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DIVISION OF
OIL, GAS & MINING

WESTERN STATES MINERALS CORPORATION
J. B. KING MINE

"AMENDMENT TO MINING & RECLAMATION PLAN"

Submitted to

James W. Smith, Jr.
Coordinator of Mined Land Development
STATE OF UTAH, NATURAL RESOURCES & ENERGY
Division of Oil, Gas & Mining

By
COAL SYSTEMS, Inc.
Salt Lake City, Utah

February 2, 1983

COAL SYSTEMS, Inc.

CONSULTING ENGINEERS

P.O. BOX 17117
SALT LAKE CITY, UTAH 84117

L. G. MANWARING, P.E.
PRESIDENT

AREA CODE 801
261-4500

February 4, 1983

Mr. James W. Smith, Jr.
Coordinator, Mined Land Development
STATE OF UTAH
NATURAL RESOURCES & ENERGY
Division of Oil, Gas & Mining
4241 State Office Building
Salt Lake City, Utah 84114

Dear Mr. Smith: (Re: Our Job #4050)

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The current mine plan as submitted on March 20, 1981 indicates there will be no underground development waste as defined in the regulations; there were areas of surface spoil that were discussed in previous submittals. It should be noted that stability study of the reject pile has been started and will be finalized in late April or early May, 1983. It will address many of the concerns as outlined in "U.M.C. 784.19 - Underground Development Waste" because the reject pile will be the final storage area for surface spoil.

Discussion is offered in this submittal concerning the economic feasibility of returning the preparation plant reject material underground.

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Yours truly,

COAL SYSTEMS, Inc.

David A. Skidmore

David A. Skidmore
Mining Engineer

DAS/af

Enclosures: (7)

I, the undersigned, hereby certify that the material and information contained in this Application are complete and are correct to the best of my knowledge and belief.

WESTERN STATES MINERALS CORPORATION

By: Dallas L. Wolford

Dallas L. Wolford
(Attorney-in-Fact)

State of West Virgenia
County of Kanawha

Subscribed and sworn to and before me this 1st day of February, 1983.

R. L. Kuppenberg, Jr.

Notary Public for the State of
West Virginia

Residing at Charleston, W. Va

My Commission Expires: 2.20.93

INTRODUCTION

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- U.M.C. 784.19 - Underground Development Waste.
- U.M.C. 784.25 - Return of Coal Processing Waste to Underground.
- U.M.C. 784.17 - Prime Farmland.
- U.M.C. 785.19 - Alluvial Valley Floors.

AMENDMENT

I. U.M.C. 784.19 - UNDERGROUND DEVELOPMENT WASTE

A. In previous submittals (March, 1979, and March, 1981), an approved mining plan was described and will continue to be valid for the future (see pages 3-1 through 3-25 of the 3-20-81 submittal).

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- Underground Development Waste - In the current mine plans for the "I" Seam, no shafts or inclines are being planned that would generate waste material as defined by the regulations.

  Typically, these access structures are used when a seam cannot be readily accessed from the outcrop; consequently, they will not be needed for the J. B. King Mine plan.

- Excess Spoil Generated at Surface Areas - Excess spoil was generated at recently-constructed access portals (Map 3-2A, 3-2B and 3-6; 3-20-81 submittal). This material, which consists of broken, weathered sandstone, shale, and coal from the outcrop, will be removed and placed on the coal preparation plant reject pile. The detail for this procedure is outlined in the 3-20-81 submittal on page 3-38 (Removal of Surface Structures). This material, identified as "B.S.-No. 1 Borrow Sites for Cover Material Area" (Map 3-6), will be removed and disposed of during the second phase of final abandonment.

