United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Farmington Field Office
1235 La Plata Highway, Suite A
Farmington, New Mexico 87401

IN REPLY REFER TO:
1617 (07500)

Dear Reader:

The attached document is the Decision Record for the Proposed Coal Leasing Area Resource Management Plan (RMP) Amendment to the 1988 Farmington Resource Management Plan.

The RMP amendment was prepared in response to the filing of a Lease by Application (LBA) by San Juan Coal Company. The application was filed in the New Mexico State Office of the Bureau of Land Management on July 29, 1997. Approval of this RMP amendment makes approximately 80 to 110 million tons of coal available for a competitive lease.

A scoping meeting on the proposed amendment was held on October 21, 1997. The proposed amendment and environmental assessment were distributed for public comment in April of 1998. A public meeting to discuss the proposal and answer questions on it was conducted on May 6, 1998.

This Decision Record serves as the final step in the RMP Amendment process and the first step in the implementation process.

The Farmington Field Office would like to extend our appreciation to all constituents who participated in the planning process. The success of our land management efforts depends to a great extent on input received from the public.

Sincerely

for
Lee Otteni
Field Office Manager

San Juan Coal Co. Exhibit No. 70
Before the Secretary, EMNRD
Hearing Dates: February 10-11, 2003

Coal Leasing Area
Resource Management Plan Amendment
Decision Record

Introduction

This document records the decision of the Bureau of Land Management (BLM), Farmington Field Office (FF0) regarding the proposed leasing of coal adjacent to San Juan Coal Company's (SJCC) existing coal lease (NM 28093). The area involved includes approximately 4,480 acres of surface and mineral estate in San Juan County, New Mexico.

Decisions

Coal Leasing Suitability

Twenty criteria were used to assess the unsuitability for all or certain...methods of coal mining. Of the 20 criteria, criteria number two is the only criteria that applies. It states "Federal lands that are within rights-of-way or easements or within surface leases for residential, commercial, industrial, or other public purposes, on federally owned surface shall be considered unsuitable" [43 Code of Federal Regulations (CFR) 3461.5 (b)(1)].

Several (five) exceptions were considered after the application of criteria 2 resulted in a potentially unsuitable finding for the proposed leasing and mining of coal. The exceptions were:

> "(i)...the coal development (e.g. under ground mining) will not interfere with the purpose of the right-of-way or easement; or
>
> (ii) the right-of-way or easement was granted for mining purposes; or
>
> (iii) the right-of-way easement was issued for a purpose for which it is not being used; or
>
> (iv) the parties involved in the right-of-way or easement agree, in writing, to leasing; or
>
> (v) it is impractical to exclude such areas due to the location of coal and method of mining and such areas can be protected through appropriate stipulations".

Although exception (i) refers to an underground mining operation, subsidence of approximately eight to 10 feet could result in leaning poles and changes in the tension of power lines. Based on these reasons, exceptions (iv) and (v) were applied.

Due to the location of the coal and the proposed method of mining, it is impractical to exclude the areas encumbered by rights-of-way. San Juan Coal Company has agreed to pay for the necessary relocation of any existing rights-of-way (see Appendix A). This should provide adequate protection for rights-of-way.

Public Service Company of New Mexico (PNM) owns and operates the biggest (345 Kv) powerline in the proposed coal lease area. A letter was sent from the company in which it was stated that there were no objections to SJCC moving their line, if all costs and necessary permits are obtained and a suitable corridor is identified.

A number of the right-of-ways are located along the south boundary of the proposed coal lease. Depending on the (1) cost of moving these lines and (2) ability of SJCC and BLM staff to find new areas to move them to, SJCC may leave an undisturbed corridor along the south boundary line.

Based on the analysis in the plan amendment and meetings with company representatives, the acreage for which SJCC submitted an application, has been determined to be suitable for coal leasing.

Plan Amendment

The decision is hereby made to approve the Proposed Coal Leasing Area Resource Management Plan Amendment with the exception of Appendix A [Protocol for the Mediation of Adverse Impacts on Oil and Gas Revenues (Protocol)].

Based on comments received on the amendment, several changes were made in the Protocol. Appendix A, with changes, is approved and printed with this Decision Record.

With the potential for future coal development, a change was made in the current oil and gas leasing designation. The designation was 'open to leasing under standard terms and conditions'. The leasing designation has been changed to 'no leasing'.

This change will remain in effect until (1) coal mining has been completed in approximately 2024 or (2) the company has completed mining, use of surface facilities and released specific areas for future leasing. An agreement will need to be reached with the mining company (SJCC), Bureau staff and companies interested in future oil and gas leasing.

Except for coal and oil and gas related activities, the coal lease area will be closed to the granting of future rights-of-way. This area will also be closed to off highway vehicle (OHV) use and the disposal of salable (sand and gravel) minerals. Again, these closures will remain in effect until mining has been completed or the company releases areas for other uses.

The authority to amend the RMP is contained in the Federal Land Policy and Management Act (FLPMA) of 1976. The regulations, written to implement this Act, are in 43 CFR subpart 1610. The decision made on the coal lease amendment changes and/or resolves issues identified for this planning effort. The issues were:

Issue 1: Determine if coal resources are present in economical quantities.

Issue 2: Identify existing and future management constraints (land use policy, objectives and actions) necessary to lease and develop coal adjacent to SJCCs two existing leases.

Issue 3: Determine if existing management constraints by other resource programs and uses conflict with coal leasing and development.

Issue 4: Determine if the current "open to oil and gas leasing under standard terms and conditions" leasing category needs to be changed to (1) leasing with a controlled surface use leasing stipulation or (2) closed to future leasing for the area proposed for coal leasing.

Issue 5: Determine if the existing off-highway vehicle (OHV) designation needs to be changed for the proposed coal lease area.

Issue 6: Determine if the existing right-of-way placement guidelines need to be changed to (1) restrict activities to existing disturbances, (2) preclude new right-of-way routes through the proposed coal lease area, and (3) relocate existing right-of-way facilities outside of the proposed coal lease area.

Public Involvement

The 30 day public comment period on the Proposed Coal Leasing Area RMP Amendment/Environmental Assessment was from April 27, 1998 through May 26, 1998. According to the Bureau's land use planning requirements, the Governor of New Mexico was given a 60 day review period. Four letters were received during the 30 day comment period. The letter from the Governor of New Mexico recommended that the Bureau proceed with the competitive coal lease sale. A letter was received from PNM and two were from oil and gas lease holders.

Consistency/Protest Resolution

One of the letters, submitted by an oil and gas lessee, was sent to the Director of the Interior.

The lessee protested the proposed leasing and mining of federal coal. This letter was handled as a protest to the RMP amendment by Washington Office BLM staff. The protest was dismissed, because the letter did not contain any new information or data that would lead to the conclusion that an error had been made in the proposed planning amendment for leasing coal.

A number of recommendations, for making changes to Appendix A, were made in the second oil and gas lessee's letter. The protocols in Appendix A (Protocols for the Mediation of Adverse Impacts on Oil and Gas Revenues) were modified to state that they also applied to fee (private) oil and gas leases in the coal lease area. Other changes clarified the point that royalty and/or overriding royalty interest holders will be compensated. Additional clarification was made on the oil and gas wells that SJCC would pay to have plugged.

The second paragraph on page 10, under Current/Future Oil and Gas Operations, was changed to read as follows:

> "Future well development, on existing oil and gas leases, would be coordinated with Bureau staff, the oil and gas operator and the mining company. Actions that would be considered for new Applications for Permit to Drill (APD) are (1) approval, (2) suspension of lease terms, if requested by the oil and gas operator and determined appropriate by the Bureau, (3) directional drilling of formations and (4) a phase-in of drilling, as mining is completed."

No inconsistencies with the plans, programs and policies of other federal agencies or state and local governments were identified during the RMP Amendment process, including the Governor's Consistency Review. The Office of Surface Mining, Reclamation and Enforcement staff in Denver, Colorado have reviewed the Proposed Coal Leasing Area RMP Amendment/Environmental Assessment, as a cooperating agency.

Public Availability of this Document

Copies of the Proposed Coal Leasing Area RMP Amendment/Environmental Assessment are available from:

Bureau of Land Management
1235 La Plata Hwy, Suite A
Farmington, New Mexico

Questions may also be directed to Mr. Bob Moore at (505) 599-6311.

Conclusion

This Decision Record constitutes the final Bureau Action on approving the Proposed Coal Leasing Area Amendment to the Farmington Resource Management Plan. Based upon the review conducted in the environmental analysis accompanying the Proposed Amendment, it has been found that there are no significant impacts to the environment and therefore an environmental impact statement is not required. Any person adversely affected by a decision of the Bureau Officer in implementing some portion of the Resource Management Plan may appeal such an action to the Interior Board of Land Appeals pursuant to 43 CFR subpart 4.400 at the time the action is proposed for implementation.

9/17/98
Date

for Lee Otteni,
Farmington Field Office Manager

9/24/98
Date

for Michelle Chavez
State Director, New Mexico State Office

PROTOCOL FOR THE MEDIATION OF ADVERSE IMPACTS ON OIL AND GAS REVENUES

This protocol sets forth the commitments made by the San Juan Coal Company (SJCC) regarding potential impacts which its underground coal mining operations may have on oil and gas production, gathering or transportation. This protocol is entered into for the purpose of documenting SJCC's proposed actions to mitigate adverse impacts and allow the Bureau of Land Management to analyze impacts of leasing underground coal reserves in its land use planning process.

Affected Areas

The lands to be affected by mining which are subject to the terms of this Protocol are located in San Juan County, New Mexico and are described as follows:

Township 30 North, Range 14 West, NMPM

Section 17:	All
Section 18:	All
Section 19:	All
Section 20:	All
Section 29:	All
Section 30:	All
Section 31:	All

Township 30 North, Range 15 West, NMPM

Section 13:	S1/2
Section 14:	S1/2
Section 23:	All
Section 24:	All
Section 25:	All
Section 26:	All
Section 35:	All

General Principles

SJCC will conduct its operations in a manner consistent with the legally mandated principles of multiple use of federal lands and mineral reserves. SJCC will use its best efforts to achieve maximum economic recovery of federal resources. Valid existing rights under federal oil and gas leases as well as the 40 acre private oil and gas lease located on the NW 1/4 N W 1/4 of Section 18, which predate SJCC's coal leases, will be honored.

Commitments

1) SJCC will take all reasonable steps to avoid adverse impacts on oil and gas resource production, gathering and transportation facilities. These steps may include, but are not limited to, mining around existing well bores, moving existing facilities, and relocating power lines, pipelines or roads which may be affected by subsidence. Costs for avoidance measures for facilities with rights senior to SJCC will be paid by SJCC.

2) Adverse impacts will be considered to have occurred when a demonstrable loss of revenue from the facility occurs If SJCC's coal mining activities adversely impact an oil and gas producer with rights which are senior to SJCC, then steps to mitigate those impacts will be taken as follows:

    a) If the adverse impacts can best be mitigated by paying damages for decreased production, SJCC will pay fair market value for appropriate mitigation measures.

    b) If the adverse impact requires that production permanently cease, SJCC will compensate the producer for the fair market value of lost production. Fair market value will be the projected future net cash flow, i.e., Gross projected revenues, less applicable royalties and over riding royalties, taxes and cost of production, gathering, transporting, processing and shrinkage, discounted at a rate equal to the prevailing prime interest rate during the prior month that the analysis is performed plus two percentage points. The projected net cash flow will be determined using the following parameters:

        i) Working and net revenue interest, operating costs, gas analysis, and run and or settlement statements supplied by the producer.

        ii) A gas price equal to the higher of the previous twelve month Inside FERC index for the San Juan Basin or the average one year contract available from three gas marketers. All prices will be adjusted for the current rates for field transportation, gathering, processing and shrinkage.

        iii) An oil price equal to the higher of the previous twelve month average oil price received for like gravity oil in the San Juan Basin or the average of a one year contract available for at least three crude oil purchasers. The price used will be adjusted for any standard deductions.

iv) Produce prices will be escalated at three (3) percent and direct operating expenses will be escalated at four (4) percent.

v) SJCC will be authorized to audit and confirm all data and information provided under paragraphs 2(b)(i)(ii)(iii) and (iv).

vi) If it is legally determined that a payment to the royalty and/or over riding royalty interest holder, or severance tax to the state of New Mexico is required as a result of the cessation of production, a payment will be based on the projections in 2b discounted at a rate equal to the prevailing prime interest rate during the prior month that the analysis is performed plus two percentage points.

c) In the event SJCC and the oil and gas interest holder do not agree to a value for mitigation using the factors described in paragraph 2 (a) and (b), then the parties will enter into binding arbitration using a mutually agreeable neutral third party to resolve the dispute.

d) SJCC shall pay for the direct, actual costs to reroute power lines, pipe lines or roads with senior rights to SJCC where necessary to avoid adverse impacts.

