addressed.

SEP 19 1990

Stipulation 817.121-.126-(1)-RVS

1. The applicant must, within 90 days of permit approval, commit to inspecting subsidence barriers during the annual subsidence monitoring program. Barriers or fencing shall remain in place until the Division determines (prior to bond release) that surface tension cracks no longer pose a hazard to cattle grazing.

Applicant's Response

In a letter dated October 25, 1985, the permittee committed to the monitoring requirement stipulation. This stipulation is thus adequately addressed.

btb
cc: Pam Grubaugh-Littig
Joe Helfrich
9291R-18 & 19

ATTACHMENT A
SPECIAL CONDITIONS

SEP 19 1990

Western States Minerals Corporation
J. B. King Mine
INA/015/002, Emery County, Utah

August 5, 1985

Stipulation 817.53-(1)-RVS

1. Within 180 days of permit approval, the applicant must submit to the Division written documentation of the transfer of water well #1 to the surface landowner. In the event that the well is not transferred, the applicant must plug and abandon the well in accordance with the approved plans in the MRP.

Stipulation 817.103-(1)-EH

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Stipulation 817.121-.126-(1)-RVS

1. The applicant must, within 90 days of permit approval, commit to inspecting subsidence barriers during the annual subsidence monitoring program. Barriers or fencing shall remain in place until the Division determines (prior to bond release) that surface tension cracks no longer pose a hazard to cattle grazing.

0422R

SEP 19 1990

FINAL TECHNICAL ANALYSIS

Western States Minerals Corporation
J. B. King Mine
INA/015/002, Emery County, Utah

August 9, 1985

UMC 817.11 Signs and Markers - PGL

Existing Environment and Applicant's Proposal

Volume 2 of the Mining and Reclamation Plan (MRP), Section 817.11, delineates the signs and markers posted by the applicant.

Compliance

The applicant has posted all signs required by law, including portal area, refuse disposal, topsoil storage, mine entrance, underground and at the preparation plant. The applicant will maintain the markers during the bond liability period. Perimeter markers will display the current business address and regulatory number during the reclamation activities (Volume 2, 817.11 section).

Applicant complies with this section.

Stipulations

None.

UMC 817.13-.15 Casing and Sealing of Exposed Underground Openings -
RVS

Existing Environment and Applicant's Proposal

The applicant has committed to permanently closing all portal entries by installing concrete block seals a minimum of 25 feet in by the entryway (MRP, Volume 2, Section 817.13). Seals will be recessed 16 inches into the rib and 12 inches into floor. A pilaster will be located in the center of the seal and a two inch diameter check pipe will be installed through each seal. Check pipes will be capped on the external side of the seal (Drawing 4050-5-21). The area between the entryway and seal will be backfilled and compacted with sand and clay material, graded and revegetated.

Exploration boreholes have been cemented with three foot surface plugs. Six boreholes completed and developed for the purpose of accessing ground water resources remain open (Drawing 4050-5-1). The applicant states that these six boreholes will be completely plugged according to Utah Department of Natural Resources regulations during reclamation (MRP, Volume 2, Section 817.15).

Compliance

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

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

The applicant is in compliance with this section.

Stipulations

None.

UMC 817.21-.25 Topsoil - EHExisting Environment and Applicant's Proposal

The J. B. King Mine site is located in southern Castle Valley between the Fish Lake Mountains on the west and the San Rafael Swell on the east. Elevation of the permit area ranges from 5,800 feet to 6,600 feet above sea level.

Precipitation ranges from 8 to 12 inches annually with the frost-free days and mean annual air temperature ranging from 110 to 130 days and 50° to 60°, respectively.

Soils in the area have formed from the weathering of sandstone and shale under desert conditions giving rise to vegetation consisting mainly of pinyon-juniper and shadscale-snakeweed shrubland. Five soil map units have been identified within the permit area: Castle Valley extremely rocky very fine sandy loam; mine dump; Ravola loam; rock land; and, shaley colluvial land (Table 5).

The Castle Valley soil has been classified as a loamy mixed, mesic, Lithic Xerollic Haplargid, and the Ravola as a fine silty, mixed, calcareous mesic typic Torrifuvent. Erosion potential ranges from slight for the Castle Valley soil to high for the Ravola soil (Soil Survey, 783.19, MRP).

The initial disturbance at the J. B. King Mine site occurred prior to Public Law 95-87. Consequently, very little topsoil was salvaged for use at the time of final reclamation. A total of approximately 29 acres of surface disturbance has occurred with only 4,000 yd³ of topsoil salvaged and stockpiled.

A large borrow area along with a portion of the in-place soil, have been identified as a source of topsoil substitute material (Drawing 4050-4-13-R). Samples of the topsoil substitute have been taken at locations indicated on Drawing 4050-4-13-R. Analyses and interpretations of these samples have been presented in Section 784.13 of the MRP. At the time of final reclamation, these borrow pits along with in-place soil material will be used as a source of seedbed material.

During final reclamation, selective removal and placement of the contaminated soils and high-clay content soils found in sample pits C, D, E and G is planned. These materials will be used as initial filler for the slurry ponds (page 2, 817.22, MRP). Both ponds are approximately eight feet deep. Therefore, there is room for at least four feet of material to fill these ponds before the four feet of uncontaminated topsoil substitute material is placed on top. This plan provides a means of handling approximately 1,900 cubic yards of contaminated material (page 2, 817.22, MRP).

A plan similar to that outlined above will be used for contaminated soils found in the sedimentation pond. Soils dug from the sedimentation pond which appear to be contaminated with coal or high in clay content will be selectively dug and placed in shallow areas around the base of the refuse pile. These materials will then be covered with four feet of uncontaminated substitute topsoil material (page 3, 817.22, MRP).

Samples of the site facilities area show that removal of the coal dust contaminated surface to depths of up to one foot and relocation of this material to the refuse pile area will leave a clean surface which can then be scarified and prepared for planting (page 13, 784.13, MRP).

A "worst case" toxic analysis of the refuse material has been assumed. According to 817.85(d), this then dictates the placement of a minimum of four feet of inert material covered. The refuse material will first be compacted in the pile to attain a 90 percent dry density according to AASHTO T99-79 (page 13, 784.13, MRP). To cover the coal refuse pile, exposed coal seam and slurry ponds with four feet of cover material will require approximately 84,000 yd³. The portals will be covered with topsoil substitute from the portal bench borrow area, approximately 20,000 yd³ is available (page 1, 784.13, MRP). The sediment pond embankment (approximately 1,500 yd³) will be used as fill for the slurry pond areas. The coal refuse cover material will consist of 7,000 yd³ from the dike bank surrounding the refuse pile and 57,000 yd³ from the borrow pit area. The total volume of topsoil substitute material available is 87,500 yd³. Including the 4,000 yd³ of stockpiled topsoil, the plan allows for a surplus of 7,500 yd³ (page 1, 784.13, MRP).

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After the disturbed areas have been backfilled and graded, they will be disked to lessen soil compaction and seeded in accordance with Section 817.111-.117, MRP.

Compliance

The applicant has provided the required information on the source, chemical analysis, volume and methods of handling of topsoil and topsoil substitute.

The applicant is in compliance with this section.

Stipulations

None.

UMC 817.41 Hydrologic Balance: General Requirements - RVS and TM

Existing Environment and Applicant's Proposal

Ground Water - RVS

The applicant describes shallow alluvial and colluvial aquifers and Ferron Sandstone aquifers as occurring within and adjacent to the permit area (MRP, Volume 1, Section 783.15). Recharge is attributed to direct infiltration of precipitation along streams and areas of outcropping sandstone.

Six boreholes were completed and developed for the purpose of accessing ground-water resources (Drawing 4050-5-1). An aquifer located approximately 200 feet below the Ferron "I" seam was identified (MRP, Volume 2, Section 783.13) and utilized by the applicant. Exploration boreholes drilled from above the workings did not encounter ground water (MRP, Volume 1, Section 783.15).

No springs are located within or adjacent to the permit area (MRP, Volume 1, Section 783.15) and mining did not encounter sufficient ground water to initiate discharge (MRP, Volume 2, Section 817.50).

Compliance

Underground mining activities were planned and conducted to minimize changes to the ground-water balance both within and adjacent to the mine plan area. Changes in ground-water quality and quantity and depth to ground water were minimized so that the postmining land use would not be affected.

The applicant is in compliance with this section.

Stipulations

None.

Surface Water - TM

The applicant proposes to use a combination of a borrow pit ditch and sediment pond to concentrate and collect disturbed area runoff during the reclamation phase. Since the mining area is planned for reclamation only, the applicant has committed to the necessary sediment controls (MRP, Sections 817.42, 817.52, 817.56). Temporary and permanent sediment controls (i.e., straw bales, contour furrows, riprap, vegetation) have been committed to be used during the reclamation phase to provide adequate protection from erosion (see UMC 817.56, pages 1 and 2 and UMC 817.45, pages 1-4).

Compliance

Underground mining activities were planned and conducted to minimize changes to the surface water balance both within and adjacent to the mine plan area. Reclamation practices are planned to prevent changes to the hydrologic balance and minimize water pollution.

Stipulations

None.

UMC 817.42 Hydrologic Balance: Water Quality Standards and Effluent Limitations - TMExisting Environment and Applicant's Proposal

The existing sedimentation pond will be removed when encountered during the excavation of the substitute topsoil borrow pit. Since this action will eliminate sediment control during reclamation, a permanent sedimentation pond will be installed. It is proposed to use the north end of the borrow pit to act as a natural dam. The pond would be approximately 10 feet deep and be excavated in conjunction with the first removal of backfill. The pond would extend some 200 feet southeast at that depth. This pond will serve to capture all disturbed area runoff during the reclamation activities.