II. U.M.C. 784.25 - RETURN OF COAL PROCESSING WASTE TO UNDERGROUND

A. The amended mining and reclamation plan, as submitted on 3-20-81, does not address the possibility of injecting coal processing waste into underground caverns or rooms by one of the following methods:

- Mechanical
- Hydraulic
- Pneumatic

The backfilling methods have been under careful investigation by both government and private sectors as possible solutions for two areas of concern: 1) site specific limitations of waste disposal site; 2) uncontrollable environmental problems associated with coal processing waste. It should be noted the J. B. King Mine has neither of these conditions.

- Mechanical - Basically, the procedure is simply to load the plant reject material into long haul dump (diesel/electric) loaders or shuttle cars (diesel/electric) and move the material underground to a proper location. The final placement location must be secured for safe access and where no future retreat or second mining will take place.

  The costs of the mechanical backfilling at the J. B. King Mine may be as high as $9.70 per ton (1983 dollars) of reject (clean coal basis $2.43 per ton).

- Hydraulic - Requires considerable water and crushing in order to pump the reject material underground or to a point on the surface directly above the mined-out area.

  The costs of such a system at the J. B. King Mine would be as high as $10.10 per ton of reject material ($2.53 per ton, clean coal basis).

- Pneumatic - Again, this requires considerable crushing and investment. This method of disposal could cost as much as $15.92 per ton of reject ($3.98 per ton, clean coal basis).

The existing reject pile lends itself to be cost effective, controllable environmentally, and predictably safe.

The estimated cost for each ton of reject stored in the reject pile is $2.21 (0.55 cents per ton of clean coal).

The following table summarizes these findings:

	1983 $	
	Cost/Ton Reject	Cost/Ton C.C.
Mechanical	9.70 2/	2.43
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Base on:

R.O.M. Tons/Year = 312,500
Clean Coal Tons/Year = 250,000
Reject Tons/Year = 62,500

1/ Based on actual operating experience 1975-1980.
2/ Coal Mining & Processing, January, 1983, page 56.

The remote location of the J. B. King Mine requires careful management of all costs, direct and indirect, concerning the production of a competitive clean coal product. Trucking cost, employee access, water, and services are all considerable when compared to other mines that are not hampered by isolated site location.

In order to ensure the economic feasibility of the total J. B. King Mine project, it is recommended that coal preparation reject material not be considered for underground backfilling.

III. U.M.C. 784.17 - PRIME FARMLAND

A. Currently, study is underway to determine the extent and quality of prime farmland on the applicant's coal property known as the J. B. King Mine. This study is being conducted under the direction of Mr. John Schmidt, State Conservationist, Soil Conservation Service, Salt Lake City, Utah.

If the Soil Convervation Service report is complete by the submittal date of this amendment, it will be placed in the appendices; otherwise, it will be submitted at a later date.

Discussion with Mr. Schmidt indicates that the area cannot be classified as prime farmland because of the lack of surface irrigation.

IV. U.M.C. 785.19 - ALLUVIAL VALLEY FLOOR

A. Applicant's coal property is approximately 6,330 ft. MSL in elevation, and is situated on a ridge that separates the Dog Valley (elevation 6,250 ft.) from the Muddy Creek Valley (elevation 5,600 ft.).

- o Drainage - The Dog Valley drainage system is tributary to Ivie Creek (confluence 5,800 ft. MSL) which in turn is tributary to Muddy Creek (confluence 5,640 ft. MSL).

  The Dog Valley is rated as an intermittent stream which flows during spring runoff and periods of heavy precipitation. It flows from the southwest to the northeast and lies one-half mile to the west from the portals. Where the Dog Valley stream joins Ivie Creek is 2½ miles north of the portal, and where Ivie Creek joins Muddy Creek is five miles northeast of the portal.

The surface to be subsided by mining the "I" Seam is approximately 6,525 ft. MSL. The following table has been constructed to show vertical and horizontal relationships with known alluvial valley water flows.

	Elevation	J. B. King Subsided Surface	Difference in Elev.	Distance from J. B. King Portal
Dog Valley	6,250'	6,525	-275'	3/4 mi.
Dog Valley to Ivie Creek	5,800'	6,525'	-725	2½ mi.
Ivie Creek to Muddy Creek	5,640'	6,525'	-885	5 mi.