3) SJCC will be responsible for paying for plugging wells which are subject to this protocol that must be mined through in the course of its mining operations. Said wells must have been completed in accordance with BLM regulations and must have been determined to be capable of producing in paying quantities per BLM guidelines.

This Protocol is submitted to the Bureau of Land Management on this 10th day of September 1998.

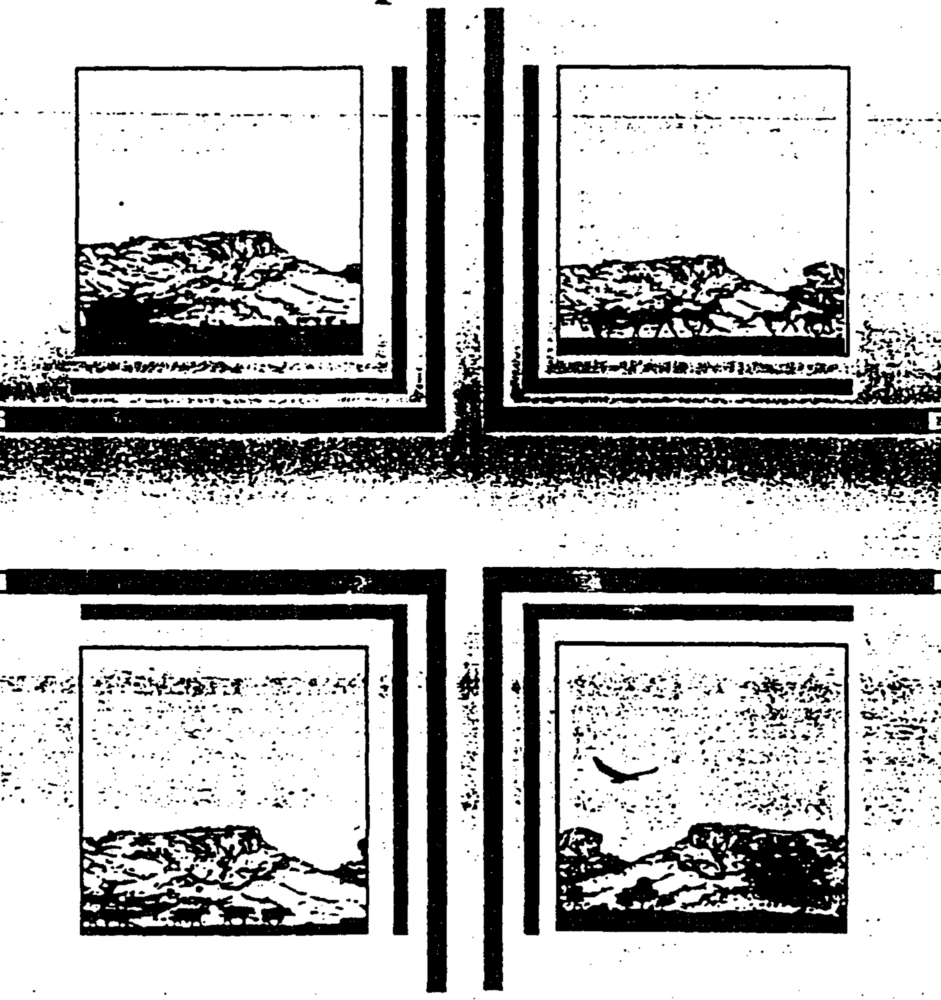
SAN JUAN COAL COMPANY

By: Chris S. Ellefson

Proposed

Coal Leasing Area
RMP Amendment/ Environmental Assessment

April 1998



United States Department of the Interior
Bureau of Land Management
Farmington Field Office

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Farmington Field Office
1235 La Plata Highway, Suite A
Farmington, New Mexico 87401

IN REPLY REFER TO:

April 21, 1998

Dear Reader:

Enclosed for your review is a proposed amendment to the Farmington Field Office's Resource Management Plan (RMP). The information and analysis in this document is concerned with the proposed leasing of coal adjacent to San Juan Coal Company's (SJCC) "Deep Lease". Work on the amendment began last fall. A public hearing was held October 7, 1997 to solicit input from interested public and concerned individuals and companies.

An environmental assessment (EA) has been prepared as part of this document, The EA is used to analyze the impacts of coal leasing (and mining) to the resources in the proposed leasing area. The RMP amendment/EA has been prepared in response to the filing of a Lease by Application (LBA) by San Juan Coal Company. This application was filed in BLMs New Mexico State Office on July 29, 1997. The decision, for amending the current RMP, is consistent with the guidance mandated by the Federal Land Policy and Management Act of 1976 and Title 43 Code of Federal Regulations, Part 1610.5-5.

You are encouraged to review this RMP amendment/EA and provide comments to Farmington Office staff. There will be a 30 day review and comment period. The comment period begins on April 27 and ends May 26, 1998. Comment letters need to be sent to the following address. A public hearing/public meeting will be held on May 6, 1998 at 7:00 p.m. in the BLM Office.

BLM Farmington Field Office
Attn: Robert Moore
1235 La Plata Highway, Suite A
Farmington, New Mexico 87401

Comments received by the May 26th date will be considered in the decision making process. This process follows the evaluation of public comments and/or resolution of any protests. A final decision will be made and issued in a Decision Record.

Any part of the proposed plan may be protested. Protests must be (1) post marked by May 26, 1998 and (2) sent to the following address.

Director (W. O. 210)
Bureau of Land Management
Attention: Brenda Williams
1849 C Street NW
Washington, D.C. 20240

Table of Contents

INTRODUCTION

Introduction

Location

The Farmington Field Office of the Bureau of Land Management (BLM) is located in northwest New Mexico. It encompasses approximately 5 million acres of varied land status (public, private, state, Indian allotted, and Tribal Trust). Of these, approximately 1.5 million acres of surface are federal public lands and 2.26 million acres are federal minerals administered by the BLM in the Farmington Office. The San Juan Coal Company's San Juan Mine is located in northwestern San Juan County, New Mexico, on the western side of the San Juan Basin (see Map 1).

Significant federal, Indian and private coal reserves are administered by the Farmington Office. There are currently four mines operating within the FO boundaries. Three of them are operating (at least partially) on federal reserves. One is operating totally on the Navajo Reservation. Approximately eight million tons of federal and private coal are mined each year.

Purpose, Need and Scope of Document

During the preparation of the 1988 *Farmington Resource Management Plan* (USDI, BLM 1988), the Bureau of Land Management, Farmington Office (FO) staff (and the public) identified seven planning issues that were addressed. Under issue number four (*Coal Leasing Suitability Assessment*), coal resources were identified that were suitable for coal leasing consideration.

Competitive leasing, of coal tracts in the Farmington Office boundaries, were addressed in detail in the *San Juan River Regional Coal EIS* (USDI, BLM 1984). In that document, 39 tracts were brought forward for future (1) leasing consideration in a land use planning document and (2) coal sales. In the planning process, only two questions were considered under the coal issue. These were (a) are there any areas which should be considered for coal leasing that were not identified by previous planning efforts and (b) after application of the four land use planning screens, which tracts previously identified under round one of the coal program should be carried forward for further consideration for leasing.

No new tracts were identified (by BLM or industry) to be added to the list developed during the *San Juan Regional Coal EIS*. Application of the four land use planning screens resulted in carrying forward 17 tracts in the Farmington RMP and dropping the other 22 tracts.

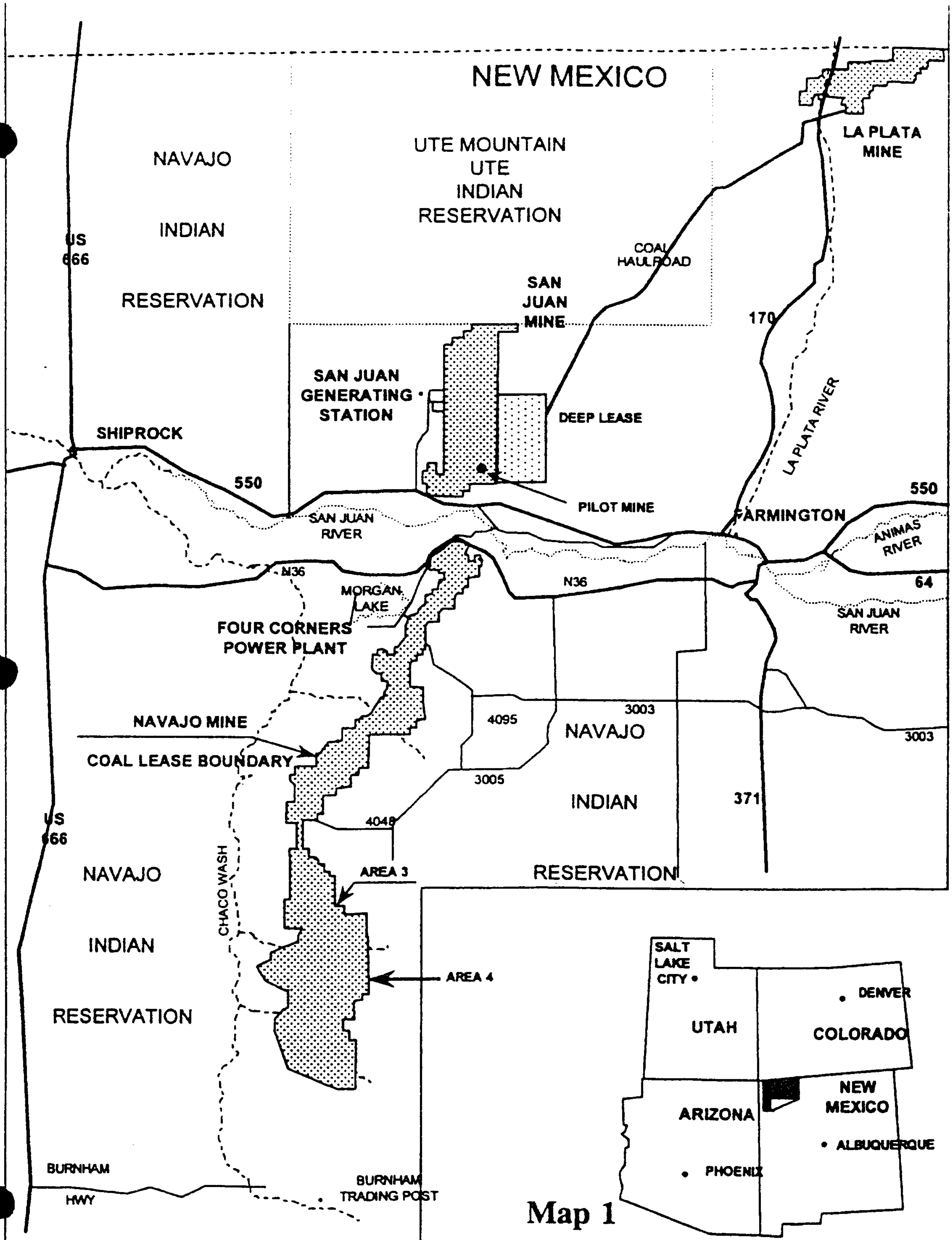
The coal issues developed during the preparation of the 1988 RMP were concerned only with the processing of future competitive coal leases for coal located in the southern half of Farmington's BLM boundaries. As a result of the emphasis placed on future competitive leases, coal found in areas adjacent to existing operations was not addressed at that time.

On July 29, 1997, the San Juan Coal Company (SJCC) filed a Lease by Application (LBA) with BLMs New Mexico State Office (NMSO) in Santa Fe, New Mexico. SJCC is interested in acquiring a lease for the coal located east of the San Juan Mine and SJCCs "Deep Lease Area" (see Map 2). A review of the Farmington BLM coal leasing policy, in the Farmington RMP, identified the need to amend the RMP to consider coal leasing in the applied for area.