The natural dam will be retained to provide additional sediment control.

Compliance

The applicant meets the requirements of this regulation by providing adequate treatment of disturbed area waters. The location of the natural dam and subsequent reclaimed stream channel allows the applicant to capture all disturbed waters and provide adequate treatment. The plan meets the requirements of UMC 817.42.

Stipulations

None.

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

Existing Environment and Applicant's Proposal

The borrow pit ditch design used to route undisturbed and disturbed flows was designed using the worse case scenario for a 100-year reoccurrence storm event. This design criteria was used to insure that adequate drainage is provided to accommodate the intense nature of the thunderstorm runoff in the area. The actual borrow pit ditch design is outlined in UMC 817.56.

The sediment control measures to be taken are discussed in the sections of the MRP labeled " 784.16" and "817.45."

Compliance

The applicant is in compliance with this section. Both practical onsite considerations and theoretical calculations to support the requirements of the regulations have been incorporated.

Stipulations

None.

UMC 817.44 Hydrologic Balance: Stream Channel Diversions - TM

Existing Environment and Applicant's Proposal

The applicant proposes to establish a borrow pit drainage ditch and provide, as near as possible, the meandering shape and environmentally acceptable configuration of a naturally occurring stream. The gradient will be altered to form a profile that approximates a natural stream channel. Energy dissipators consisting of boulders and rock from the immediate area will be arranged to suggest natural placement. The side slopes of this

ditch and the entire area through which it passes will be revegetated in an attempt to create an approximation of the original topography and environment. Inlet ditches into the main borrow pit ditch will be installed where flow from the watershed is concentrated. A cross section and ditch profile have been provided on Figure 1 (Section 817.56, MRP, Volume 2).

Compliance

The applicant meets or exceeds the requirements spelled out under UMC 817.44. The requirements of (d)(1), (2) and (3) have been satisfied by using a design which will incorporate erosion protection for the reclaimed areas and also provides a means of safely routing flows through the reclaimed area in a natural meandering shape of an environmentally acceptable gradient.

Stipulations

None.

UMC 817.45 Hydrologic Balance: Sediment Control Measures - TM

Existing Environment and Applicant's Proposal

The applicant will complete the backfilling, grading and placement of topsoil during the initial reclamation phase and incorporate sediment control measures to ensure that no additional contributions of suspended sediments leave the site. The combined use of alternative sediment controls (i.e., contour furrowing, boulders and riprap), and a sediment pond will provide the necessary sediment control. The pond will allow any sediment transported by overland flow during reclamation processes to settle out without going off-site. The alternative sediment controls will help protect the borrow pit diversion ditch and will be constructed in the manner pointed out in the MRP under "817.45."

Compliance

The applicant meets the requirements of this regulation and agrees to prevent additional contributions of sediment to stream flow or to runoff outside the permit area by using the best technology currently available. The applicant will also implement alternative sediment controls in order to retain additional sediment within disturbed areas and prevent additional erosion of reclaimed areas.

Stipulations

None.

UMC 817.46 Hydrologic Balance: Sedimentation Ponds - TMExisting Environment and Applicant's Proposal

Since the existing sedimentation pond is to be removed during the backfill reclamation phase of the MRP, a substitute pond has been proposed to serve the sedimentation control requirements (see Sections 784.16 and 817.42, MRP).

Upon completion of the restoration program, a permanent drainage ditch designed to control erosion and sediment discharge from the area will be constructed as described in "784.16" and "817.45" of the MRP. Upon removal of the temporary sedimentation pond and connection of the drainage ditch to the natural drainage pattern of the area, the affected area of the pond will be regraded and revegetated as part of the final phase of the reclamation activities.

Compliance

The design of the permanent sedimentation pond is discussed under Section 784.16, Volume 2, MRP. The pond is capable of holding runoff from the 10-year, 24-hour storm event for the 71.2 acres of disturbed and undisturbed area in addition to 4,550 yds³ of sediment. The pond will be excavated into natural undisturbed material. The pond is designed to provide a minimum of one foot of embankment above the water surface. The actual depth of the pond will be 10.5 feet. The width of the embankment will be 20 feet versus 9.1 feet required by the regulations. This structure is, therefore, adequately designed (Volume 2, Section 784.16, MRP).

The applicant meets the requirements of this regulation.

Stipulations

None.

UMC 817.47 Discharge Structures - TMExisting Environment and Applicant's Proposal

The spillway associated with the sediment pond is designed to pass the 100-year, 24-hour event. The spillway will be lined with riprap (one to six inch average diameter) and large boulders (1.5 foot average diameter) to control velocity and erosion. It will be constructed at the lower northwest end of the sedimentation pond. The spillway will provide a means whereby runoff volumes exceeding the capacity of the sedimentation pond can be channeled to the natural drainage (Section 784.16, MRP, Volume 2).

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Compliance

The applicant has oversized the spillway with the intent that it will meet the requirements required by the Division for permanent impoundments. The applicant meets the requirements of this regulation.

Stipulations

None.

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

Existing Environment and Applicant's Proposal

At the present time, no mining is being carried on. The main area of potential toxic material is the coal refuse pile. The applicant has committed to place all coal fines and contaminated material in the refuse pile and covering the entire 11 acres with four feet of nontoxic material from the borrow pits. The borrow material has been determined to be suitable as a plant growth medium. See Section 817.21-.25 in the MRP for details.

Compliance

The applicant's commitment to cover the 11 acres of refuse and coal fine material with four feet of nontoxic material is in compliance with this section. A one acre test plot area has been approved by the Division for the refuse area. (See UMC 817.103 for additional details.)

Stipulations

None.

UMC 817.49 Permanent and Temporary Impoundments - TM

Existing Environment and Applicant's Proposal

The applicant proposes a sediment pond structure to capture all runoff from the disturbed and undisturbed watershed areas above the mine site. Specific details on the design of this structure can be found in Section 784.16, Volume 2, MRP. This pond will serve as a catch basin for sediment control of the entire disturbed area during reclamation activities.

The applicant has proposed retaining the pond as a permanent impoundment for continuing sediment control in future years.

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Compliance

The applicant meets all the requirements for permanent and temporary impoundments found under UMC 817.49. The design requirements for excavated ponds are contained in U. S. Soil Conservation Service Practice Standard 378, "Ponds," October 1978. The applicant has committed to construct side slopes not steeper than 2v:1h that will be stable. The inlet is protected against erosion. The excavated material taken from the pond will be used to reclaim the mine pad area. The impoundment is considered suitable for the proposed postmining land use.

The question of water rights for the impounded waters and the liability for the impoundment after bond release have been addressed. The applicant has contacted the Division of Water Rights, Office of Dam Safety, to address leaving the structure in place following reclamation. The applicant has also contacted the Division of Water Rights to secure water rights and was informed that for ponds constructed as erosion control structures, no formal water rights were required (MRP, UMC 817.49, page 1).

The applicant has met the requirements of this regulation.

Stipulations

None.

UMC 817.50 Hydrologic Balance: Underground Mine Entry and Access Discharges - RVS

Existing Environment and Applicant's Proposal

Rocks within the permit and adjacent area dip approximately 2.5 degrees to the west. Accordingly, the mine workings dip in a similar fashion and portals are approximately 100 feet lower than the easternmost mined area (Drawing 4050-5-5-R).

The applicant states that water was not encountered during mining or in exploration boreholes located above the workings (MRP, Volume 2, Section 817.50). One aquifer, approximately 200 feet below the Ferron "I" seam, has been identified in the mine plan and adjacent area (MRP, Volume 1, Section 783.13).

The applicant proposes to monitor any unplanned portal discharges in accordance with the water quality standards required by UMC 817.42 and other appropriate regulations. If necessary, water will be treated until bond release (MRP, Volume 2, Section 817.50).

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Compliance

Portals were designed and constructed to control gravity discharge of water from the mine. Although inflow has not occurred in the past, the applicant has provided an adequate mitigation plan for potential mine inflow and unplanned portal discharge.

The applicant is in compliance with this section.

Stipulations

None.

UMC 817.52 Hydrologic Balance: Surface and Ground Water Monitoring
- RVS and TM

Existing Environment and Applicant's Proposal

Ground Water - RVS

Permanent cessation of mining excludes operational ground-water monitoring. An assessment of UMC 817.52 is not applicable for ground-water monitoring.

Surface Water - TM

The applicant commits to the measurement of flows and the gathering of water samples for evaluation of postmining water quality during runoff from spring snowmelt or major rainfall events whenever possible during the bonding period following cessation of reclamation activities.

The field and chemical parameters recommended by the Division for water monitoring have been committed to by the operator (Section 817.52, Volume 2, MRP).

The surface monitoring points are delineated on Drawing 4050-4-13R (DOC) (Section 817.52, Volume 2, MRP).

Compliance

The applicant has adopted the measures in the Division's Surface Water Monitoring Guidelines and has committed to monitor surface water runoff for the extent of the bonding period. The applicant has met the requirements of this regulation.

Stipulations

None.

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UMC 817.53 Hydrologic Balance: Transfer of Wells - RVS

Existing Environment and Applicant's Proposal

The applicant drilled and developed six boreholes to access ground-water resources within and adjacent to the permit area (Drawing 4050-5-1). Two of the wells are located within the permit area. One will be permanently abandoned and plugged according to UMC 817.15 (MRP, Volume 2, Section 817.53). Water well #1 will be retained based on the surface landowner request (letter from the Division of State Lands & Forestry [DSL&F], July 29, 1985).