- Topography - The above table illustrates that the expected subsided surface at the J. B. King Mine will be from 275 ft. to 885 ft. above, and from 3/4 miles to 5 miles distant from any alluvial valley floors.
- Springs - After extensive hydrologic study, it has been determined there are no known seeps, springs, or irrigation water, that drains into the Dog Valley intermittent stream.
- Unconsolidated Stream-Laid Deposits - Alluvium deposits were not found on or near the proposed subsided surface.
- Agricultural Activities - Extensive discussion is available in the 3-20-81 submittal concerning land use (section IV) and soil resources (section VIII).

Considerable investigation has been conducted on the J. B. King Mine for economic purposes by L. G. Manwaring. His "Statement of Fact" is located in the appendices of this submittal.

It seems very unlikely the Division would conclude from the information offered in this and previous submittals that the J. B. King Mine is jeopardizing any alluvial valley water flows.

APPENDIX

United States
Department of
Agriculture

Soil
Conservation
Service

P. O. Box 11350
Salt Lake City, UT 84147

January 31, 1983

Mr. David A. Skidmore, Mining Engineer
Coal Systems, Inc.
P. O. Box 17117
Salt Lake City, UT 84117

Dear Mr. Skidmore:

We have reviewed soils maps covering the area for which you requested information concerning prime farmland. Our review indicates there are no prime farmlands in sec. 32, R. 6 E., T. 23 S. Emery County, Utah. The soils in this location are either too steep or contain appreciable amounts of rocks that removes them from the prime farmland category.

If we can be of further assistance, please call on us.

Sincerely,

Ferris Allgood acting

JOHN H. SCHMIDT
Acting State Conservationist

(Note: Orig. in
Coal Sys., Inc. file)

The Soil Conservation Service
is an agency of the
Department of Agriculture

STATEMENT OF FACT

I, Lewis G. Manwaring, Utah Professional Mining Engineer No. 04212-0958-0, of 5514 Brockway, Salt Lake City, Utah, 84117, state the following regarding the Western States Minerals Corporation coal property in southwestern Emery County, Utah, known as the J. B. King Mine:

J. B. KING PROPERTY

Legal Descrip.	Lease No.	Description	Acres
NE¼NE¼SE¼, NE¼	ML-17687	State Coal Lease	120
NE¼SE¼SW¼, SE¼	ML-18783	" " "	120
NE¼SE¼SW¼, SW¼	ML-19231	" " "	120
NW¼, SE¼	SL-062712	" " "	40
SW¼, NE¼	ML 1003	" " "	40
SE¼, NW¼ and N½NE¼, SW¼	365	Surface Rights Only	* 60

* Twenty-acre overlap of surface rights into N½NE¼, SW¼.

All the above are in Section 32, Township 23 South, Range 6 East, of the Salt Lake Meridian.

Between July, 1981 and September, 1982, I have made numerous trips to the site and have conducted, or directed the following activities:

- Surface reconnaissance of property corners.
- Aerial reconnaissance of property and location.
- Conducted numerous studies relating to topography, geologic structure, etc.
- Directed a hydrologic study.
- Reviewed in detail numerous private and governmental aerial photos of the area.
- Concluded a detailed mine plan.
- Concluded two detailed economic evaluations.

These studies resulted in numerous man hours between myself and other COAL SYSTEMS, Inc. employees, including a mining engineer, registered land surveyor, geological engineer, civil engineer, and hydrologist, all of whom have visited the mine site.

Collectively and individually we have determined the J. B. King Mine should not be a candidate for a classification of mining under or near an alluvial valley floor as defined by U.M.C. 785.19.

COAL SYSTEMS, INC.