The purpose of this document is to amend the existing RMP to address the need for additional federal coal leasing adjacent to the San Juan Mine.

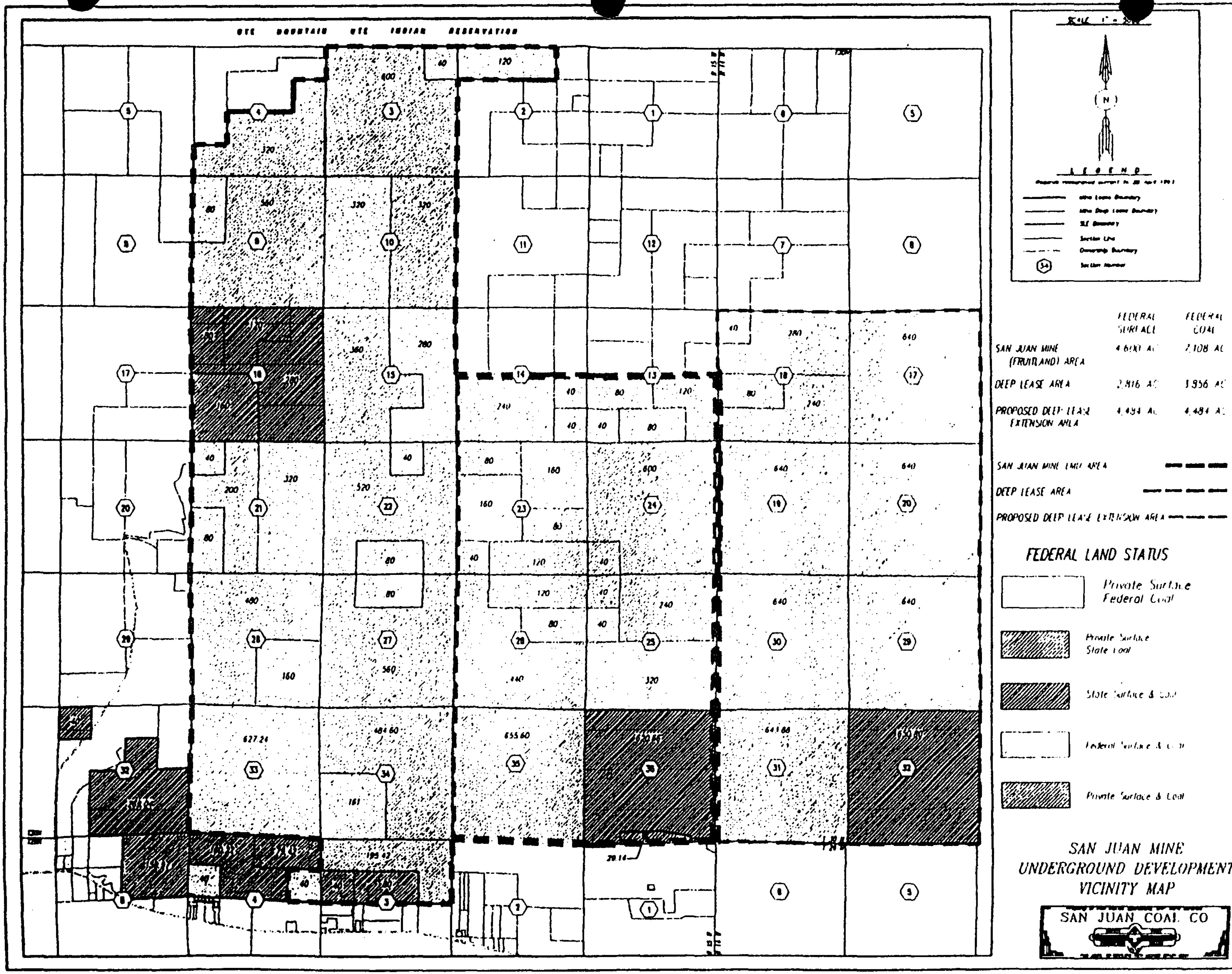
Planning Process and Conformance

Areas proposed to be suitable for coal leasing must be considered and analyzed in the Bureau's land use planning process. A part of the RMP is its amendments. Three amendments have been approved since completion of the



Map 1

General Location Map


UTE MOUNTAIN UTE INDIAN RESERVATION
LEGEND
Section Number
FEDERAL SURFACE
FEDERAL COAL
SAN JUAN MINE (FRUITLAND) AREA 4,600 AC 2,108 AC
DEEP LEASE AREA 2,816 AC 1,856 AC
PROPOSED DEEP LEASE EXTENSION AREA 4,484 AC 4,484 AC
SAN JUAN MINE LMU AREA
DEEP LEASE AREA
PROPOSED DEEP LEASE EXTENSION AREA
FEDERAL LAND STATUS
Private Surface Federal Coal
Private Surface State Coal
State Surface & Coal
Federal Surface & Coal
Private Surface & Coal
SAN JUAN MINE
UNDERGROUND DEVELOPMENT
VICINITY MAP
SAN JUAN COAL CO

Map 2

RMP in 1988. They are (1) the *Albuquerque District Resource Management Plan Amendment/Final Environmental Impact Statement Oil and Gas Leasing and Development*, December 1991 (USDI, BLM 1991) for oil and gas leasing and stipulations; (2) the *Farmington Proposed Resource Management Plan Amendment/Environmental Assessment, Off-Highway Vehicle Use*, April 1995 (USDI, BLM 1995a); and (3) the *Glade Run Trail System Off-Highway Vehicle Farmington Resource Management Plan Amendment/Environmental Assessment*, September 1995 (USDI, BLM 1995b).

The leasing of coal resources, adjacent to coal mines, was not addressed in the 1988 RMP. Before coal can be made available for sale, a determination must be made on the suitability of leasing coal in a land use planning document. With the submission of SJCCs application to lease coal, a plan amendment is needed to (1) apply the coal leasing suitability criteria and (2) determine the effects of coal development on other resource land use policies, programs and decisions.

The decision to amend the current RMP is consistent with the guidance mandated by the Federal Land Policy and Management Act (FLPMA) of 1976, which states "The Secretary shall, with public involvement and consistent with the terms and conditions of this Act, develop, maintain, and, when appropriate, revise land use plans which provide by tracts or areas for the use of public lands regardless of whether such lands previously had been classified, withdrawn, set aside, or otherwise designated for one or more uses." [90 Stat 2743, Sec. 202(a)].

Further guidance and authority is contained under Title 43 of the Code of Federal Regulations (CFR), Subpart 1610.5-5 - Amendment, which states "...a resource management plan may be changed through amendment. An amendment shall be initiated by the need to consider monitoring and evaluation findings, new data, new or revised policy, a change in circumstances or proposed actions that may result in a change in the scope of resource uses or a change in the terms, conditions and decisions of the approved plan."

Plan Consistency

The BLMs planning regulations require RMPs be developed to insure "...consistency with officially approved or adopted resource related plans, and the policies and procedures contained therein, of other federal agencies, state and local governments, and Indian tribes, so long as the guidance and resource management plans are also consistent with the purpose, policies and programs of federal laws and regulations applicable to public lands..." (43 CFR 1610.3-20). There is no county planning that would preclude the leasing of federal coal.

Planning Issues and Criteria

An issue is an opportunity, conflict, or problem regarding the use or management of public lands and resources. The issues were identified by BLM resource specialists and through discussions with other agencies and concerned citizens. Planning criteria are the standards, rules, and measures used in collecting data and formulating plan alternatives; they guide final plan selection. Planning criteria are taken from appropriate laws and regulations, guidance found in BLM manuals and directives, and concerns expressed by the public and other agencies. The BLM planning regulations in 43 CFR Part 1600 equate land use planning with problem solving and issue resolution. Not all problems can be resolved through land use planning. Some may require changes in policy, budget or law.

Issue 1: Determine if coal resources are present in economical quantities.

The criteria for issue 1 are based on (1) coal resource data including BTU and sulfur content and estimated recoverable reserves, (2) depth, thickness, continuity, uniformity of coal bed and overburden characteristics, (3) processing and transportation costs, (4) markets and (5) coal unsuitability criterion number 2 in 43 CFR 3461.5.

Issue 2: Identify existing and future management constraints (land use policy, objectives and actions) necessary to lease and develop coal adjacent to SJCCs two existing leases.

PLAN ALTERNATIVES

Proposed Action

The Bureau is proposing to amend the 1988 Farmington RMP to (1) determine the suitability of leasing coal next to an existing coal mine and leases, (2) determine the effects of coal development on other resource land use policies, programs and decisions and (3) change the OHV designation in the area proposed for coal leasing. The Bureau is also proposing to change the 1991 oil and gas amendment to change the leasing and development category for federal oil and gas in the proposed lease area. The legal location, of the coal resources being considered for leasing, are listed below:

Township 30 North, Range 14 West, N.M.P.M.

Sec. 17:	All
Sec. 18:	All
Sec. 19:	All
Sec. 20:	All
Sec. 29:	All
Sec. 30:	All
Sec. 31:	N/2,N/2S2, and Lot 1 (41.70 acres), Lot 2 (41.21 acres), Lot 3 (40.73 acres), Lot 4 (40.24 acres)

containing 4,483.88 acres (more or less).

The coal seam that will be mined is the No. 8 seam in the Fruitland (coal) Formation. The seam ranges in thickness from 10 to 13 feet with a BTU/lb. of 10,050. In comparing the thickness of the Fruitland coal from well bores, the seam is assumed to be fairly uniform and continuous throughout the proposed lease area. The estimated reserves in the proposed lease area range from 80 to 110 million tons of coal. Overburden varies from 600 to 1,200 feet in thickness.

Longwall Mining Method

Because of the depth of the coal, the anticipated method of mining is by an underground, longwall process. A simple way of explaining this process is that it is similar to a butcher slicing meat, each pass takes a small slice off.

The longwall system has essentially four main components (1) a shearer, (2) armored face conveyor (AFC), (3) stage loader and (4) roof supports. A typical long-wall operation will mine coal blocks seven to eight hundred feet in width and one to two miles long. Productivity can exceed 20,000 tons per day.

The shearer is the machine that cuts the coal. It is typically a long box type structure housing electric and/or hydraulic motors, with a moving (ranging) arm on one or both ends. The arm supports a rotating cutting drum designed to break the coal and push it toward the AFC. An operator controls the shearer via remote control.

The AFC may be thought of as the backbone of the longwall system. It provides a platform for the shearer to traverse the width of the face cutting coal. Large motors, power sprockets at either end of the AFC, move the chain which rides on the steel plate (deck). The coal then is dragged along, rather than carried by the conveyor. The AFC discharges onto the stage loader.

The stage loader usually has a breaker to reduce the size of the coal and provides a means of transferring the coal to a conventional conveyor for transport out of the mine.

The normal mining progression involves the shearer slicing a three to four foot web of coal the width of the face, with the AFC and supports moving up to position for the next pass. The large open area behind the supports eventually caves in. The supports are usually enclosed at the back protecting the miners and face equipment.

Coal Development In The Proposed Lease Area

The mining of coal would proceed from SJCCs current surface mining operation at their Juniper Pit. Access to the underground mine would be by drifts, shafts or inclines which intercept the No. 8 seam, where a highwall is not available.

Underground gate roads would be driven using continuous miners from the surface highwall to the east. Panels would be developed to the full extent of the leased mineable reserve seam, a distance of approximately four miles. Approximately two of the four miles are in the proposed lease area.

The longwall mining method results in the removal of coal in long, narrow strips. As a result of this mining method, large, long blocks of coal (20,000 by 800 feet) will be mined before moving to the next block of coal.

Because of the need to provide support or control of the work area, one to two feet of coal would be left in both the ceiling and floor. Surface subsidence is expected to be gradual and up to approximately 80 percent of the mined coal seam thickness. Maximum subsidence is expected to be approximately eight to 10 feet.

Approximately six to seven million tons would be mined annually. Mining is expected to begin in 2000 at the southeast corner of the proposed lease area (see Map 3). The long blocks described above, would be mined from east to west, with the operation moving from the south toward the north boundary. In 2013 the operation is planned to be moved to the northeast corner of the lease. Mining operations would then differ only in the direction mining will proceed, which would be from the north toward the south boundary (see Map 3). Mining is expected to be completed on the proposed lease area about 2024.