The DSL&F will initiate the procedure to transfer the existing water right claim 94-295 from Western States Minerals to the DSL&F.

Compliance

The surface owner of the lands (State of Utah, DSL&F) has submitted a written request to the Division of Oil, Gas and Mining (DOGM) for well transfer approval. The applicant has yet to finalize written documentation of the transfer of well #1 to the surface landowner at the time of this TA. The applicant will be in compliance with this regulation when the following stipulation is met.

Stipulation 817.53-(1)-RVS

1. Within 180 days of permit approval, the applicant must submit to the Division written documentation of the transfer of water well #1 to the surface landowner. In the event that the well is not transferred, the applicant must plug and abandon the well in accordance with the approved plans in the MRP.

UMC 817.54 Hydrologic Balance: Water Rights and Replacement - RVS

Existing Environment and Applicant's Proposal

The applicant states that the water rights associated with mining consist of applications for and rights to use water from six boreholes drilled to access ground-water resources (MRP, Volume 2, Section 817.54). The applicant commits to replacing water supplies that have been adversely affected by mining activities.

Compliance

The applicant's proposal for mitigating adversely impacted water supplies adequately addresses the requirements of UMC 817.54.

The applicant is in compliance with this section.

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Stipulations

None.

UMC 817.55 Hydrologic Balance: Discharge of Water Into an
Underground Mine - RVS

Permanent cessation of mining and attendant permanent sealing of exposed underground openings excludes the discharge of water into an underground mine. An assessment of UMC 817.55 is not applicable.

UMC 817.56 Postmining Rehabilitation of Sedimentation Ponds,
Diversions, Impoundments and Treatment Facilities - TM

Existing Environment and Applicant's Proposal

The applicant has noted that the sediment pond will be retained after reclamation as a permanent impoundment (MRP, 817.42 and 817.56). The details of this are discussed in Section UMC 817.49 of this Technical Analysis.

Compliance

The applicant has made a commitment to renovate at bond release the permanent impoundment to meet criteria in the detailed design plan.

The applicant is in compliance with this regulation.

Stipulations

None.

UMC 817.57 Hydrologic Balance: Stream Buffer Zone - TM

Existing Environment and Applicant's Proposal

No perennial or intermittent streams occur within or near the permit area. Therefore, mining activities will have no effect upon this type of water system (Section 817.57, Volume 2, MRP).

Compliance

The applicant complies with the requirements of this regulation.

Stipulations

None.

UMC 817.59 Coal Recovery - RVSExisting Environment and Applicant's Proposal

Mining incorporated room and pillar methods with secondary pillaring to extract the Ferron "I" seam (MRP, Volume 1, Section 784.11). The underlying Ferron "F" seam was not accessed by the applicant. Approximately 160 feet of interburden separate the Ferron "I" seam and Ferron "F" seam (Volume 1, Section 784.11).

Compliance

The method of room and pillar mining with secondary pillaring complies with maximum utilization and conservation of the coal resource. The mining sequence employed by the applicant will allow additional development of the Ferron "F" seam.

Stipulations

None.

UMC 817.61-.68 Use of Explosives - PGLExisting Environment and Applicant's Proposal

The applicant will not use explosives during the reclamation phase. During operations, the continuous miner eliminated the need for explosives. The cap and powder magazines will be removed during reclamation (Volume 2, 817.61-.68 section).

Compliance

Applicant complies with this section.

Stipulations

None.

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

Since no mining will take place, these sections are not applicable.

UMC 817.81-.88 Coal Processing Waste Banks: General Requirements - PGLExisting Environment and Applicant's Proposal

The coal processing waste banks were designed and constructed under the direction of a registered professional engineer. Refuse will be covered by a minimum of four (4) feet of nontoxic and

noncombustible material during final reclamation. After final grading, topsoil will be evenly distributed and planted with an appropriate seed mixture. The long-term static safety factor was determined to be greater than 1.5. No coal processing waste was returned to underground workings (MRP, Section 817.81-.88).

Compliance

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

Stipulations

None.

UMC 817.89 Disposal of Noncoal Wastes - PGL

Existing Environment and Applicant's Proposal

The noncoal waste disposal area is designated on Drawing 4050-5-14 and described in Volume 2, UMC 817.89. The plan notes care will be taken in the deposition of materials such as lubricants, flammable liquids, etc. During reclamation, this disposal site will be covered with four feet of soil cover and revegetated per the reclamation plan.

Compliance

This site is without springs or watercourses and is not located within a drainage channel.

The applicant's proposal to cover the disposal area with four feet of soil material and revegetate the area complies with this section.

Stipulations

None.

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

There are no dams or embankments constructed of coal processing waste at the J. B. King, therefore, this section is not applicable.

UMC 817.95 Air Resources Protection - PGL

Existing Environment and Applicant's Proposal

The applicant indicates that a water truck will be used for dust suppression during the reclamation period. Water spraying will occur as often as needed.

Compliance

The applicant has committed to adequate dust suppression techniques during the reclamation phase. The applicant is in compliance with this section.

Stipulations

None.

UMC 817.97 Fish and Wildlife - SCExisting Environment and Applicant's Proposal

The J. B. King Mine site is located within the San Rafael Swell-San Rafael Desert biogeographic area as described by the Utah Division of Wildlife Resources (UDWR) (Section 817.97, Appendix A). Economically important and high interest species found in the area include mule deer, mountain lion, golden eagle, cottontail rabbit, bobcat and a variety of raptors.

The endangered northern bald eagle and the American peregrine falcon are known to migrate to the region, although no active eyries have been identified. Historical range of the endangered black-footed ferret and Utah prairie dog have been included in the region; however, recent studies revealed no sitings of potential habitat in the area. No threatened or endangered fish, reptiles or amphibians are known to occur in the region (MRP, Section 817.97).

Two locations of Sclerocactus spp., were observed on the permit area during vegetation surveys (MRP, Section UMC 783.19). It is unknown if the populations are Sclerocactus wrightii, an endangered species listed by the U. S. Fish & Wildlife Service (USFWS), or Sclerocactus whipplei, another species which occurs in the area but cannot be easily distinguished from the former. The populations are not in areas which could be disturbed during final reclamation (MRP, Section 817.97).

No springs, streams, lakes or other wetlands exist within the immediate vicinity of the mine site and no other habitats of high value to wildlife were affected by mining activities (MRP, Section 817.97).

The proposed permanent seed mixture contains a diversity of native species which are of value as food and cover for wildlife (MRP, Section 783.19). Containerized shrub seedlings will be planted in clumps of 1/4- to 1/2-acre size to maximize edge effect and cover and to provide benefit to wildlife species which inhabit the area.

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Compliance

Since the status of the J. B. King Mine is in a termination and final reclamation phase, no further disturbance of surface areas or disruption of wildlife will occur. A final plan for revegetation of the site has been detailed in Sections 783.19 and 817.111-.117 of the MRP. Implementation of the plan will improve wildlife habitat on the permit area and provide a positive benefit to all wildlife species in the area.

One possible endangered plant species, Sclerocactus wrightii, is found on the permit area. However, no disturbance to this species will occur as a result of final reclamation.

Species to be used for final reclamation have been selected for their adaptability to climatic conditions on the site, and their value as cover and food to wildlife species. Containerized shrub seedlings will be planted in clumps to maximize cover and edge effect.

The applicant complies with this section.

Stipulations

None.

UMC 817.99 Slides and Other Damage - PGL

Existing Environment and Applicant's Proposal

The applicant commits to notification of the Division by the fastest available means of any slides or other damage which may have potential adverse effects on public property, health, safety or the environment in Section 817.99 of the MRP and to comply with any remedial measures required by the Division.

Compliance

The applicant commits to notification of the Division in the event of a slide and compliance with any remedial measures required by the Division. The applicant is in compliance with this section.

Stipulations

None.

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UMC 817.101 Backfilling and Grading - PGL

Existing Environment and Applicant's Proposal

The applicant proposes in Volume 2, Section 817.101 to blend the eastern portion of the permit area into the steep topography of the perimeter and the western portion of the permit area into the gently undulating rangeland immediately adjacent to the mine site.

The backfilling will entail the portal area, slurry ponds and subsurface foundation areas. Any significant depressions in the topography will be backfilled. Grading will take into consideration the proper contouring necessary to limit erosion, allow proper retention of water and assure stabilization of all slopes.

The applicant proposes to leave 1h:2v slopes in competent rock only and 1h:1v slopes in less competent materials such as soil and colluvium.

Compliance

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

The applicant will not retain any man-made highwalls. The applicant is in compliance with this section.

Stipulations

None.

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

Existing Environment and Applicant's Proposal

The J. B. King Mine during mining operations operated a coal wash plant for removing sandstone and shale from the coal. This washing process produced approximately 11 acres of coal refuse. The applicant has assumed a worst case condition and committed to covering the entire coal refuse pile with four feet of soil material. The volume of nontoxic soil material required to accomplish this is 64,000 yd³. A 7.4 acre borrow pit has been identified, sampled and found to be suitable as a cover material and plant growth medium (see Applicant's Proposal under UMC 817.21-.25 for specific information). Along with the commitment to cover the refuse pile with four feet of soil material, a set of test plots will be constructed on the refuse pile. The total test plot area will be approximately one acre in size and evaluate different soil depths used for reclamation of coal refuse (Section 817.111-.117, MRP).

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The coal refuse pile will be compacted and graded to a final configuration as indicated on Drawing 4050-5-12. The four feet of nontoxic cover material will be hauled from the borrow pit by a self-propelled scraper, graded, disked and seeded in accordance with Section 817.111-.117, MRP.