By: L. G. Manwaring

L. G. Manwaring (President)

State of Utah
County of Salt Lake

Subscribed and sworn to and before me this 2nd day of February, 1983.

DANIEL L. STERN
NOTARY PUBLIC
Commission Expires November 6, 1985
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Notary Public for the State of Utah

Residing at Salt Lake County

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By: L. G. Manwaring

L. G. Manwaring (President)

State of Utah
County of Salt Lake

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NOTARY PUBLIC
Commission Expires November 6, 1985
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I, the undersigned, hereby certify that the material and information contained in this Application are complete and are correct to the best of my knowledge and belief.

WESTERN STATES MINERALS CORPORATION

By: Dallas L. Wolford

Dallas L. Wolford
(Attorney-in-Fact)

State of West Virginia
County of Kanawha.

Subscribed and sworn to and before me this 1ST day of February, 1983.

R. J. Kruppenberg

Notary Public for the State of
West Virginia

Residing at Charleston, W. Va.

My Commission Expires: 2-20-93

INTRODUCTION

Western States Minerals Corporation's Permit Application as submitted in March of 1979 has been determined to be administratively incomplete (State of Utah Natural Resources and Energy letter of December 6, 1982).

The March, 1979 application was prepared according to Title 40, Chapter 10, Utah Code Annotated 1953 as Amended, the Cooperative Agreement between the United States Department of Interior and the State of Utah, the Surface Mining Control and Reclamation Act (P.L. 95-87), and all regulations promulgated under those Acts affecting coal mining operations conducted in the state of Utah.

The following amends the original submittal as per "Regulations Pertaining to Surface Effect of Underground Coal Mining Activities:" Final Rules of the Utah Board and Division of Oil, Gas and Mining, promulgated under U.C.A. 40-10-1 et. seq., revised September 20, 1982. More specifically:

- U.M.C. 784.19 - Underground Development Waste.
- U.M.C. 784.25 - Return of Coal Processing Waste to Underground.
- U.M.C. 784.17 - Prime Farmland.
- U.M.C. 785.19 - Alluvial Valley Floors.

AMENDMENT

I. U.M.C. 784.19 - UNDERGROUND DEVELOPMENT WASTE

A. In previous submittals (March, 1979, and March, 1981), an approved mining plan was described and will continue to be valid for the future (see pages 3-1 through 3-25 of the 3-20-81 submittal).

The plan describes the portal system for entry into the "I" Seam coal bed as a "drift" (or direct access) mine.

- Underground Development Waste - In the current mine plans for the "I" Seam, no shafts or inclines are being planned that would generate waste material as defined by the regulations.

  Typically, these access structures are used when a seam cannot be readily accessed from the outcrop; consequently, they will not be needed for the J. B. King Mine plan.

- Excess Spoil Generated at Surface Areas - Excess spoil was generated at recently-constructed access portals (Map 3-2A, 3-2B and 3-6; 3-20-81 submittal). This material, which consists of broken, weathered sandstone, shale, and coal from the outcrop, will be removed and placed on the coal preparation plant reject pile. The detail for this procedure is outlined in the 3-20-81 submittal on page 3-38 (Removal of Surface Structures). This material, identified as "B.S.-No. 1 Borrow Sites for Cover Material Area" (Map 3-6), will be removed and disposed of during the second phase of final abandonment.

II. U.M.C. 784.25 - RETURN OF COAL PROCESSING WASTE TO UNDERGROUND

A. The amended mining and reclamation plan, as submitted on 3-20-81, does not address the possibility of injecting coal processing waste into underground caverns or rooms by one of the following methods:

- Mechanical
- Hydraulic
- Pneumatic

The backfilling methods have been under careful investigation by both government and private sectors as possible solutions for two areas of concern: 1) site specific limitations of waste disposal site; 2) uncontrollable environmental problems associated with coal processing waste. It should be noted the J. B. King Mine has neither of these conditions.