According to SJCCs application, they are proposing to mine the coal in this area, as an extension of their current leases (San Juan Mine and Deep Lease). Coal resources are currently being mined in a surface mining operation. The San Juan Generating Station (SJGS) is located northwest of the San Juan Mine (see Map 1). It is anticipated SJGS would purchase all of the coal produced. Coal will be hauled to this plant over existing coal haul roads. As a result, transportation costs should be low. Wells (2) located in the south half of section 31 may not be affected by mining, if they are close to or in a right-of-way corridor located along the south boundary of the proposed lease area. Because of the number of lines (pipe and power lines), the mining company may avoid mining immediately adjacent to the south boundary line.

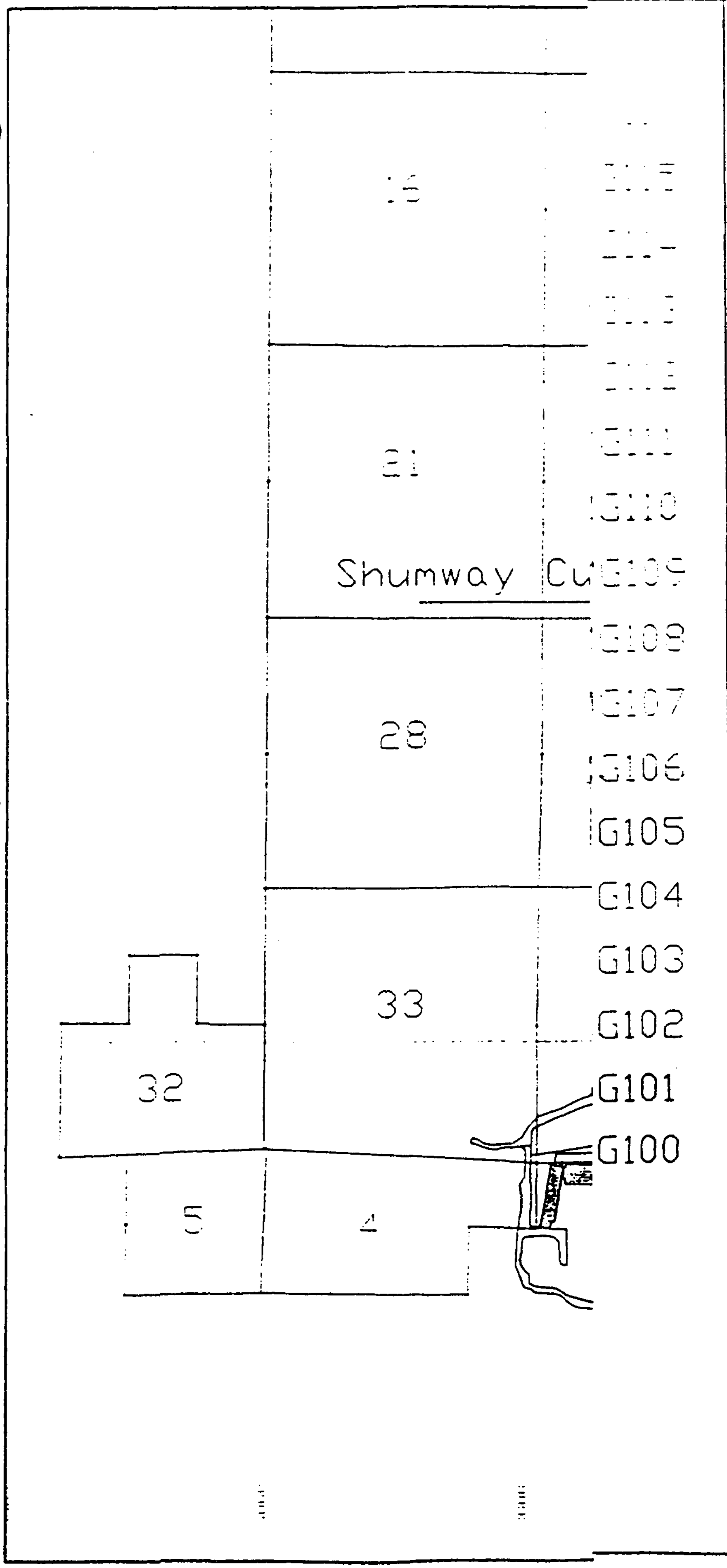
Facilities constructed on the proposed lease area would be limited to vent shafts, low voltage power lines (69 Kv) and service roads. These facilities would be located to avoid cultural sites. The south boundary of the proposed lease area would be fenced. Fences would not be installed around the rest of the proposed lease area or most surface facilities.

Coal Leasing Suitability

Of the 20 criteria used to assess lands unsuitable for all or certain stipulated methods of coal mining, criteria number two is the only criteria that would apply to this underground mine. Under this criteria [43 CFR 3461.5 (b)(1)], "Federal lands that are within rights-of-way or easements or within surface leases for residential, commercial, industrial, or other public purposes, on federally owned surface shall be considered unsuitable."

There are several exceptions which are "(i)...the coal development (e.g., underground mining) will not interfere with the purpose of the right-of-way or easement; or (ii) The right-of-way or easement was granted for mining purposes; or (iii) The right-of-way or easement was issued for a purpose for which it is not being used; or (iv) The parties involved in the right-of-way or easement agree, in writing, to leasing; or (v) It is impractical to exclude such areas due to the location of coal and method of mining and such areas can be protected through appropriate stipulations".

Although exception (i) references an underground mining operation, subsidence of approximately eight to 10 feet could result in leaning poles and changes in the tension of lines. For that reason, exceptions (iv) and/or (v) would be required before a final determination is made that lands are suitable for coal



Map 3
Mining Sequence

mining. Under exception (iv), rights-of-way permit holders would have to agree, in writing, to the leasing and mining of coal in the proposed lease area. Under exception (v), rights-of-way would be protected through appropriate stipulations (i.e., moving powerlines, new construction of pipeline ties, etc)(see Appendix A).

RMP Changes in Resource Programs and Uses

With the addition of a new resource use, there would be a shift in the emphasis of the other resource uses in the proposed leasing area. Because of the size of the area proposed for underground mining, coal development would become the primary resource use in the proposed leasing area. The emphasis of other, existing resource uses would change. The ranking (or emphasis) of the other resources are presented for each resource component listed below. Additionally, prior and proposed resource management decisions are presented for each resource.

Oil and Gas Development

The proposed coal lease area is leased for oil and gas development. Oil and gas resources are identified as a primary resource use. This determination is based on the number of wells and related facilities in the area.

Planning Changes

The proposed leasing of coal does not change RMP amendment program policies and decisions on existing oil and gas leases, particularly those held by production (one producing well). Prior existing rights remain in effect for all operators and lease holders.

The only change to the 1991 amendment is to change the area, which is presently open to leasing under standard terms and conditions, to a no leasing area. Should any of the existing oil and gas leases expire, they would not be reissued until coal mining is completed.

Under this change, there would be no future leasing of oil and gas resources until (1) all mining is completed in approximately 2024 or (2) the company has completed mining, use of surface facilities and released specific areas for leasing. An agreement would need to be reached with the mining company, Bureau staff and companies interested in future leasing.

Current/Future Oil and Gas Operations

Any changes in current oil and gas operations and facilities may include but are not limited to (1) plugging and abandoning (P&A) producing and abandoned Dakota or Gallup/Dakota wells, (2) the redrilling of these wells after mining has progressed past the well location, (3) purchasing the product estimated to be produced for the remainder of the life of the well (Picture Cliffs), (4) compensating the operator/lessee for any surface damage to facilities, or (5) replacement of surface and pipe line facilities after mining is completed.

Future well development, on existing oil and gas leases, would be coordinated with Bureau staff and the mining company to avoid proposed or active coal mining areas. Actions that would be considered for new wells are (1) upon request by a lessee, staff would suspend lease terms, (2) directional drilling of formations and (3) a phase-in of drilling, as mining is completed and the company determines it is safe to allow drilling.

A suspension of lease terms precludes the drilling of a well for a specified time. The lessee retains the lease and the right to drill future wells.

In addition to the options listed in the first paragraph of this section, there are specific safety standards for mining coal near oil and gas wells. According to section 30 CFR 75.1700, "The operator of a coal mine shall take reasonable measures to locate oil and gas wells penetrating coal beds or any underground area of a coal mine. When located, such operator shall establish and maintain barriers around such oil and gas wells in accordance with State laws and regulations, except that such barriers shall not be less than 300 feet in diameter, unless the Secretary or his authorized representative permits a lesser barrier consistent with the applicable State laws and regulations where such lesser barrier will be adequate to protect against hazards from such wells to the miners in such mine, or unless the Secretary or his authorized representative requires a greater barrier where the depth of the mine, other geologic conditions, or other factors warrant such a greater barrier".

Venting of Methane Gas

Oil and gas operators/lessees are required to report the amount of gas vented in the air from wells. These reporting requirements are part of a system for (1) recording the amount of gas produced and sold and (2) the amount of royalties paid to the government.

Unlike the oil and gas regulations (43 CFR 3160), onshore orders, etc., federal regulations require the venting of methane gas from coal mines. Coal mining facilities and operations are not designed to retrieve methane gas for sale. Therefore, the amount vented is not measured or reported. Venting requirements, under 30 CFR 75.323, are required to provide a safe working environment for miners.

Under 30 CFR 75.322, "Concentrations of noxious or poisonous gases, other than carbon dioxide, shall not exceed the threshold limit values (TLV) as specified and applied...in "Threshold Limit Values for Substance in Workroom Air" (1972). Detectors or laboratory analysis of mine air samples shall be used to determine the concentrations of harmful, noxious, poisonous gases."

"When 1.0 percent or more methane is present in a working place or an intake air course... mechanized equipment shall be shut off...(and) changes or adjustments shall be made at once to the ventilation system to reduce the concentration of methane to less than 1.0 percent..." "When 1.5 percent or more methane is present in a working place or an intake air course... everyone...shall be withdrawn from the affected area and...electrically powered equipment in the affected area shall be disconnected at the power source" [see 30 CFR 75.323 (a)(b)].

Rights-of-way

Although the entire lease area is open to the granting of rights-of-way, there are only a few pipe lines and power lines in the area. Most of the rights-of-ways are located along the south boundary. Land uses (i.e., rights-of-way, easements, recreation and public purposes leases, etc.) are considered to be a minor use of the area.

The proposed coal lease area would be closed to the granting of future rights-of-way, except for those related to coal mining and oil and gas operations. Temporary (one to 23 years) surface lines would be considered for wells, until a determination can be made on the amount and affect of subsidence. The mining company would be required to obtain power line rights-of-way from Bureau staff, as needed. This closure would remain in effect until (1) all mining is completed in approximately 2024 or (2) the company has completed mining, use of surface facilities and released specific areas for lands actions.

This closure is a change from the 1988 RMP, in which the entire area was open to the granting of rights-of-way. An agreement would need to be reached with the mining company, Bureau staff and companies interested in obtaining future rights-of-way before coal mining operations are completed in the proposed lease area.

Any changes in current rights-of-way operations and facilities may include but not be limited to (1) the mining company moving a power line(s) before mining begins, (2) laying pipe lines to new wells or to replace older lines that would be damaged by subsidence, (3) the construction of surface facilities associated with gas wells and (4) maintenance and/or new construction of the unnumbered San Juan County road in section 31. Authorization and a change in the right-of-way grant(s), would be needed before construction can begin on the rerouting of a power line.

Livestock Grazing

Portions of three grazing allotments are located in the proposed lease area. Livestock grazing is considered to be a minor use of the area. This determination is based on the limited use of the area from December through April.

The proposed leasing of coal does not change the 1988 RMP program policies and decisions for livestock grazing. Any changes in current livestock operations may include but not be limited to the replacement of dirt tanks and/or fences, if subsidence results in damage to these facilities.

Off-Highway Vehicle Use

The proposed lease area is open to off-highway vehicle (OHV) use. Although the area is adjacent to the northeast boundary of Kirtland, NM, high use OHV areas have not been identified. Light OHV use occurs throughout the area.

The proposed coal lease area would be closed to OHV use. If roads are needed for coal mining operations, the mining company would need to acquire approval from the BLM office. This closure would remain in effect until (1) all mining is completed in approximately 2024 or (2) the company has completed mining, use of surface facilities and released specific areas for use by the public.