Compliance

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

The one acre test plot area is being installed at the request of the Division. The Division hereby relieves the applicant of the revegetation success liability for the one acre test plot area. Should reseeding of this area be necessary, it will be at Division expense. To assure no confusion exists as to the area of the test plots, it is requested that Map 4050-5-14 be revised to show the test plot area, and that this area not be included in the applicant's contour furrowing process.

Stipulation 817.103-(1)-EH

1. The applicant shall, within 30 days of permit approval, submit a revised Map 4050-5-14 depicting the test plot area.

UMC 817.106 Regrading or Stabilizing Rills and Gullies - PGL

Existing Environment and Applicant's Proposal

The applicant commits in Volume 2, Section 817.101, page 3 to fill, regrade or otherwise stabilize any rills or gullies deeper than nine (9) inches which form in areas which have been regraded and topsoiled. The areas adjacent to any rills or gullies which have been filled, regraded or otherwise stabilized will be reseeded or stabilized accordingly.

Compliance

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

Stipulations

None.

UMC 817.111-.117 Revegetation - SC

Existing Environment and Applicant's Proposal

The J. B. King Mine lies on the east central perimeter of the Emery coal field, located in Southern Castle Valley between the Fish Lake Mountains on the west and the San Rafael Swell on the east.

The Emery coal field consists of shallow saline soils and sparse precipitation. Two vegetation types dominate the mine area. They are the pinyon-juniper woodland and shadscale-snakeweed shrubland. Disturbance has occurred primarily on the latter type (Exhibit 3, Section 783.19, MRP).

As described under Section 783.19(A) of the MRP, a 3.9 acre section of the shadscale-snakeweed shrubland was selected as a reference area. The reference area is similar in elevation, topography, aspect and soil type to the disturbed area. The reference area was sampled for vegetation cover and woody plant density. Productivity was estimated by the Soil Conservation Service (SCS). The condition of the reference area was good (Attachment I).

The revegetation plan for the disturbed areas is outlined in the MRP under Sections 784.13 and 817.111-.117. It describes the seed mixture to be used, timing of planting, mulching techniques and measures to be used to determine success of revegetation.

Compliance

UMC 817.112 Revegetation: Use of Introduced Species

Only one introduced species, yellow sweetclover (Melilotus officinalis) is proposed for use in final reclamation. This species is acceptable due to its drought tolerance, resistance to heavy grazing, value to wildlife and a nitrogen-fixing ability. It is not considered to be competitive to native species.

The applicant complies with this section.

UMC 817.113 Revegetation: Timing

Seeding will be accomplished in the fall between September 15 and November 15 of each year in which reclamation is to occur (MRP, Section 784.13). This is the normal period for favorable seeding of the species being used in final reclamation. Containerized shrubs will be planted in the spring to take advantage of higher soil moisture and cooler temperatures (MRP, Section 817.113). This is also the normal period for favorable planting of shrub species.

In the event that a spring seeding becomes necessary, all revegetation will be conducted between March 1 and April 15 (MRP, Section 784.13). This will help ensure that there is adequate soil moisture for germination and seedling survival. In addition, an irrigation plan will be developed and approved by the regulatory authority prior to initiation of spring seeding (MRP, Section 784.13).

The applicant complies with this section.

UMC 817.114 Revegetation: Mulching

All areas to be seeded or planted will be mulched with weed-free native hay at a rate of 1.5 tons per acre. The mulch will be crimped into the soil to help assure protection of soil (MRP, Section 784.13).

The applicant complies with this section.

UMC 817.116 Revegetation: Standards for Success

Vegetative cover (total and by species) will be monitored on all revegetated areas during the third and fifth years after planting. The same sampling methods will be used for cover monitoring as were used during the baseline inventory. Sample adequacy for cover will be determined through the use of the standard DOGM formula, with t (two-tailed) = 1.0 and d = 0.1. Spot seeding on areas that experienced revegetation failure will be undertaken after identification of the problems leading to the failure (MRP, Section 784.13).

The revegetation success standards for cover and production will be obtained from the shadscale-snakeweed reference area at the time of bond release testing. Vegetation cover and production on the reclaimed areas will equal or exceed 90 percent of the cover and production on the reference area, with an 80 percent confidence level (MRP, Section 784.13).

The applicant complies with this section.

UMC 817.117 Revegetation: Tree and Shrub Stocking

The applicant has proposed a shrub density standard of 500 stems per acre for the reclaimed areas. This is substantially lower than the reference area density of 23,806 stems per acre, however, it is felt that the proposed rate is more consistent with the major postmine land uses of cattle grazing.

This is an acceptable proposal since the majority of shrubs (70 percent) are broom snakeweed (Xanthocephalum sarothrae). This shrub has a low use for grazing and is of minimal value to most wildlife. It will be replaced by fewer but much more palatable shrub species and a wide variety of grasses and forbs (Table 12). This will enhance both livestock grazing and wildlife habitat.

Woody plant densities will be monitored during the first, third and fifth years following initiation of reclamation. Sampling methods will be the same as those used during the baseline inventory. Sample adequacy will be determined through the use of the standard DOGM formula.

SEP 19 1990

The applicant complies with this section.

Feasibility of Reclamation

The J. B. King Mine site receives approximately 8-12 inches of precipitation annually. This amount is sufficient for establishment of the species to be used in final reclamation. Reclaimed areas will be mulched to help protect against erosion and retain soil moisture. Fall seeding and spring planting are planned. These are the normal periods for seeding and planting of the species to be used.

Stipulations

None.

UMC 817.121-.126 Subsidence Control - RVS

Existing Environment and Applicant's Proposal

Room and pillar methods with secondary pillaring were employed to extract the Ferron "I" seam (MRP, Volume 1, Section 784.11). Overburden ranged from 80 to 135 feet (Drawing 4050-5-5-R) and the Ferron "I" seam averaged 13 feet in thickness.

Maximum subsidence was projected to be seven feet (MRP, Volume 2, Section 784.20, page 5) and subsidence monitoring data indicate up to seven feet of subsidence has occurred in the southern portion of the mined area (Drawing 4050-5-36). Moreover, annual monitoring data show the rate of vertical movement is decreasing and suggest the maximum value for subsidence is being approached (Drawing 4050-5-36). The major subsided area depicted on Drawing 4050-5-36 trends north and northeast and encompasses a small depression that may pond surface runoff.

Tensional cracks related to subsidence occur in areas adjacent to and over barrier pillars located along the southern margins of the permit area (Drawing 4050-5-36). DOGM technical staff conducted a site inspection on February 27, 1985 and observed surface tension cracks to be a maximum of five to eight inches wide and several hundred feet long. Crack depth was not accurately determined, however, technical staff concurred that cracks extend several tens of feet below the ground surface.

The applicant proposes to fill tension cracks where possible with either dirt or timbers and fence and post tension cracks that cannot be filled (drawing entitled Tension Crack Safety Barriers). Protection barriers will be installed within 90 days of permit approval (Volume 2, Section 817.124, page 4).

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Annual subsidence monitoring will continue until bond release and results will be submitted to the Division.

Compliance

The applicant has provided information about mining methods and overburden thickness to indicate mining activities were planned and conducted in order to prevent subsidence from causing material damage to the surface (UMC 817.121).

An assessment of regulatory compliance with UMC 817.122 is not applicable due to permanent cessation of mining. The mine plan and adjacent area contain neither perennial streams, impoundments, aquifers significant to public water supplies or public buildings. The applicant is in compliance with UMC 817.126.

The applicant will achieve compliance with UMC 817.124 when the following stipulation is met.

Stipulation 817.121-.126-(1)-RVS

1. The applicant must, within 90 days of permit approval, commit to inspecting subsidence barriers during the annual subsidence monitoring program. Barriers or fencing shall remain in place until the Division determines (prior to bond release) that surface tension cracks no longer pose a hazard to cattle grazing.

UMC 817.131 Cessation of Operations: Temporary - PGL

Existing Environment and Applicant's Proposal

This section is not applicable due to the permanent cessation of mining activities.

UMC 817.132 Cessation of Operations: Permanent - PGL

Existing Environment and Applicant's Proposal

The applicant proposes to reclaim the disturbed site according to an approved reclamation plan after a permit has been issued in Section 817.132 of the MRP.

Compliance

The applicant complies with this section.

Stipulations

None.

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UMC 817.133 Postmining Land Use - SC

Existing Environment and Applicant's Proposal

The J. B. King Mine was opened in 1939 and was intermittently mined until January 1981 when operations ceased. Approximately 1.5 million tons of coal have been removed using the room and pillar method of mining.

The land use on the permit and surrounding areas has been and continues to be primarily cattle grazing and wildlife habitat. The lands surrounding the permit area are administered by the Bureau of Land Management (BLM).

The applicant will return the site to the premining uses of livestock grazing and wildlife habitat. Disturbed areas will be regraded, topsoiled, planted and monitored to achieve the appropriate success standards as discussed under UMC 817.111-.117 of this document.

Compliance

The disturbed areas will be returned to conditions that are capable of supporting premining land uses.

The applicant complies with this section.

Stipulations

None.

UMC 817.150-.156 Roads: Class I - PGL

Existing Environment and Applicant's Proposal

The county road from the junction at I-70 to the J. B. King guard house is designated as a public road (Emery County maintains the road from I-70 to the mine guard shack) (see Drawing 4050-5-9 and letter from Emery County Commissioner dated March 18, 1985).

Within the permit area, 600 feet of road from the guard shack to the mine yard is designated as a Class I haul road. The road will be removed and then reclaimed as outlined on Drawing 4050-5-13-R. The area will be covered with topsoil and seeded.

Compliance

The applicant's permanent reclamation measures for the Class I road comply with this section.