- Mechanical - Basically, the procedure is simply to load the plant reject material into long haul dump (diesel/electric) loaders or shuttle cars (diesel/electric) and move the material underground to a proper location. The final placement location must be secured for safe access and where no future retreat or second mining will take place.

  The costs of the mechanical backfilling at the J. B. King Mine may be as high as $9.70 per ton (1983 dollars) of reject (clean coal basis $2.43 per ton).

- Hydraulic - Requires considerable water and crushing in order to pump the reject material underground or to a point on the surface directly above the mined-out area.

  The costs of such a system at the J. B. King Mine would be as high as $10.10 per ton of reject material ($2.53 per ton, clean coal basis).

- Pneumatic - Again, this requires considerable crushing and investment. This method of disposal could cost as much as $15.92 per ton of reject ($3.98 per ton, clean coal basis).

The existing reject pile lends itself to be cost effective, controllable environmentally, and predictably safe.

The estimated cost for each ton of reject stored in the reject pile is $2.21 (0.55 cents per ton of clean coal).

The following table summarizes these findings:

	1983 $	
	Cost/Ton Reject	Cost/Ton C.C.
Mechanical	9.70 2/	2.43
Hydraulic	10.10 1/	2.53
Pneumatic	15.92 1/2/	3.98
Reject Pile	2.21 1/	0.55

Base on:

R.O.M. Tons/Year = 312,500
Clean Coal Tons/Year = 250,000
Reject Tons/Year = 62,500

1/ Based on actual operating experience 1975-1980.
2/ Coal Mining & Processing, January, 1983, page 56.

The remote location of the J. B. King Mine requires careful management of all costs, direct and indirect, concerning the production of a competitive clean coal product. Trucking cost, employee access, water, and services are all considerable when compared to other mines that are not hampered by isolated site location.

In order to ensure the economic feasibility of the total J. B. King Mine project, it is recommended that coal preparation reject material not be considered for underground backfilling.

III. U.M.C. 784.17 - PRIME FARMLAND

A. Currently, study is underway to determine the extent and quality of prime farmland on the applicant's coal property known as the J. B. King Mine. This study is being conducted under the direction of Mr. John Schmidt, State Conservationist, Soil Conservation Service, Salt Lake City, Utah.

If the Soil Convervation Service report is complete by the submittal date of this amendment, it will be placed in the appendices; otherwise, it will be submitted at a later date.

Discussion with Mr. Schmidt indicates that the area cannot be classified as prime farmland because of the lack of surface irrigation.

IV. U.M.C. 785.19 - ALLUVIAL VALLEY FLOOR

A. Applicant's coal property is approximately 6,330 ft. MSL in elevation, and is situated on a ridge that separates the Dog Valley (elevation 6,250 ft.) from the Muddy Creek Valley (elevation 5,600 ft.).

- Drainage - The Dog Valley drainage system is tributary to Ivie Creek (confluence 5,800 ft. MSL) which in turn is tributary to Muddy Creek (confluence 5,640 ft. MSL).

  The Dog Valley is rated as an intermittent stream which flows during spring runoff and periods of heavy precipitation. It flows from the southwest to the northeast and lies one-half mile to the west from the portals. Where the Dog Valley stream joins Ivie Creek is 2½ miles north of the portal, and where Ivie Creek joins Muddy Creek is five miles northeast of the portal.

The surface to be subsided by mining the "I" Seam is approximately 6,525 ft. MSL. The following table has been constructed to show vertical and horizontal relationships with known alluvial valley water flows.

	Elevation	J. B. King Subsided Surface	Difference in Elev.	Distance from J. B. King Portal
Dog Valley	6,250'	6,525	-275'	3/4 mi.
Dog Valley to Ivie Creek	5,800'	6,525'	-725	2½ mi.
Ivie Creek to Muddy Creek	5,640'	6,525'	-885	5 mi.