Salable Minerals

The proposed lease area is open to the sale of sand and gravel, fill material, etc. under the 1988 RMP. There are no active sand, gravel or fill material sites on the proposed lease area. A commercial sand and gravel operation is located south of SJCCs deep lease and southwest of the proposed lease area. Any materials needed for coal mining operations would need to be acquired from the BLM through the Bureau's permitting process.

The area would be closed to future salable mineral sales until (1) all mining is completed in approximately 2024 or (2) the company has completed mining, use of surface facilities and released specific areas. The disposal of salable minerals is discretionary and no formal withdrawal is necessary to close the area to salable mineral disposals.

Alternatives

Current Management (No Action)

Under this alternative, SJCCs lease application would be returned to them. The Fruitland coal, in the proposed lease area, would not be made available for leasing. There would be no amendments to the RMP. The primary land uses in the area (livestock grazing and oil and gas production) would continue. The area would remain open for the sale of sand and gravel, OHV use and the processing and granting of rights-of way.

Alternatives Considered But Eliminated

Alternative 1

There are numerous ways the acreage to be leased could be modified. One would eliminate many of the conflicts with existing (1) oil and gas development and facilities and (2) rights-of-way. This alternative would be to drop sections 17 and 18 and Lots 1, 2, 3, 4 (S½S½) of section 31 (32 percent of the proposed lease area). Six of the seven federal wells and eight of the rights-of-way are on these lands.

The closure of Bureau programs (salable minerals, rights-of-way, OHV use, etc.), as is described in the proposed action, would apply to a smaller area. Coal excluded from mining would probably not be mined after mining operations are completed in the deep lease. Because of the (1) amount of coal left in the area and (2) the location of the coal, this coal would not be mined at a future date. Approximately 25 to 35 million tons of coal would be left in place.

Alternative 2

A second alternative is to reduce the acreage to be leased by 43 percent. This would involve leasing sections 18, 19, 30 and 31. This would still allow mining to proceed logically from SJCCs deep lease area into the proposed leasing area. The closure of Bureau programs (salable minerals, rights-of-way, OHV use, etc.), as described in the proposed action, would apply to a smaller area.

Coal excluded from mining would probably not be mined after mining operations are completed in the deep lease. Because of the (1) amount of coal left in the area and (2) the location of the coal, coal would not be mined at a future date. Approximately 34 to 47 million tons of coal would be left in place.

Alternatives 1 and 2 were dropped from consideration, because there may not be conflicts with existing oil and gas wells in the future. Depending on the life of the Dakota and Gallup/Dakota wells, these wells may be plugged and abandoned by the time the company proposes to mine coal in the area. Eliminating this acreage would not meet all of SJCCs long range need for coal to meet future contract commitments.

Alternative 3

Another alternative was to delay leasing this area for coal until after the oil and gas pools were depleted and wells abandoned. This alternative was dropped from consideration because projected coal development is to mine this area in conjunction with SJCCs deep lease area. Mining of the deep lease is projected to begin in 2000. If mining of this area is delayed, access will be gone once the deep lease area has been mined and subsidence has occurred. Although the proposed lease area could be mined at a later date, the economics of opening up a mine for just this area, are probably not feasible.

AFFECTED ENVIRONMENT

AFFECTED ENVIRONMENT

Topography

Topography in the proposed lease area rises from 5,400 feet above sea level in the south to 5,636 above sea level on the north. Sandstone capped mesas on the north side of the lease are the dominant topographic feature. The mesa area in the lease area is typical of badlands or breaks. The southern boundary of the lease area is dominated by broad alluvial fans.

Dominant surface drainage features consist of Hutch Canyon and the Stevens Arroyo. The Hutch Canyon drainage crosses sections 19 and 20 on an east to west course. The Stevens Arroyo crosses section 29, 31 and 32. The arroyo crosses section 31 northeast toward the southwest side of the section. The top northwest corner of section 32 is crossed by the arroyo. The arroyo crosses section 29 again on a north to south route. Wallace and Harper livestock dirt tanks are significant features in sections 18 and 20, respectively. Locke Lake is a dry lake located in section 32. Surface water flows toward the San Juan River in this area. Numerous small arroyos also transect the lease area.

Geology

The coal mining activity that has occurred in the area has been from the upper Cretaceous age Fruitland Formation. The lower part of the Fruitland Formation contains several minable coal seams with the basal seams proposed for mining. The basal seams are positioned above the marine sands of the Pictured Cliffs Formation and range from 12 to 16 feet thick in this area. The coal seams strike direction is northwest to southeast with a gentle dip to the east at 60 to 80 feet per mile. The coal seams are not always flat lying. Because of compaction and depositional influences, they contain partings (splits) and merges with minor flexures, where the coal has been wrapped.

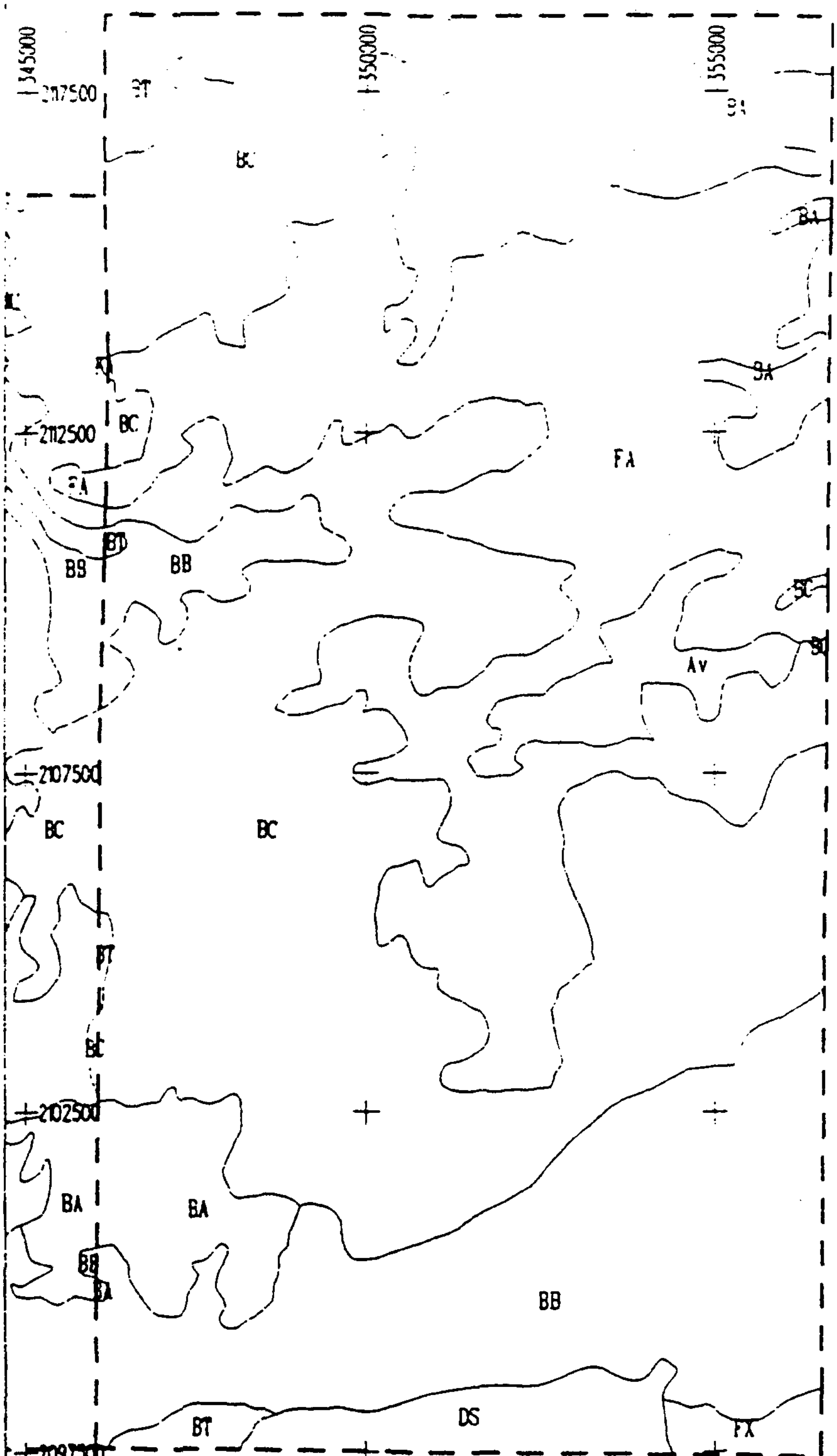
The No. 8 basal coal seam is the most consistent and economically important seam at San Juan Coal Mine. It is stratigraphically located approximately 20 feet above the top of the Pictured Cliffs Formation and the seam averages 13 feet thick. The average coal quality of the minable coal is 10,050 BTU/lb., 16.38 percent ash, 10.33 percent moisture and .89 percent sulfur. The coal consists of a sequence of interbeded seams separated by shale and sand partings, that can reach a thickness of 0.7 of a foot.

Soils

The majority of the soils in the proposed lease area are Badland-Rock Persayo Complex (see Map 4). Land surfaces in the area range from level through rolling hills, up to steep and sheer badland outcrops, which form the soils in the area. Weathered shale forms Badland soils. Rock Land soils are made up of shallow soils, sandstone outcrops and other types of exposed sedimentary rocks. Persayo is a clay loam that is shallow and well drained. Soil permeability is moderately slow with a rooting depth of 10 to 20 inches.

Soils in the level areas are mostly Farb-Persayo made up of weathered shale and sandstone. These soils are shallow, clay loam or loam, covering sandstone or shale. Soil permeability ranges from moderately slow to moderately rapid. The rooting depth ranges from five to 20 inches. Grass and shrubs grow on these soils.

The Doak-Sheppard-Shiprock association soil is found in the south. These soils are found on the sloping tops of benches or mesas. The soils are deep non-calcareous loam surface layered, covering a clay loam containing soft masses of lime. Underlying soils are sandy clay loam or clay loam with calcium carbonate. The southeast area, along with isolated areas in



LEGEND		Deep Lease Extension Soil Type Acreage
Av	Avalon sandy loam, 2 to 5 percent slope	111.8 ac
BA	Badland	333.5 ac.
BB	Badland-Monierco-Rock outcrop complex, moderately steep	862.2 ac
BC	Badland-Rock outcrop-Persayo complex, extremely steep	2157.1 ac.
BT	Blancot-Notal association, gently sloping	92.1 ac.
DS	Doak-Sheppard-Shiprock association, rolling	120.5 ac
FA	Farb-Persayo-Rock outcrop complex, moderately steep	1391.2 ac
FX	Fruitland-Persayo-Sheppard complex, hilly	36.5 ac.
HA	Haplargids-Blackston-Torriorthents complex, very steep	0.0 ac
	Total Deep Lease Extension Area - 5104.9 ac.	

Map 4
Soils Map

map prepared by

Buchanan Consultants, Ltd.

Scale 1 in. = 2750 ft.

the north, are alluvial gravels and cobbles. Soil permeability ranges from moderately slow to rapid with a rooting depth of 60 inches or more.

Hydrology

The potential for shallow aquifers exists in the coal seams. The amount of water in communication with the seams is not expected to be appreciable. The San Juan Basin contains thick shales. These shales, combined with the difference in depths of the coal seams result in perched shallow aquifers. The coal in the area is not generally in communication with aquifers. Coal occurs in closed geologic systems. Water quality in these perched aquifers is expected to be poor due to contact with the coal seam. All groundwater is recharged by precipitation, with only approximately four percent remaining as groundwater. In the proposed lease area shallow water tables are recharged by precipitation along ephemeral channels.

Coal Resources

Coal mining has been a part of life in the Farmington, New Mexico area since 1895 when ranchers in the La Plata area opened coal beds for their own use and to sell several tons to neighbors and surrounding homesteads and communities. Coal was the primary fuel source in the area in the late 1800's due to depleted pinon/juniper forests associated with settling of the area.

Large scale development of the coal field began in 1958 with the Public Service Company of New Mexico. Coal reserves were acquired in anticipation of an electric power facility, which would provide power to New Mexico. Western Coal Company began mining coal in 1973, after two preference rights leases were acquired.