Stipulations

None.

UMC 817.160-.166 Roads: Class II - PGL

There are no Class II roads on the property, therefore, this section is not applicable.

UMC 817.170-.176 Roads: Class III - PGLExisting Environment and Applicant's Proposal

The Class III road beginning at the refuse pile and extending about 700 feet southwest across the mine yard will be eliminated and reclaimed. The section which climbs to the microwave tower and beyond for a total distance of 415 feet will be ripped, scarified and shaped to conform to the original topography as outlined in Section 817.170-.176 of the MRP.

The balance of the road (2,000 feet) from the microwave tower to the public road will be reclaimed by ripping, scarifying and natural drainages restored. Sand "ricks" at the side of the road as the result of blading will be returned to the roadbed for revegetation as stated in Section 817.170-.176, MRP.

Compliance

The applicant's proposal to reclaim the road is in compliance with this section.

Stipulations

None.

UMC 817.180 Transportation Facilities - PGLExisting Environment and Applicant's Proposal

The applicant states that the conveyor system from the "F" portal is the only transportation facilities at the J. B. King Mine site. This conveyor system will be dismantled and transported from the property during Phase I of the reclamation program in Section 817.180, MRP.

Compliance

There are no springs, streams, lakes or other wetlands in the area which could be affected by the dismantling and reclamation activities. The area of the conveyor system will be prepared for reseeding as outlined in the reclamation plan.

Applicant complies with this section.

Stipulations

None.

UMC 817.181 Support Facilities and Utility Installations - PGL

Existing Environment and Applicant's Proposal

The applicant outlines in Section 784.12 of the MRP the surface buildings and structures: coal preparation plant; crusher station; material handling structures; coal loadout; shop and warehouse; substations (2); office change house and safety trailer; fuel storage; and microwave system. Electric power is supplied to the mine site by Utah Power & Light Company. There are six wells at the mine site. All waste water from lavatory and shower facilities is disposed of through a self-contained septic tank absorption field system.

The applicant describes in the reclamation plan how the support facilities will be disassembled and removed. The applicant states that "they have been constructed and located to prevent damage to public or private property" in Section 817.181, MRP

Compliance

The applicant will reclaim the support facilities and utility installations in accordance with this section.

Stipulations

None.

0310R

CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT

SEP 19 1990

Western States Minerals Corporation
J. B. King Mine
INA/015/002, Emery County, Utah

August 9, 1985

I. Introduction

The purpose of this report is to provide a Cumulative Hydrologic Impact Assessment (CHIA) for Western States Minerals Corporation's J. B. King Mine located in Emery County, Utah. The assessment encompasses the probable cumulative impacts of all anticipated coal mining in the general area on the hydrologic balance and whether the operations proposed under the application have been designed to prevent damage to the hydrologic balance outside the proposed mine plan area. This report complies with federal legislation passed under the Surface Mining Control and Reclamation Act (SMCRA) and subsequent Utah and federal regulatory programs under UMC 786.19(c) and 30 CFR 784.14(f), respectively.

Western States Minerals Corporation's J. B. King Mine is located within the Emery Coal Field approximately 10 miles south of Emery, Utah (Figure 1). The J. B. King Mine is adjacent to Dog Valley in the east-central portion of the Emery Coal Field. Elevations range from 6,000 to 7,000 feet over most of the Emery Coal Field. To the south, along Paradise Valley elevations are somewhat higher and exceed 8,500 feet.

Outcropping rocks of the Emery Coal Field range in age from Lower Cretaceous to Quaternary in age. The rock record reflects oscillating transgressive and regressive sequences that include, in ascending order, fluvial through littoral (Dakota Sandstone), marine (Rununk Shale), fluvial and lagoonal (Ferron Sandstone) and marine (Blue Gate Shale, Emery Sandstone, Maserk Shale) depositional environments. Unconformably overlying Cretaceous sedimentary rocks are Tertiary volcanics and Quaternary deposits. The major coal-bearing unit in the Emery Coal Field is the Ferron Sandstone.

Precipitation varies from 16 inches along the western border of the coal field to less than 8 inches eastward.

There are two major vegetation types present in the area. Pinyon-juniper woodland occupies the upland areas of Castle Valley and benches along the Fish Lake Mountains and the lower areas of Castle Valley support the desert shrub-vegetation type. Interspersed between these two types is the sagebrush shrubland.

SEP 19 1991

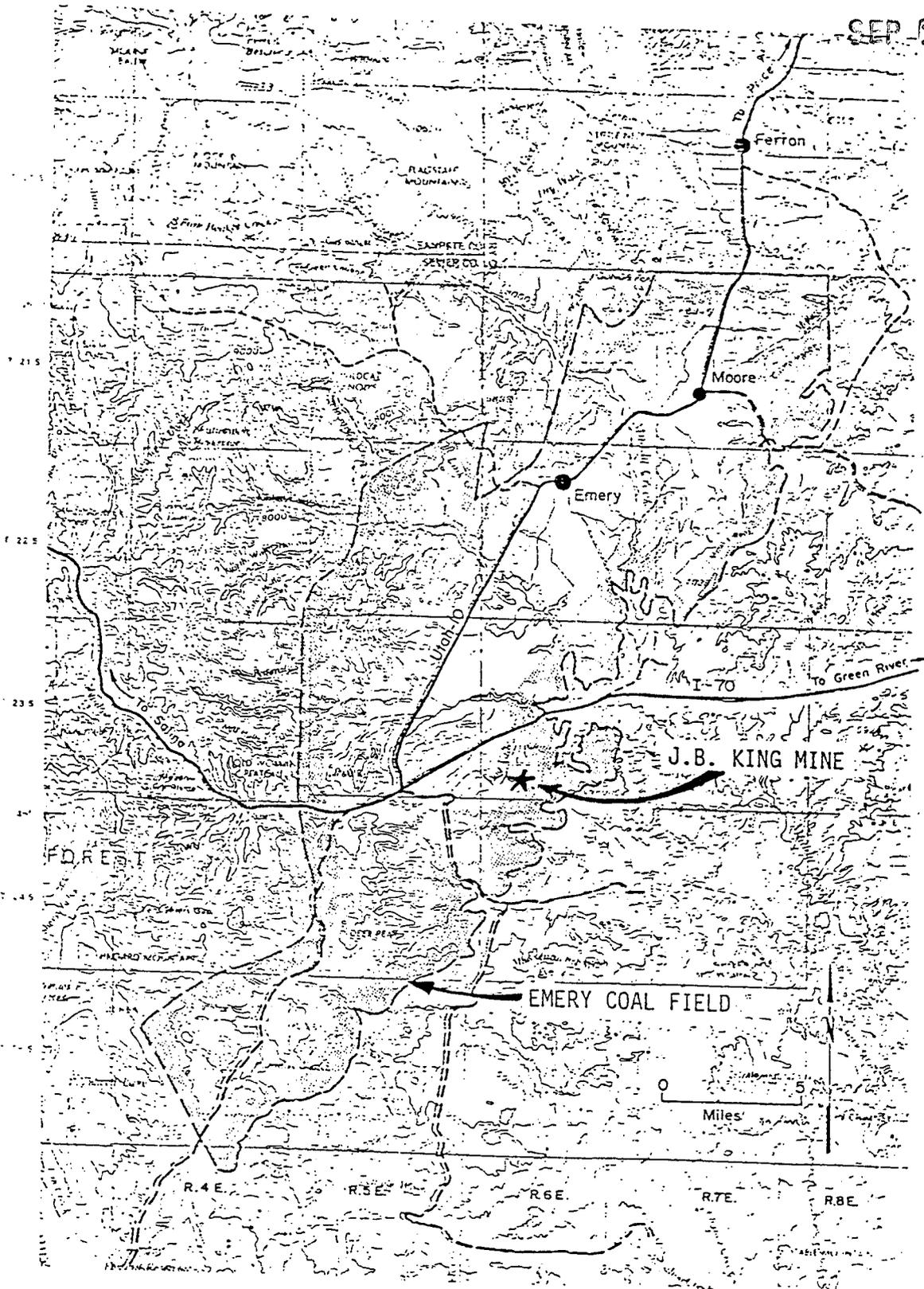


Figure 1. Emery Coal Field (from Doelling 1972).

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The Emery Coal Field is a part of the Muddy Creek drainage system which drains to Lake Powell within the Colorado River system. The major streams in the region (Price River, San Rafael and Muddy Creek) all have been dry in their lower reaches sometime during the period of record. Drainage from the CIA is ephemeral and flows only in direct response to snowmelt or precipitation. Stream flow is the greatest during late spring and early summer decreasing to a minimum flow in early autumn through mid-winter for larger streams. Intense rainfall causes heavy flooding mainly in localized areas with runoff dissipating quickly due to the small areas affected by the storms.

II. Cumulative Impact Area (CIA)

Figure 2 delineates the CIA for the J. B. King Mine. The CIA includes the SE1/4 of Section 30, S1/2 of Section 29, SW1/4 of Section 28, E1/2 of Section 31, Section 32 and W1/2 of Section 33, Township 23 South, Range 6 East and the NE1/4 of Section 6, N1/2 of Section 5 and NW1/4 of Section 4, Township 24 South, Range 6 East. The CIA encompasses 2,560 acres.

III. Scope of Mining

Mining within the study area began in 1930 and continued until 1970 at the Dog Valley Mine. Western States Minerals Corporation acquired the Dog Valley Mine in 1976 and renamed it the J. B. King Mine. Mining was terminated and the J. B. King Mine was designated inactive in 1985.

The permit area encompasses 320 acres. Mining occurred in the Ferron "I" seam. Production was from room and pillar mining methods with secondary pillaring. Overburden thickness range from 80 to 135 feet.