- Topography - The above table illustrates that the expected subsided surface at the J. B. King Mine will be from 275 ft. to 885 ft. above, and from 3/4 miles to 5 miles distant from any alluvial valley floors.
- Springs - After extensive hydrologic study, it has been determined there are no known seeps, springs, or irrigation water, that drains into the Dog Valley intermittent stream.
- Unconsolidated Stream-Laid Deposits - Alluvium deposits were not found on or near the proposed subsided surface.
- Agricultural Activities - Extensive discussion is available in the 3-20-81 submittal concerning land use (section IV) and soil resources (section VIII).

Considerable investigation has been conducted on the J. B. King Mine for economic purposes by L. G. Manwaring. His "Statement of Fact" is located in the appendices of this submittal.

It seems very unlikely the Division would conclude from the information offered in this and previous submittals that the J. B. King Mine is jeopardizing any alluvial valley water flows.

APPENDIX

United States
Department of
Agriculture

Soil
Conservation
Service

P. O. Box 11350
Salt Lake City, UT 84147

January 31, 1983

Mr. David A. Skidmore, Mining Engineer
Coal Systems, Inc.
P. O. Box 17117
Salt Lake City, UT 84117

Dear Mr. Skidmore:

We have reviewed soils maps covering the area for which you requested information concerning prime farmland. Our review indicates there are no prime farmlands in sec. 32, R. 6 E., T. 23 S. Emery County, Utah. The soils in this location are either too steep or contain appreciable amounts of rocks that removes them from the prime farmland category.

If we can be of further assistance, please call on us.

Sincerely,

Ferris Allgood acting

JOHN H. SCHMIDT
Acting State Conservationist

(Note: Orig. in
Coal Sys., Inc. file)

The Soil Conservation Service
is an agency of the
Department of Agriculture

STATEMENT OF FACT

I, Lewis G. Manwaring, Utah Professional Mining Engineer No. 04212-0958-0, of 5514 Brockway, Salt Lake City, Utah, 84117, state the following regarding the Western States Minerals Corporation coal property in southwestern Emery County, Utah, known as the J. B. King Mine:

J. B. KING PROPERTY

Legal Descrip.	Lease No.	Description	Acres
NE¼NE¼SE¼, NE¼	ML-17687	State Coal Lease	120
NE¼SE¼SW¼, SE¼	ML-18783	" " "	120
NE¼SE¼SW¼, SW¼	ML-19231	" " "	120
NW¼, SE¼	SL-062712	" " "	40
SW¼, NE¼	ML 1003	" " "	40
SE¼, NW¼ and N½NE¼, SW¼	365	Surface Rights Only	* 60

* Twenty-acre overlap of surface rights into N½NE¼, SW¼.

All the above are in Section 32, Township 23 South, Range 6 East, of the Salt Lake Meridian.

Between July, 1981 and September, 1982, I have made numerous trips to the site and have conducted, or directed the following activities:

- Surface reconnaissance of property corners.
- Aerial reconnaissance of property and location.
- Conducted numerous studies relating to topography, geologic structure, etc.
- Directed a hydrologic study.
- Reviewed in detail numerous private and governmental aerial photos of the area.
- Concluded a detailed mine plan.
- Concluded two detailed economic evaluations.

These studies resulted in numerous man hours between myself and other COAL SYSTEMS, Inc. employees, including a mining engineer, registered land surveyor, geological engineer, civil engineer, and hydrologist, all of whom have visited the mine site.

Collectively and individually we have determined the J. B. King Mine should not be a candidate for a classification of mining under or near an alluvial valley floor as defined by U.M.C. 785.19.

COAL SYSTEMS, INC.

By: L. G. Manwaring

L. G. Manwaring (President)

State of Utah
County of Salt Lake

Subscribed and sworn to and before me this 2nd day of February, 1983.

DANIEL L. STERN
NOTARY PUBLIC
Commission Expires November 6 1985
STATE OF UTAH

Notary Public for the State of Utah

Residing at Salt Lake County