Coal from the mine provided fuel to the San Juan Generating Station by mine-mouth operations. On December 1, 1980, a plan was adopted for liquidation of Western Coal Company by its owners, Public Service Company of New Mexico and Tucson Power Company. On that day Western Coal Company also subleased its working interest in the coal leases to Utah International, Inc. later acquired by BHP World Minerals. Simultaneously, Western Coal Company sold the San Juan Processing Plant to San Juan Coal Company, at this point a subsidiary of Utah International, Inc. Leases were then subleased by Utah International, Inc. to the San Juan Coal Company (SJCC).[1]

Coal is currently being mined from the No. 8 seam in the Fruitland Formation. This seam is approximately 13 feet thick on the average and is the most consistent and economically important seam.

Coal is currently uncovered at San Juan Mine (SJM) utilizing both draglines and a truck/shovel fleet. Active pits are maintained at widths no greater than 200 feet. Overburden is drilled and blasted. Cast blasting is used to minimize the amount of overburden which has to be removed by dragline operations. Coal is mined at San Juan by truck/loader fleet and shipped directly to the San Juan Generating Station over a haul road, by Kress 180 ton Bottom Dump Trucks.

Oil and Gas

The oil and gas on the proposed lease area is federal except for the NWNW of section 18 and section 32. The minerals in the NWNW of section 18 are private while the state owns the oil and gas minerals in section 32. The primary formations for oil and gas development, listed according to depth, are the Fruitland (coal or sand), Picture Cliffs (sand),

[1]One Hundred Years of Coal Mining in the San Juan Basin, New Mexico, Howard B. Nickleson, Bulletin 111, New Mexico Bureau of Mines & Mineral Resources, 1988.

Mesa Verde, Dakota and Gallup. There has been some recent interest in the Pennsylvania Formation, which is located below the Gallup Formation.

Because of the location of the San Juan Mine, along the edge of the San Juan Basin, the Fruitland Formation is shallow (approximately 600 to 1,400 feet deep). There is an actual outcrop of Fruitland coal at the La Plata Mine.

The Fruitland Formation, where most of the coal gas (methane) wells are drilled, ranges in depth from approximately 1,000 to 4,000 feet deep. Most of the Fruitland wells are drilled east of the proposed leasing area.

A number of wells have been drilled, abandoned or plugged and abandoned (see Map 5). There are currently five producing Dakota wells (see Table 1). There are two wells in sections 17 and 18. The fifth well is in the northwest corner of section 19. A producing Picture Cliffs well is located in the southeast corner of section 31. A Fruitland well is shut-in in the southwest corner of section 31. This well was shut-in in 1997. A producing Picture Cliff well is located in the northeast corner of section 32.

There are six oil and gas companies with interests (leases) in the proposed lease area. The names and addresses of these companies are listed below.

Amoco Production Company
200 Amoco Ct.
Farmington, NM 87401

Burlington Resources
P. O. Box 420
Farmington, NM 87499

Celsius Energy Company
P. O. Box 11070
Salt Lake City, UT 84147

Dugan Production Corp.
709 E. Murray Drive
Farmington, NM 87401

Richardson Production
1700 Lincoln, #1700
Denver, CO 80203

Yates Petroleum (et. al.)
105 S. 4th Street
Artesia, NM 88210

Rights-of-way

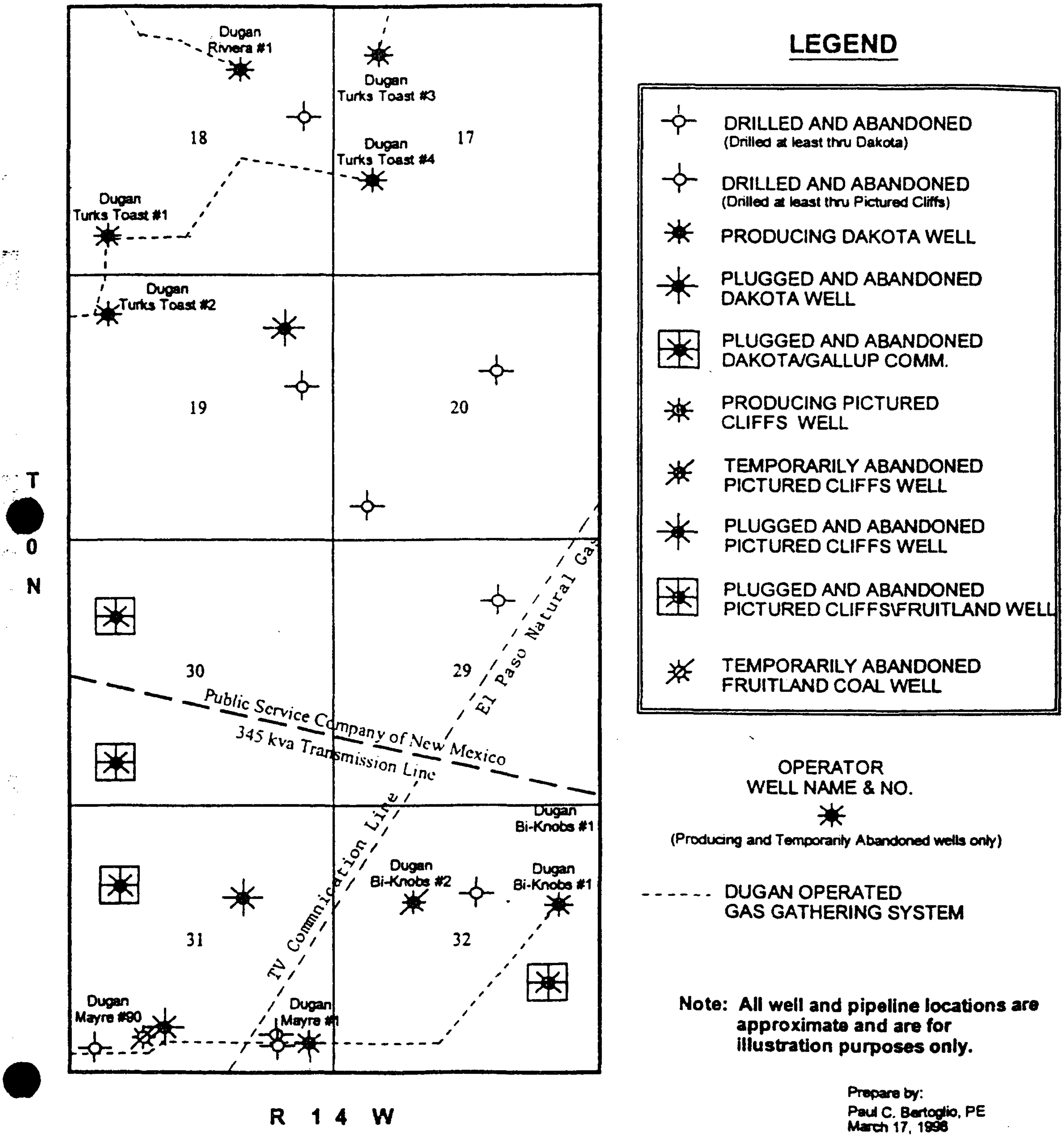
There are several pipe and power lines in the proposed lease area (see Table 2). There is a high power 345 kilo volt (Kv) transmission line (NM-20432) in sections 29 and 30 (see Map 5). A television communication line (NM-029861) is located in sections 29, 31 and 32 (see Map 5). There are four short pipe line ties with one pipe line going to the Turks Toast 2 well in the northwest corner of section 19. A second line goes to the Turks Toast 1 well in the southwest corner of section 18. A second pipeline in section 18 goes to the 1 Riviera well. The fourth line is to a plugged and abandoned well (Mesa Twin Mounds 2) in the northwest corner of section 30. The short pipe line ties are usually buried three feet deep.

In addition to the pipe and power lines, approximately 6,000 feet of road was authorized (NM-57952) and constructed from the southwest corner into the northeast corner of section 31 by San Juan County. A recreation and public purposes (R&PP) lease was granted to San Juan County by the BLM for a landfill in 1962. This landfill was made available for use by residents in and around the Kirtland, New Mexico area. The landfill, lot 4 of section 31 (SWSW), was a fenced 40 acre area, which was closed by the BLM in 1987. Since that time, the single gate that provided access into the landfill has been locked. The closure of this land fill was approved by the State of New Mexico's Environmental Division.

A trash compactor station was built on private land in 1989 and is used by the public in Kirtland. This station is located southwest of the old land fill.

The south boundary of the lease area is adjacent to a residential area on the northeast side

Map 5
Wells, Pipelines and Electrical Power Lines



Note: All well and pipeline locations are approximate and are for illustration purposes only.

Prepare by:
Paul C. Bertoglio, PE
March 17, 1998

TABLE 1. OIL AND GAS LEASES AND WELLS LOCATED IN THE PROPOSED COAL LEASING AREA

Section/ Lease No.	Well Name	Zone[2]	Year Drilled	Well Status[3]	Year ABD/GSI	Average Daily Production	Lessee/ Operator
Section 17							
NM-019163	Turks Toast 3	D	1989	PGW		0.90 barrels/55.78 mcf	Dugan Prod.
	Turks Toast 4	D	1989	PGW		1.06 barrels/32.95 mcf	Dugan Prod.
Section 18							
NM-019403	Riviera 1	D	1983	PGW		0.70 barrels/85.20 mcf	Dugan Prod.
	Turks Toast 1	D	1982	PGW		0.92 barrels/41.21 mcf	Dugan Prod.
Section 19							
NM-019163	Turks Toast 2	D	1982	PGW		0.54 barrels/85.06 mcf	Dugan Prod.
SF-078620-C	Kirtland No. 1	M	1958	DH	1958		
NM-078620	Core Hole 4	F	1953	DH	1954		
Section 20							
NM-079894-A	1-20 San Juan 30-14	S	1963	ABD	1963		
NM-095075	Gov't Reiley 1	G	1962	ABD	1962		
Section 29							
NM-13811	Stevens 1	D	1981	ABD	1993		Wexpro Co.
Section 30							
NM-27024	Mesa Twin Mound 1	G/D	1983	ABD	1995		Walsh Eng.
	Mesa Twin Mound 2	D	1983	ABD	1993		Walsh Eng.
Section 31							
NM-027024	1Mesa Twin Mound 31	G/D	1984	ABD	1995		Walsh Eng.
NM-078619	2. E. H. Pipkin	PC	1954	ABD	1965		
	1 Pipkin	MV	1954	ABD	1954		

[2] D-Dakota, M-Morrison, F-Fruitland, S-Sanostee, G-Gallup, G/D-Gallup/Dakota, PC-Picture Cliffs, M-Mancos, MV-Mesa Verde.

[3] PGW-producing gas well, DH-dry hole, ABD-abandoned, GSI-gas well shut-in.

TABLE 1. (continued)

Section/ Lease No.	Well Name	Zone	Year Drilled	Well Status	Year ABD/GSI	Average Daily Production	Lessee/ Operator
Section 31 (continued)							
NM-078619	1 Harris	MV	1955	ABD	1955		
	1-31 Strat Text	PC	1954	ABD	1954		
NM-004465	Mayre 1	PC	1953			0.00 barrels/8.13 mcf	Dugan Prod.
	Mayre 2	PC	1969	ABD	1971		
	Mayre 90	F	1990	GSI	1997		Dugan Prod.
Section 32 (State)							
LG-3045-2	1 BI-Knobs	PC	1985	GSI			Dugan Proc.
E-6714-8	45 State Com	PC	1977	PGW			

TABLE 2. RIGHTS-OF-WAY IN PROPOSED LEASING AREA

Section/ ROW No.	Type of Right-of-way	ROW Width	Year Granted	ROW Grantee
Section 17				
NM-80906	Pipeline	35 feet	1989	Dugan Production
Section 18				
NM-80906	Pipeline	35 feet	1989	Dugan Production
NM-53614	Pipeline	50 feet	1982	Dugan Production
NM-59088	Pipeline	30 feet	1984	Dugan Production
Section 19				
NM-53614	Pipeline	50 feet	1982	Dugan Production
Section 20				
NM-029861	TV Comm. Line	30 feet	1957	El Paso Natural Gas
Section 29				
NM-029861	TV Comm. Line	30 feet	1957	El Paso Natural Gas
NM-20432	345 Kv Powerline	100 feet	1975	Public Service Co. of NM
Section 30				
NM-57808	Well Pipeline Tie	50 feet	1984	El Paso Natural Gas
NM-20432	345 Kv Powerline	100 feet	1975	Public Service Co. of NM
Section 31				
NM-57952	Road (dirt)	60 feet	1981	San Juan County
NM-029861	TV Comm. Line	30 feet	1957	El Paso Natural Gas
NM-68517	Pipeline	30 feet	1987	Dugan Production
NM-0553585	Powerline	50 feet	1964	City of Farmington
NM-51730	Pipeline	50 feet	1982	Dugan Production
NM-0523181	Powerline	100 feet	1964	City of Farmington
NM-24904	Powerline	variable	1976	City of Farmington
NM-24621	Pipeline	50 feet	1975	Dugan Production
NM-09218	Transmission/ Telephone Line	30 feet	1953	El Paso Natural Gas
NM-088452	R&PP Lease Kirtland Land Fill (Closed)	40.24 acres	1962	San Juan County

of Kirtland. There is an approximately 20-foot wide dirt road along the south boundary and the rest of the rights-of-way in the lease area (not shown on Map 5). Three of the ROWs are for power lines constructed by the City of Farmington (see Table 2). Two ROWs were issued to El Paso Natural Gas for a (1) television communication line and (2) transmission and telephone line. Three short pipe line ties were constructed by Dugan Production in the southeast corner of section 31 to gas wells.