IV. Study Area

A. Geology

Stratigraphic units outcropping within the study area include, from oldest to youngest, the Tununk Shale, Ferron Sandstone, Blue Gate Shale and Quaternary deposits. Lithologic descriptions and unit thicknesses are given in Figure 3.

Rocks in the study area strike generally north and dip one to two degrees to the west. Principal coal accumulations occur within the Ferron Sandstone Member of the Mancos Shale. Two coal seams with economic potential have been identified and are termed, in ascending order, the Ferron "F" and "I" seams. Approximately 170 feet of interburden separate the two seams. Mining has not occurred in the Ferron "F" seam and this resource may be a target for future development.

SEP 19 1989

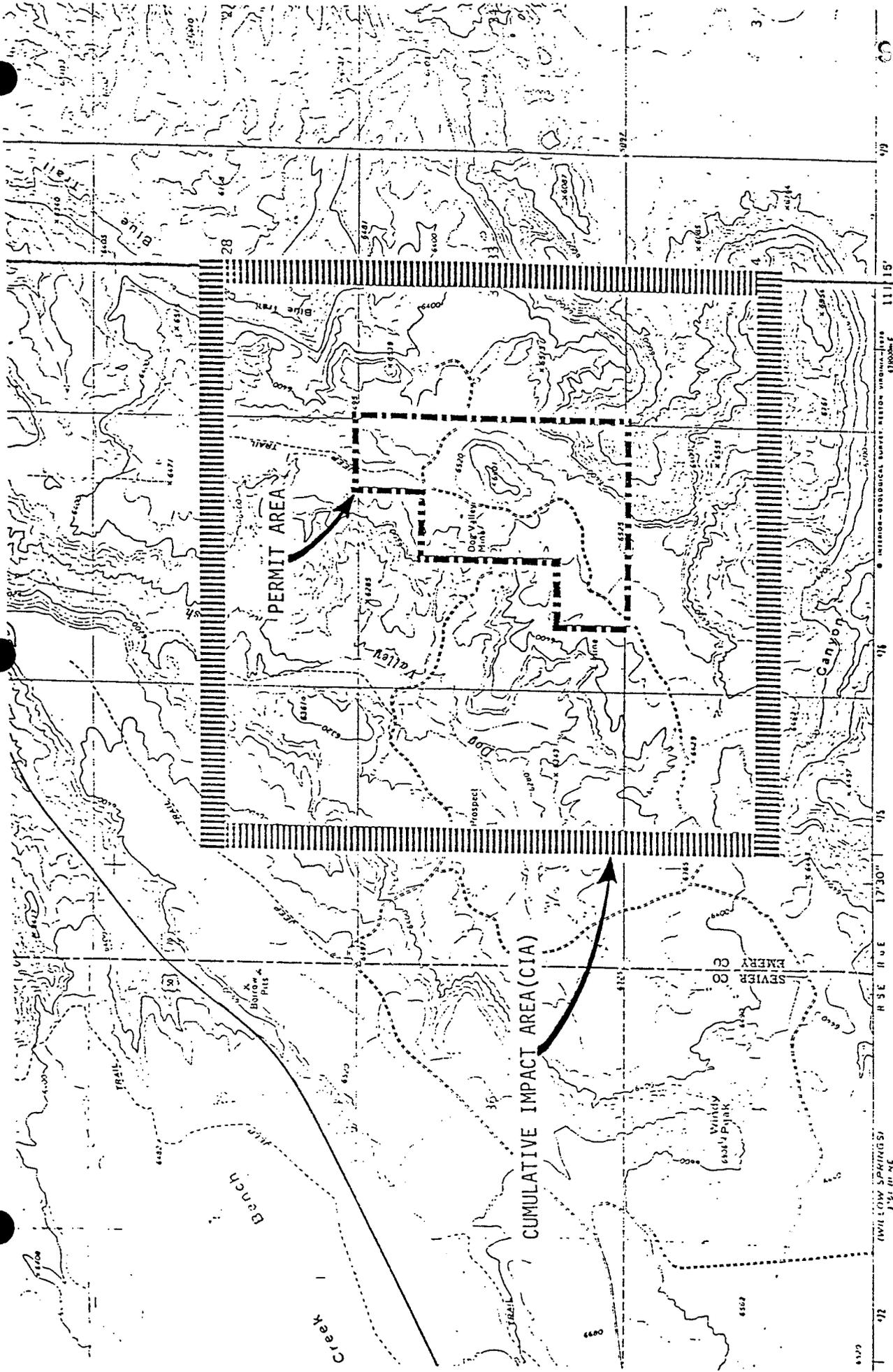


Figure 2. Cumulative Impact Area (CIA).

SCALE 1:24,000

CONTOUR INTERVAL 40 FEET

DOTTED LINES REPRESENT 20 FOOT CONTOURS

NATIONAL GEODETIC DATUM OF 1929

System	Series	Stratigraphic Unit	Thickness (feet)	Description
Quaternary	Holocene	Quaternary Deposit	Variable	Surficial stream terrace and channel and alluvial fan deposits.
	Pleistocene			
Upper Cretaceous	Coniacian	Blue Gate Shale Member	1,600	Pale blue-gray, modular and irregularly bedded marine mudstone and siltstone.
	Tuconian	Ferron Sandstone Member (major coal seams)	400-500	Alternating yellow-gray sandstone, sandy shale and gray shale with important coal beds of Emery Coal Field.
	Cenomanian	Tununk Shale Member	600-700	Blue-gray to black sandy marine mudstone.

Figure 3. Stratigraphy of the J. B. King Mine Area (modified from Doelling 1972).

B. Topography and Precipitation

Topography ranges from less than 6,000 feet to over 6,500 feet in the CIA.

The study area is characterized by a northerly and easterly system of small ephemeral drainages.

Average annual precipitation is 12 inches. The CIA may be classified as semiarid.

There are basically two vegetation types on the permit area; shadscale-snakeweed shrubland and pinyon-juniper woodland. The shadscale-snakeweed shrubland occurs on approximately 30 percent of the permit area. It generally occupies the flat to moderately sloping terrain. Total vegetation cover in this type is around 10 percent.

The pinyon-juniper woodland occurs on approximately 60 percent of the permit area. It occupies areas along the escarpments and ridges found throughout the site. It has a very sparse understory and low vegetative ground cover.

V. Hydrologic Resources

A. Ground Water

The ground-water regime within the CIA is dependent upon climatic and geologic parameters that establish systems of recharge, movement and discharge.

Springs do not occur within and adjacent to the CIA. Exploration drilling (63 boreholes) within the permit area did not encounter subsurface water above the Ferron "I" seam. Moreover, mining development did not intercept sufficient ground water to warrant discharge.

Six boreholes, located within and adjacent to the permit area, were completed and developed for the purpose of accessing water resources. An aquifer located approximately 200 feet below the Ferron "I" seam was identified and utilized in mine operations.

B. Surface Water

The J. B. King Mine site and CIA drain to the Dog Valley Wash which in turn drains to Ivie Creek in the Muddy Creek drainage. The watershed within the CIA is ephemeral in nature responding only to major precipitation events and snowmelt (Figure 1). The chemical quality of surface water in this area is relatively good but deteriorates downstream due to a gradual increase in total dissolved

solids (TDS) concentration as the flow continues downstream. Suspended sediment levels during major storm events is significant based on the erosive nature of the soils in the region. The concentration of dissolved solids in streams is usually inversely proportional to the flow. The chemical quality of water is usually best during high flow and worst during low flow.

VI. Potential Hydrologic Impacts

A. Ground Water

The only identifiable ground-water resource within the CIA is the aquifer located approximately 200 feet below the Ferron "I" seam. Inasmuch as mining did not intercept sufficient water to warrant discharge, and exploration drilling did not encounter subsurface water, a natural system of recharge from the surface above the workings to the aquifer below is not thought to be existent. Accordingly, a mining induced dewatering impact is determined to have a low probability.

Subsidence related to mining has the greatest potential for impacting ground-water resources in the CIA. Subsidence impacts are largely related to extension and expansion of the existing fracture system and upward propagation of new fractures. Surface infiltration and vertical migration may increase if surface tension fractures propagate to the surface.

Subsidence monitoring above the abandoned workings has identified zones of mining induced tension fractures above and adjacent to outcrop barrier pillars along the eastern boundary of the permit area. The zones of tensional fracturing are up to several tens of feet wide and hundreds of feet long. Individual tension fractures have not naturally healed and remain open. One small, circular shaped subsidence depression has also been identified. The remaining surface area has uniformly subsided a maximum of seven feet.

The surface tension fractures may readily divert surface runoff into the subsurface and thereby increase the natural system of recharge. However, this potential impact is considered temporary since the operator has committed to sealing all open tension fractures prior to bond release. The semiarid climate within the CIA will serve to limit temporary impacts to the ground-water regime and are hereby determined to be minimal. Similarly, potential hydrologic impacts related to impounding water in the depressed area are determined to be minimal because the proportion of water that may infiltrate into subsurface is considered insignificant.

B. Surface Water

The area influenced by surface disturbance is of limited areal extent. Surface sediment controls currently are in place and will continue to be in place during reclamation. The water quality impacts associated with reclamation will be minimal or nonexistent due to the fact all drainage from the disturbed area will be routed through sediment controls and treated prior to any release if a release does occur. Site-specific erosion control practices, such as riprap, silt fences, contour furrows and energy dissipators will be used to control erosion of small areas within the disturbed area.

The operational design proposed for reclamation of the J. B. King Mine is herein determined to be consistent with preventing damage to the hydrologic balance outside the mine plan area.

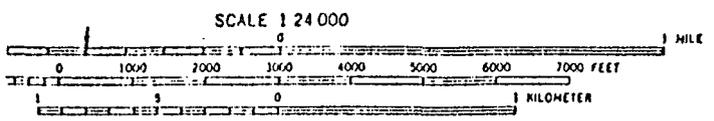
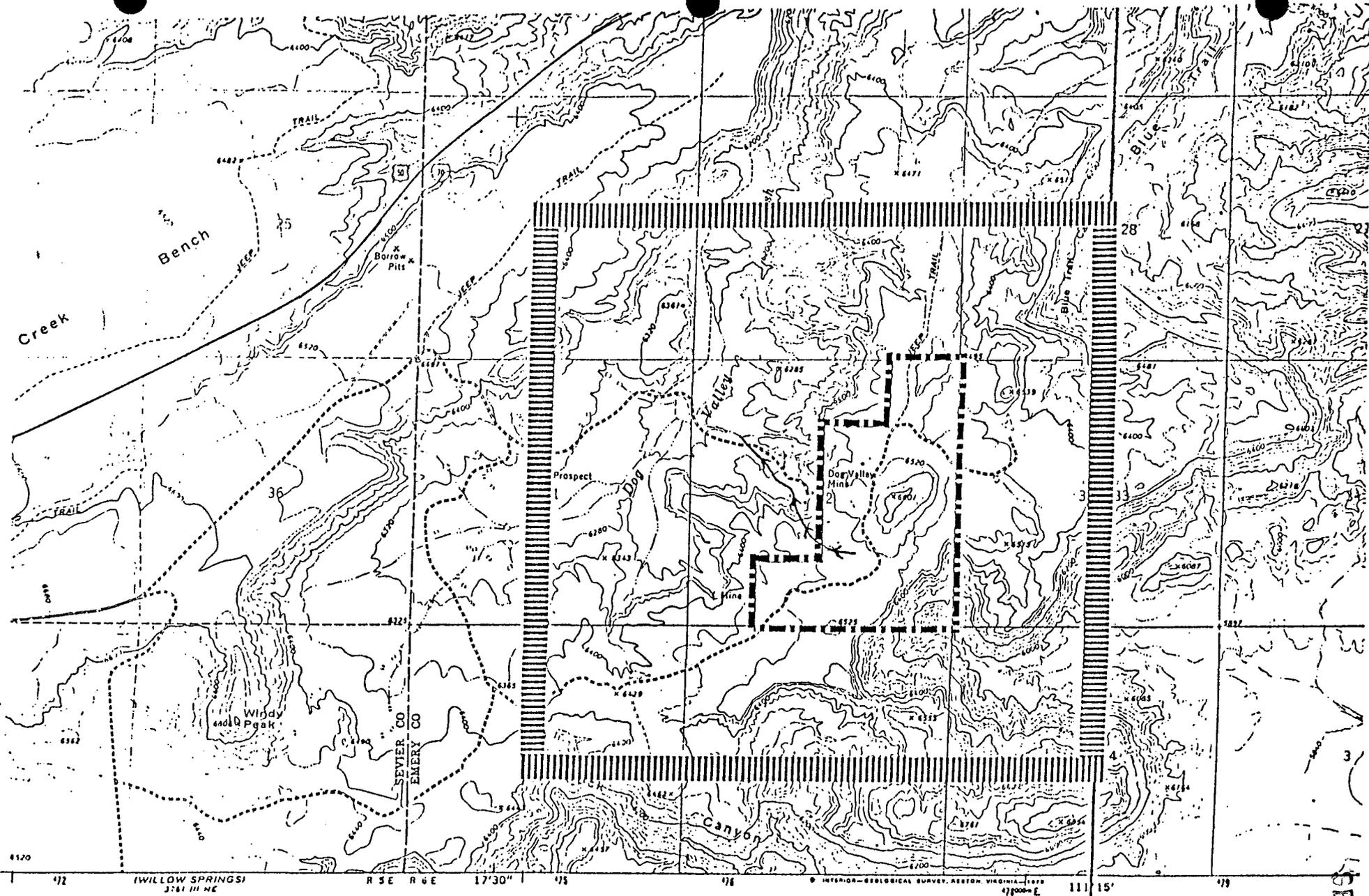


Figure 4. Surface Water Drainage Area

CONTOUR INTERVAL 40 FEET
 DOTTED LINES REPRESENT 20 FOOT CONTOURS
 NATIONAL GEODETIC VERTICAL DATUM OF 1929

SEP 16 1990

(SEP 19 1999)

REFERENCES

Doelling, H. H. 1972. Central Utah coal fields: Sevier-Sanpete, Wasatch Plateau, Book Cliffs and Emery: Utah Geol. and Mineral Surv., Monograph Ser. No. 3.

Western States Minerals Corporation, Consolidated Mining and Reclamation Plan, May 1, 1985, J. B. King Mine, Emery County, Utah

0349R

SEP 19 1990

AFFIDAVIT OF PUBLICATION

STATE OF UTAH)
 ss.
County of Carbon,)

I, Dan Stockburger, on oath, say that I am the Publisher of the
The Sun Advocate, a weekly newspaper of general circulation,
published at Price, State and County aforesaid, and that a
certain notice, a true copy of which is hereto attached,
was of published in the full issue of such newspaper
for.....Four (4).....consecutive issues, and that the first
publication was on the

 28th June 90
.....day of....., 19.....

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

.....19th...day of...July....., 19...90.

Dan Stockburger
.....

Subscribed and sworn to before me this

.....19th...day of...July....., 19...90.

Holly Jo Croft
.....
Notary Public.

My Commission expires October 22, 1990

Residing at Price, Utah

Publication fee, \$62.40.....

LEGAL NOTICE

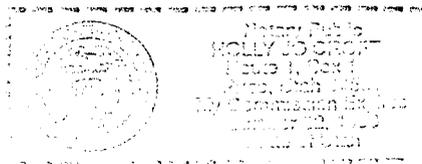
Western States Minerals Corporation, Wheat Ridge, Colorado, hereby announces its intent to renew the coal mining permit for the J.B. King Mine. The J.B. King Mine was reclaimed in the fall of 1985. The current plans are for the mine to remain reclaimed and inactive.

The J.B. King Mine is located eight miles south of Emery, Utah, in the Dog Valley Wash. The entire property is within the USGS 7.5 minute "Salina" Quadrangle Map. The permit areas covers 300 acres and encompasses the reclaimed surface facilities and the maximum extent of the proposed underground workings. The permit area includes portions of all four quarter sections of Section 32, T23S, R6E, SLB&M.

Copies of the permit application are available for inspection at the following locations: Office of Surface Mining, Denver, Colorado; and the Price and Salt Lake City, Utah offices of the Utah Division of Oil, Gas and Mining.

Written comments, objections or requests for informal conferences on the permit renewal application may be addressed to the Utah Division of Oil, Gas and Mining, 355 W. North Temple, 3 Triad Center, Suite 350, Salt Lake City, Utah, 84180-1203 with copies to Western States Minerals Corporation, 4975 Van Gordon Street, Wheat Ridge, Colorado, 80033.

Published in the Sun Advocate June 28, July 5, 12 and 19,



8K 816 (REDIFORM)®

RECEIPT Date June 13, 1990 No 4378

Received From Western States Minerals

Address J. B. King Mine

Dollars \$ 5.⁰⁰

For Permit Renewal Five Dollars and ⁰⁰/₁₀₀ -

ACCOUNT		HOW PAID	
AMT. OF ACCOUNT		CASH	
AMT. PAID		CHECK # <u>239</u>	<u>5.⁰⁰</u>
BALANCE DUE		MONEY ORDER	

By [Signature]

BRUCE VERMILYEA 10-89

C/O WESTERN STATES MINERALS
4975 VAN GORDON STREET 425-7042
WHEAT RIDGE, CO 80033

4/27 19 90 239

82-223/1070

Pay to the order of Division of Oil, Gas & Mines \$ 5.⁰⁰

Five Dollars

CITYWIDE BANK
of APPLEWOOD
(303) 232-6500
12601 WEST 32ND AVENUE
WHEAT RIDGE, COLORADO 80033

Memo IWA/015/002 - Permit Renewal

[Signature]

⑆107002231⑆ 474572 30⑈ 0239

SEP 19 1990

4/90

UMC 782.13 IDENTIFICATION OF INTEREST

The officers of Western States Minerals Corporation are:

President:	A.B. Morrow	Address:	4975 Van Gordon St.
Treasurer:	J.F. Carmody		Wheat Ridge, CO 80033
Secretary:	A.R. Cerny		Phone: 303-425-7042

Directors:	A.B. Morrow	Western States Minerals Corporation
	C.S. Yannias	W.S. Holding Corporation
	J. Safra	W.S. Holding Corporation

Western States Minerals Corporation was purchased from S.J. Groves and Sons Company on November 15, 1989 by:

W.S. Holding Corporation
Constantine S. Yannias, President
333 West Wacker Drive, Suite 1410
Chicago, IL 60606

Neither Western States Minerals Corporation or W.S. Holding Corporation owns, operates or holds permits on any coal mines other than J.B. King.