Livestock Grazing

There are portions of three grazing allotments in the proposed lease area. Grazing allotment 5005 is approximately 22,000 acres in size. Of that amount, approximately 2,000 acres (nine percent) are located in the proposed lease area. The active livestock use (preference) on this allotment is 1,195 animal unit months (AUMs). The authorized grazing is for 382 cattle from December 1 through April 30.

The second grazing allotment is allotment 5006. This allotment contains approximately 4,000 acres. Of that amount, approximately 1,920 acres (48 percent) are located in the proposed lease area. The active livestock use is 157 AUMs with an authorized grazing permit for 800 sheep from December 1 through April 30.

Grazing allotment 5007 contains approximately 6,000 acres. Of that amount approximately 640 acres (11 percent) are located in the proposed lease area. The active preference is 360 AUMs with an authorized grazing permit for 60 cattle from November 1 through April 30.

Off-Highway Vehicle Use

The proposed lease area is open to all vehicle travel. There are no limitations or restrictions on off-highway vehicle (OHV) uses. There appears to be light OHV use in the area, with most of the use occurring at the south end of the area. OHV use is attributed to the location and accessibility of the area by people living in Kirtland, New Mexico. The south boundary of the proposed lease area is adjacent to houses located along the northeast boundary of Kirtland.

Salable Minerals

Salable minerals, administered by Farmington Office, are open to the sale of sand, gravel, fill material, etc. There are no areas, within the proposed lease area, that are currently being used to obtain sand and gravel. A commercial sand and gravel operation, permitted by the BLM, is located southwest of the proposed lease area.

Cultural Resources

A Class III inventory of the proposed lease area was conducted in 1997. The most recent cultural study was conducted for the San Juan Coal Company. "Cultural Resource Inventory of the Deep Lease Extension at the San Juan Mine, San Juan County News Mexico", was prepared by Alpine Archaeological Consultants and documents the results of the inventory.

The inventory resulted in the identification of 83 cultural sites and 140 isolated sites. Four of the 83 sites had been recorded previously. Seventy-eight of the sites were identified as prehistoric. Three of the sites were historic and associated with the Euroamerican or Navajo historic culture. Two of the sites had both prehistoric and historic components associated with them. Of the 80 prehistoric sites, 50 of them had an unknown aboriginal affiliation.[4] One of the sites has Navajo origins and 26 have Anasazi components. The majority of the sites are artifact scatters. A few small structures were located in the area and had either Anasazi, historic or unknown affiliations.

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[4] "Cultural Resource Inventory of the Deep Lease Extension at the San Juan Mine, San Juan County New Mexico", Alpine Archaeological Consultants, Inc.

ENVIRONMENTAL CONSEQUENCES

The following elements are not found in the proposed leasing area or would not be impacted by the proposed action. These elements are air quality, floodplains and wetlands, hazardous or solid wastes, Native American religious concerns, paleontological resources, prime or unique farmlands, public health and safety, socio-economic, vegetation, wildlife, wild and scenic rivers, wilderness or areas of critical environmental concern (ACEC) or special management areas (SMAs).

There are no known threatened or endangered species (T&E) (animal or plant) present in the proposed lease area. Comprehensive surveys for T&E species will be conducted during the summer of 1998. There is the potential for raptor nests to occur within the area. If raptor nests are located, surface disturbing actions will not be allowed near them during the nesting period (March 1 through June 30).

Topography

The proposed action would result in some changes to the surface topography. Removal of a ten to 12 foot seam of coal would result in surface subsidence. Surface topography would be displaced to a maximum magnitude comparable to approximately 80 percent of the mining height or eight to 10 feet. Subsidence would result in a change to the ground surface in the form of long, wide, gradual depressions. The size and shape of these depressions would not create shallow lakes or playas. These depressions would occur on the surface over areas where coal is removed. Coal would be removed in panels of up to 800 feet in width and approximately two miles long for coal mined in the proposed lease area. Surface deformation may occur due to subsidence.

Mesa areas may demonstrate surface expressions of subsidence. This results from the fact that as subsidence works toward the surface it displaces strata, creating voids between these strata. Caved material would expand to fill these voids, creating a bulking effect. The greater the amount of cover over the underground mine workings, the lesser the extent of subsidence features on the surface. Large slab displacement is not expected. Small surface cracking may appear in the vicinity of the active longwall face. These cracks would tend to self heal, as mining progresses. Open voids to the mine workings are not expected to occur.

If the current management is continued there would be no impact to the topography.

Geology

Under the proposed action the geology in the proposed lease area would be changed by the removal of the majority of the No. 8 coal seam. Approximately 80 to 110 million tons of coal would be mined.

If the current management is continued there would be no impact to the geology of the area.

Soils

Under the proposed action, there would not be a noticeable difference in the amount of soil erosion occurring, as a result of closing the area to OHV use. There would be a limited, temporary (23 years) increase in erosion from the construction of service roads and powerlines, with roads creating the most soil disturbance. The width of these roads will be limited to a 14-foot wide driving surface. Depending on the number, type and location of service roads, they may be left in place for other uses.

It is anticipated that some erosion would occur, as a result of laying new pipe lines to wells. Generally, the amount of new disturbance is a maximum of 40 feet wide times the length of the line. Pipe line ties range in length from a quarter to one mile. These impacts are projected to last from six months to two years, until the growth of new vegetation is established. There will be less soil disturbance with the relocation of power lines. The primary disturbance will occur at the site of pole installation.

Unlike surface mining, soils will not be removed or displaced. There may be a gradual sloping and surface cracking of soil in areas where subsidence features are more prevalent. This sloping effect and surface cracking would be associated with the caving of strata as it fills the underground voids. Soil may "bow" as the strata "bows" but there would not be an intermingling of discrete soil horizons at the surface.

If the current management is continued there would be no impact to soils.

Hydrology

Under the proposed action there would be no impacts to the surface hydrology. Except for minor changes in their route, due to subsidence, major drainages such as Hutch Canyon and Stevens Arroyo would not be affected by the proposed action. Contribution to the San Juan River and ultimately to the Colorado River would not increase due to minimal surface disturbances and natural occurring geologic formations. Underground mining would not contribute to the sediment load flowing into the river system.

Shallow aquifers, associated with the coal seams in the proposed lease area, would be affected. The amount of water in these seams is not significant and would be removed as a result of mining. The water is poor quality due to contact with the coal seam. The system would recharge itself after the coal is removed. These water tables are recharged by precipitation along ephemeral channels.

If the current management continues there would be no change to the hydrology.

Coal Resources

Under the proposed action, the RMP would be amended and 80 to 110 million tons of recoverable coal resources would be made available for leasing and development.

Under the current management, the coal resources in the proposed lease area would not be mined. Because of the economics of starting up a mine, it is quite likely coal will never be mined if it isn't mined with SJCCs Deep Lease. Approximately 80 to 110 million tons of coal would remain unmined.

Oil and Gas

Under the proposed action, any oil and gas leases that expire would not be re-issued until coal mining has been completed. This would eliminate these areas from potential oil and gas development until approximately 2024 or until the company has completed mining, use of surface facilities and released specific areas.

Existing leases, held by production, would continue to be developed and existing wells would continue to produce, as they have in the past. The development of existing leases, under the proposed action, would be coordinated with the coal mining company and could be delayed, until mining has been completed in a specific area. Specific agreements, reached between the coal mining company and the operator of existing oil and gas wells, would determine the type and level of impact to oil and gas production.

There would be no impact, if the mining company mines around a well or if a well is plugged prior to the mining operation. Currently, there are five producing Dakota wells in the north-northwest corner of the proposed leasing area. Two wells were drilled in 1982, a single well in 1983 and two in 1989. As is shown on Map 3, mining in this area is projected to begin in 2013 and 2014. Although the life of these wells is not known, some or all of these wells may be plugged and abandoned by the time the coal company is ready to begin coal mining in the area.

At a minimum, the coal company would be required to mine around existing oil and gas wells. As is noted on page 10 of this document, the mining company is required to "...establish and maintain barriers around...oil and gas wells in accordance with State laws and regulations..." SJCC is committed to "...take all reasonable steps to avoid adverse impacts on oil and gas...gathering and transportation facilities...These steps may include, but are not limited to, moving existing facilities and relocating lines which may be affected by subsidence." (see Appendix A). BLM staff may authorize temporary surface pipe lines, as an interim measure, to insure continued production of wells.

There are two Picture Cliff wells and a single Fruitland well in the southern portion of the proposed lease area. A Picture Cliff well was drilled in 1953 and 1985. The second, newest well is in section 31 (state) and is currently shut-in. The 1953 well is still producing product. A Fruitland well, drilled in 1990, is currently shut-in. All of the wells have been drilled by Dugan Production Corp.

Because the Picture Cliff Formation is located under the Fruitland Formation, product may not be available for removal from the Picture Cliff and Fruitland wells after Fruitland coal is mined. In that case, one or more of the mitigation measures, listed in Appendix A, will be considered and selected to mitigate impacts to the oil and gas lessees/operators. "If the adverse impact requires that production permanently cease, SJCC will compensate the producer for the fair market value of lost production (see Appendix A).

If the current management is continued, the area would remain open to additional oil and gas leasing under standard terms and conditions. The existing leases would continue to be developed and existing wells would continue to produce, as they have in the past.

Rights-of-way

Under the proposed action, the proposed lease area would be closed to the processing and granting of rights-of-way, except those that are needed for the mining operation. The effects of the proposed action on existing rights-of-way is uncertain.

There is the potential that the proposed action would have no affect on some of the rights-of-way due to the small amount of expected subsidence. The effects of the proposed action on the various rights-of-way would be closely monitored throughout the life of the project. It may be necessary to re-route some of the rights-of-way based on the monitoring. If there is concurrence by the mining company to avoid mining along the southern boundary, most right-of-way impacts would be avoided. If the company decides to mine coal along the south boundary, pipe lines and power lines would probably need to be moved before mining could occur. The cost of moving these lines versus the value of the coal will be the determining factors, as to whether mining will occur along the south boundary.

If the current management is continued, there would be no impact to rights-of-way. The area would remain open to the processing and granting of rights-of-way.

Livestock Grazing

Under the proposed action the impact on grazing would be minimal. A small amount of forage will be removed for the construction of vents and service roads. Nothing planned under the proposed action would remove enough vegetation to require any adjustment to the grazing permits. Subsidence is expected to be minor throughout the proposed lease area. There is some potential for damage to occur to some of the dirt tanks used for watering livestock in the proposed lease area. If that were to occur, the coal mine operator would need to repair or replace the water source.

If the current management is continued, there would be no impact on livestock grazing.

Off-Highway Vehicle Use

Although the proposed leasing area would be closed to OHV use, it is anticipated there would not be impacts to this resource use. At present, the mining company is planning to install few, if any, fences. The mining company would be required to install OHV closure signs next to dirt roads leading into the proposed leasing area. The signs are needed to inform the public of the change in OHV use from open to closed. Bladed, dirt roads would be available for use by the mining company.

If the current management is continued, there would be no impact on OHV use.

Salable Minerals

Since there is currently no use being made of the proposed leasing area for sand and gravel and fill material, there would not be impacts associated with salable minerals. If there is a future need for sand and gravel, Bureau staff will work with the applicant to identify other locations that can be permitted for the removal of sand and gravel.

If the current management is continued, there would be no impact on the availability of salable minerals.

Cultural Resources

Under the proposed action, it is anticipated that cultural resources would not be affected. Cultural resource sites have been identified and their locations mapped. Cultural sites would be avoided during the surface disturbing activities (vents, roads, etc.). Cultural resources, which might be affected by subsidence, would be identified and mitigated prior to the underground mining occurring at that location.

If the current management is continued there would be no impact to cultural resources.

Consultation and Coordination

The planning process, to amend planning documents for the leasing of coal adjacent to San Juan Coal Company's "Deep Lease" area, was officially initiated with the publication of a Federal Register notice on October 7, 1997 (see Appendix B). This notice informed the public about the planning process and a public hearing scheduled for October 21, 1997. Public input, in the form of written comments, was requested in identifying issues that should be considered in the development of the RMP Amendment. Notice of the public hearing was also published in the Farmington Daily Times on October 19, 1997. Seventeen people attended the public hearing. The people that attended were:

Emily M. O'Riley	George Schwarz
Sherman E. Dugan	Steve Korte
John Alexander	Denise Gallegos
Tim Leftwich	Charles Roybal
Peter Christensen	Micky Ginn
Lynn Woomer	Rick Trost
John Buffington	Mark Ludwig
Elliott A. Riggs	Charlie Beecham
Dan Green	

Questions, comments and issues raised at the hearing are listed below. A response was prepared for the first, second and ninth issues. There is narrative in the document that addresses the questions and/or concerns identified in the remaining issues. Page numbers are listed under each of the remaining 9 issues.

• Will the coal lease be open to a public bidding process for any qualified bidders? Although a Lease by Application (LBA) was filed by SJCC, a competitive lease sale will be conducted by BLM staff.

• Will surface owners in the area of the mine be protected from claims of other mineral owners such as oil/gas? The surface of the proposed lease area is federal, as are the mineral rights. There are existing oil and gas leases for the oil and gas resources in the proposed lease area.

• How will the underground coal reserves be accessed? Will the current San Juan surface mine pit be extended further to the east? See pages 7 and 8.

• What are the anticipated impacts of subsidence at the surface and on pipelines, highlines, and surface water features? See pages 26 and 27.

• There are producing gas wells in the proposed lease area that produce from the Picture Cliffs and the Fruitland formations: How will the underground mine impact these wells? See pages 26, 27 and Appendix A.

• How will the underground mine impact future oil/gas production in the lease area? See pages 26 and 27.

• How will the underground mine operation deal with methane gas? What are the air quality issues associated with venting the gas from the mine workings? See page 11.

• There is high variability in the coal bed methane gas wells in the lease area that will cause a certain amount of unpredictability in the amount of gas that may be encountered in the underground mine. See page 11.

• In relationship to the proposed exploration drilling, how will the oil/gas lessee rights be protected? After the exploration holes are drilled, (1) the first five feet of the drill hole is filled with neat cement, (2) five to 10 feet is filled with dirt and drill hole cuttings and (3) the remainder of the drill hole is filled with neat cement.

• Can conflicting mineral lease interests be resolved through negotiations? See pages 10, 26, 27 and Appendix A.

• Will BHP or the BLM contact all surface and mineral estate owners and lessees in the coal lease area to resolve issues? See Appendix A.

• Several attendees requested copies of a map depicting the lease/mining area. See pages 2 and 3.

On October 16, 1997, a letter was mailed to the known oil and gas operators in the proposed lease area to notify them of the October 21st meeting. They were specifically notified because of the potential for conflict between coal development and oil and gas development.

Three letters were received from two oil and gas operators on the proposed coal lease. They expressed concern over the potential impact that coal leasing and development could have on existing and future oil and gas drilling and production. Specific concerns were expressed on the negative impacts of (1) the production of coal bed methane gas, (2) safety issues for existing well bores, (3) lost revenues, (4) dangers in the mining operation, because of methane gas and (5) the impacts of subsidence to oil and gas facilities. A recommendation was made in one letter to deplete the natural gas resources prior to the coal being mined.

BLM staff who worked on or reviewed this amendment are listed in Tables 3 and 4.

TABLE 3. LIST OF PREPARERS

Name	RMP Responsibility	Education	Experience
Elizabeth Allison	Writer/Editor	BS - Commercial Art BS - Wildlife Biology	BLM - 22 years - Planning & Environmental Coordinator
Peter Christensen	Longwall Mining		San Juan Coal Company
Luanne Crow	Word Processing		BLM - 10 years - Staff Assistant
Joe Hewitt	Oil and Gas	BS - Geology	Private Industry - 8 years BLM - 8 years Petroleum Reservoir Geologist
Robert Moore	Principle Writer/ Renewable Resources	BS - Range/Forest Management	FS - 2 years - Range and Forestry Technician. BLM - 25 years - Surface Reclamation, Realty Spec. Natural Resource Spec.

TABLE 4. LIST OF INTERNAL BLM REVIEWERS

Name	Position	Office
Bob Armstrong	Program Analyst	NM State Office
Jerry Crockford	Senior Technical Specialist - Realty	Farmington Field Office
Peggy Gaudy	Archeologist	Farmington Field Office
John Hansen	Senior Technical Specialist - Wildlife	Farmington Field Office
Jackie Neckels	Environmental Compliance Specialist	Farmington Field Office
Kathy Ollom	Realty Specialist	Farmington Field Office
Ray Sanchez	Livestock Grazing	Farmington Field Office
Duane Spencer	Petroleum Management Team Leader	Farmington Field Office
Barney Wegener	Natural Resource Specialist	Farmington Field Office
Dale Wirth	Soil Scientist	Farmington Field Office
J.W. Whitney	Natural Resource Specialist	NM State Office

CONSULTATION AND COORDINATION

Proposed Coal Leasing Area
Resource Management Plan Amendment
Finding of No Significant Impact

The Proposed Plan is to amend the 1988 Farmington Resource Management Plan for the purpose of considering the proposed leasing of federal coal adjacent to San Juan Coal Company's "Deep Lease Area". The RMP amendment was prepared in response to the filing of a Lease by Application (LBA) by San Juan Coal Company (SJCC). This application was filed in the New Mexico State Office on July 29, 1997. If the RMP amendment is approved, a competitive lease sale would be conducted for approximately 80 to 110 million tons of coal.

SJCC is proposing to mine coal from the proposed coal lease area at the same time they are mining their Deep Lease. Because of the depth of the coal, the anticipated method of mining would be by an underground longwall process. The underground mine would proceed from SJCC's current surface mining operation at their Juniper Pit.

Of the 20 criteria used to assess lands unsuitable for all or certain stipulated methods of coal mining, criteria number two is the only criteria that has to be considered. This criteria [43 CFR 3461.5 (b)(1)] is concerned with "Federal lands that are within rights-of-way or easements or within surface leases for residential, commercial, industrial, or other public purposes, on federally owned surface shall be considered unsuitable". Of the five exceptions, number five applies in that "It is impractical to exclude such areas due to the location of coal and method of mining and such areas can be protected through appropriate stipulations". San Juan Coal Company has developed a Protocol for the Mediation of Adverse Impacts on oil and gas revenues and rights-of-way (see Appendix A).

Based on the analysis of the potential environmental impacts for the proposed leasing and mining of coal considered in the attached Environmental Assessment (EA No. NM-070-98-3092), I have determined that impacts to the human environment are not expected to be significant. Therefore, an environmental impact statement is not required.

Recommended by: ______________________ 4/21/98
District Manager — Date

Approved by: ______________________ 4/17/98
State Director — Date

APPENDIX A

Protocol for the Mediation of Adverse Impacts on Oil and Gas Revenues

PROTOCOL FOR THE MEDIATION OF ADVERSE IMPACTS ON OIL AND GAS REVENUES

This protocol sets forth the commitments made by the San Juan Coal Company (SJCC) regarding potential impacts which its underground coal mining operations may have on oil and gas production, gathering or transportation. This protocol is entered into for the purpose of documenting SJCC's proposed actions to mitigate adverse impacts and allow the Bureau of Land Management to analyze impacts of leasing underground coal reserves in its land use planning process.

Affected Areas

The lands to be affected by mining which are subject to the terms of this Protocol are located in San Juan County, New Mexico and are described as follows:

Township 30 North, Range 14 West, NMPM

Section 17:	All
Section 18:	All
Section 19:	All
Section 20:	All
Section 29:	All
Section 30:	All
Section 31:	All

Township 30 North, Range 15 West, NMPM

Section 13:	S1/2
Section 14:	S1/2
Section 23:	All
Section 24:	All
Section 25:	All
Section 26:	All
Section 35:	All

General Principles

SJCC will conduct its operations in a manner consistent with the legally mandated principles of multiple use of federal lands and mineral reserves. SJCC will use its best efforts to achieve maximum economic recovery of federal resources. Valid existing rights under federal oil and gas leases as well as the 40 acre private oil and gas lease 7 located on the NW 1/4 N W 1/4 of Section 18, which predate SJCC's coal leases, will be honored.

Commitments

1) SJCC will take all reasonable steps to avoid adverse impacts on oil and gas resource production, gathering and transportation facilities. These steps may include, but are not limited to, mining around existing well bores, moving existing facilities, and relocating power lines, pipelines or roads which may be affected by subsidence. Costs for avoidance measures for facilities with rights senior to SJCC will be paid by SJCC.

2) Adverse impacts will be considered to have occurred when a demonstrable loss of revenue from the facility occurs If SJCC's coal mining activities adversely impact an oil and gas producer with rights which are senior to SJCC, then steps to mitigate those impacts will be taken as follows:

   a) If the adverse impacts can best be mitigated by paying damages for decreased production, SJCC will pay fair market value for appropriate mitigation measures.

   b) If the adverse impact requires that production permanently cease, SJCC will compensate the producer for the fair market value of lost production. Fair market value will be the projected future net cash flow, i.e., Gross projected revenues, less applicable royalties and over riding royalties, taxes and cost of production, gathering, transporting, processing and shrinkage, discounted at a rate equal to the prevailing prime interest rate during the prior month that the analysis is performed plus two percentage points. The projected net cash flow will be determined using the following parameters:

      i) Working and net revenue interest, operating costs, gas analysis, and run and or settlement statements supplied by the producer.

      ii) A gas price equal to the higher of the previous twelve month Inside FERC index for the San Juan Basin or the average one year contract available from three gas marketers. All prices will be adjusted for the current rates for field transportation, gathering, processing and shrinkage.

      iii) An oil price equal to the higher of the previous twelve month average oil price received for like gravity oil in the San Juan Basin or the average of a one year contract available for at least three crude oil purchasers. The price used will be adjusted for any standard deductions.

iv) Produce prices will be escalated at three (3) percent and direct operating expenses will be escalated at four (4) percent.

v) SJCC will be authorized to audit and confirm all data and information provided under paragraphs 2(b)(i)(ii)(iii) and (iv).

vi) If it is legally determined that a payment to the royalty and/or over riding royalty interest holder, or severance tax to the state of New Mexico is required as a result of the cessation of production, a payment will be based on the projections in 2b discounted at a rate equal to the prevailing prime interest rate during the prior month that the analysis is performed plus two percentage points.

c) In the event SJCC and the oil and gas interest holder do not agree to a value for mitigation using the factors described in paragraph 2 (a) and (b), then the parties will enter into binding arbitration using a mutually agreeable neutral third party to resolve the dispute.

d) SJCC shall pay for the direct, actual costs to reroute power lines, pipe lines or roads with senior rights to SJCC where necessary to avoid adverse impacts.

3) SJCC will be responsible for paying for plugging wells which are subject to this protocol that must be mined through in the course of its mining operations. Said wells must have been completed in accordance with BLM regulations and must have been determined to be capable of producing in paying quantities per BLM guidelines.

This Protocol is submitted to the Bureau of Land Management on this 10th day of September 1998.

SAN JUAN COAL COMPANY

By: Chris S Ellefson

REFERENCES

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