UMC 782.14 COMPLIANCE INFORMATION

A description of the violations received and corrective action taken from September, 1985 to April, 1990 for the J.B. King Mine is summarized below:

1. NOV N85-8-14-1, Dated 9/6/85
A sediment control dike was breached during reclamation.
The dike was repaired within 72 hours.
2. NOV N88-30-1-2, Dated 9/7/88
 - a. Erosion rills greater than 9 inches in depth were present on the east slope.
The rilling was repaired. Silt fences were reinstalled and bermed.
 - b. Tension cracks above the mined out area had not been filled in or covered.
The cracks were backfilled and seeded.
3. NOV N89-32-1-1, Dated 1/5/89
Fences surrounding the reclaimed area were in disrepair. Damage to the reclaimed area had been caused by cattle grazing.
The fence was rebuilt.
4. NOV 89-29-1-1, Dated 6/8/89
Vegetation monitoring was not performed according to the permit.
The vegetation was inventoried and a report submitted.

SEP 19 1987

4/90

UMC 782.15 RIGHT OF ENTRY AND OPERATION INFORMATION

All J.B. King mineral leases were relinquished in the fall of 1985 after mine reclamation was completed. Western States Minerals Corporation currently holds state grazing permit No. GP-22743. This permit covers 60 acres and includes the 28 acres of reclaimed area. A copy of the permit is attached.

THE STATE OF UTAH

SEP 19 1999

DIVISION OF STATE LANDS & FORESTRY

GRAZING PERMIT

PERMIT NUMBER GP 22743

AUM(S) 10.75

In consideration of the rents to be paid and the covenants to be kept and performed, the State of Utah acting by and through its Board of State Lands and Forestry hereinafter referred to as Permitter, does hereby permit, let, and demise unto:

WESTERN STATES MIN CORP.
4975 VAN GORDON STREET
WHEAT RIDGE CO 80033

hereinafter referred to as Permittee, in the following described lands situated in County(s) Emery
STATE OF UTAH:

Description of permitted land:

T 23 S, R 6 E, SLB&M
Sec. 32 SE4NW4, N2NE4SW4

Containing 60.00 acres, more or less.

This permit shall remain in effect, unless sooner terminated as herein provided, for a term of 10 years, beginning 5/01/89; expiring 4/30/99.

This permit is granted subject to the following terms and conditions:

1. Permittee shall pay the Permitter, in advance, the annual fee established by the Division for the above described land, which fee shall not be less than the current approved AUM fee. Permitter reserves the right to adjust the rental at the end of any year during the term hereof if, in Permitter's opinion, such a change is indicated by a range survey or because of sale or lease of part of the permitted premises.

SEP 19 1990

2. Permittee shall have the right to use the above described property only for the purpose of grazing livestock. Permitter reserves the right to determine the number and kinds of livestock, and season of use. When the above described property is located within Permittee's Federal allotment boundary, the number and kinds of livestock, and season of use will concur with the Federal agencies recommendations, unless the Permitter directs otherwise.

3. Permitter may sell or exchange the above described property, in whole or in part, as it may desire, and Permittee shall quit the premises at the end of the calendar year, provided that Permitter shall send notice of sale or exchange to Permittee. Permitter also reserves the right to terminate this permit in whole or in part after not less than 60 days written notice should it desire to do so for any reason whatsoever.

4. Permitter reserves the right to lease said property to third persons for mining or exploration for coal, oil, and gas, and all other minerals.

5. This permit is deemed to incorporate by reference all provisions of applicable laws and rules and regulations of the Board of State Lands and Forestry, and will be deemed modified whenever such rules and regulations are amended hereafter.

6. Permittee shall not cause waste by improper grazing use or otherwise, and shall comply with good conservation practices to safeguard and improve water and other surface resources and shall comply with Permitter's requirements and requests respecting conservation practices.

7. Permittee shall not assign, sub-lease, mortgage, pledge, or otherwise, dispose of any interest in this permit without the consent of Permitter.

8. It is understood this permit is issued only under such title as Permitter may have and that Permitter does not warrant its title; and, in case of title failure, Permittee shall not be entitled to claim any refund or rentals paid to Permitter.

9. Permittee shall not initiate or establish any water right on the permitted premises except in the name of the State of Utah, Division of State Lands and Forestry. Such right initiated or established shall become an appurtenance to the permitted premises.

10. There is reserved to the public access across and upon the land permitted hereunder, for the purpose of hunting, trapping and fishing, as provided in Section 23-12-4, Utah Code Annotated, 1953, as amended. Except for this reservation, the public shall have no right to enter the permitted lands to disturb wildlife. The public shall have no right to disturb livestock on the permitted lands.

IN WITNESS WHEREOF, we have set our hands this 28th day of August A.D. 1989.

APPROVED AS TO FORM:
R. PAUL VAN DAM
ATTORNEY GENERAL

BY [Signature] DIVISION OF STATE LANDS AND FORESTRY

Previous GP No. _____

SEP 19 1990

4/90

UMC 782.19 IDENTIFICATION OF OTHER LICENSES AND PERMITS

All other licenses and permits required for mine operation have either expired or been designated inactive. A 60 acre grazing permit, No. GP-22743, is currently held with Utah State Lands and Forestry.

181 119 1990

UMC 783.19 VEGETATION INFORMATION

UMC 784.13 RECLAMATION PLAN: GENERAL REQUIREMENTS

Vegetative cover (total and by species) will be monitored on all revegetated areas during the 4th and 6th years after planting. Woody plant densities will be monitored during the 2nd, 4th and 6th years following initiation of reclamation.

4/90

UMC 805.11 BOND AMOUNT

The current bond amount of \$126,078 (1996 dollars) represents 40 percent of the bond posted for the mine prior to reclamation. It is more than adequate for post reclamation monitoring and maintenance as is shown below:

1. Quarterly Monitoring

A contractor from either Salina or Huntington would be employed to inspect the site quarterly, repair fences and fill in erosion rills.

Cost per inspection:

8 hrs x \$30/hr =	\$240
100 miles x \$.40/mile =	40
Materials (wire, straw)	20
	<u>\$300/ea.</u>

\$300/inspections x 4 inspections/year x 5 years = \$6,000

2. Regrade and rip 6 acres (20% of site).

D-7 w/rippers 8 hrs x \$140/hr = \$1,100

3. Drill seeding and hand planting of containerized stock (20% of site).

6 acres x \$1,500/acre = \$9,000

4. Repair drainage channels - 800 feet (assumes 20% of channels require repair with additional riprap imported for 100 feet of main channel and 100 feet of feeder ditch).

Backhoe 40 hrs x \$90/hr =	\$ 3,600
Hand labor 80 hrs x \$25/hr =	2,000
Riprap 300 tons x \$15/ton =	4,500
	<u>\$10,100</u>

5. Backfill tension cracks, seed and handrake.

Backhoe 16 hrs x \$90/hr =	\$ 1,400
Hand labor 32 hrs x \$25/hr =	800
Seed 25 lb x \$8/lb	200
	<u>\$ 2,400</u>

6. Equipment Mob-Demob \$ 2,000

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Cost Summary

1.	Monitoring		\$ 6,000
2.	Regrade and rip		1,100
3.	Seeding		9,000
4.	Channel repair		10,100
5.	Subsidence repair		2,400
6.	Mobilization		2,000
		Subtotal	<u>30,600</u>
7.	Contingency (10%)		3,100
		Total	<u>\$33,700</u>

Note: Labor and equipment costs are estimated on the high side to approximate blue book and means rates. Costs for seeding and rip rap are based on previous site costs which have been adjusted for inflation.

UMC 817.44 HYDROLOGIC BALANCE
STREAM CHANNEL DIVERSIONS

Main Channel (Borrow Pit Drainage Ditch)

The main channel design from station 3+20 to 7+00 (refer to map No. 4050-5-14R) is to include riprap as is described below.

Channel Design (Station 3+20 to 7+00):

The channel will consist of a trapezoided ditch with a 6 foot bottom width, 1.7 foot depth and 2/1 side slopes. The channel depth will be in addition to the depth of the riprap and filter layer. The filter layer will consist of 2-inch minus gravel and will be 9 inches deep. The riprap will have a nominal depth of 18.7 inches and will have the following gradation:

D100	18.7"
D85	16.0"
D50	15.0"
D20	7.5"
D10	5.0"

Feeder Ditch Channel

The feeder ditch will be riprapped from Station 6+00 (i.e., 5+30 on main channel) to 4+00. The channel will be installed as described below:

Station 5+00 to 6+00:

The channel will consist of a trapezoidal ditch with a 3 foot bottom width, 1.4 foot depth, and 2/1 sideslopes. The riprap gradation is as follows:

D100	19.6"
D85	18.0"
D50	15.6"
D20	7.8"
D10	5.1"

A 9 inch deep, 2-inch minus gravel filter blanket will be placed under the graded riprap. The depth of the riprap will be 1.63 feet deep. The channel depth will be in addition to the depth of the riprap or the filter blanket.

Station 4+00 to 5+00:

This portion of the channel will be V shaped, 2 feet deep, and 8 feet wide at the top. A 9 inch filter blanket of minus 2 inch gravel will be covered with a riprap layer of the following size distribution.

D100	13.75
D85	12.00
D50	11.00
D20	5.5
D10	3.6

The three check dams described in the approved 10/10/85 Addendum will be reinstalled at Stations 3+80, 4+10 and 4+50.

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UMC 817.53 HYDROLOGIC BALANCE:
TRANSFER OF WELLS

Five of the six mine wells were plugged and reclaimed according to the permit. The sixth well was capped and the title was transferred to the landowner, the Utah Division of State Lands and Forestry. The well is identified as Well # WW-1 on Drawing 4050-5-1.

UMC 817.170 - .176 ROADS: CLASS III

The diversion road around the perimeter fence described in the September 18, 1989 amendment and the previously existing southwest extension of this road are being used by ranchers, woodcutters, and hunters on a regular basis. No reclamation of this road is proposed. The 550 feet of road which was replaced by the diversion road was reclaimed.