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OIL AND GAS LEASING FINAL ENVIRONMENTAL IMPACT STATEMENT

PIKE AND SAN ISABEL NATIONAL FORESTS  
CIMARRON AND COMANCHE NATIONAL GRASSLANDS

Summary

Page S-16            Table 1: Change title to read, "Availability of NFS Lands for Leasing by Alternative".

Page S-16            Add attached Table 1a. Split-estate lands were erroneously omitted in Table 1.

Note: None of these changes affect the decisions being made in the Record of Decision.

**Table 1a**  
**Availability of Lands for Leasing by Alternative**

PROPOSED CONSTRAINTS SPLIT-ESTATE LANDS	Alt. I Acres	Alt. II Acres	Alt. III Acres	Alt. IV Acres
Standard Lease Terms	107,937	107,937	60,326	0
Supplemental Stipulations Controlled Surface Use Timing Limitation No Surface Occupancy			40,589 23,553 1,063	
Total Supplemental Stipulations *	0	0	65,205	0
Discretionary No Lease	0	0	0	0
Total Acres Available for Oil and Gas Leasing	107,973	107,973	107,973	0

Note: \* Some stipulations overlap, therefore, the total may add up to more than the total acres administratively available.



FOREST SERVICE  
PUEBLO, COLORADO



# SUMMARY: *OIL and GAS LEASING* ENVIRONMENTAL IMPACT STATEMENT

PIKE and SAN ISABEL NATIONAL FORESTS  
COMANCHE and CIMARRON NATIONAL GRASSLANDS



Cooperating Agency:  
USDI Bureau of Land Management

## **FINAL ENVIRONMENTAL IMPACT STATEMENT**

### **Oil and Gas Leasing on the Pike and San Isabel National Forests Cimarron and Comanche National Grasslands**

Clear Creek, Douglas, Jefferson, Chaffee, Custer, Fremont, Lake, Park, El Paso, Pueblo, Teller, Huerfano, Baca, Las Animas, Otero Counties in the State of Colorado. Morton and Stevens Counties in Kansas.

**Lead Agency:** USDA Forest Service

**Cooperating Agencies** USDI Bureau of Land Management  
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**Abstract:** The final Environmental Impact Statement documents the analysis of four alternatives developed for possible management of oil and gas leasing on the 2.7 million acres administered by the Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands. The alternatives are: I) current Forest Plan direction which makes all lands available without the identification of supplemental protection needs until a lease is identified and further analyzed; II) leasing all currently available lands using standard lease terms; III) leasing approximately 829,000 acres using standard lease terms, 1,272,000 acres using supplemental stipulations, and discretionarily removing 100,000 acres from leasing; IV) removing all lands on the Unit from leasing. The document also discloses the information necessary for the Forest Supervisor to determine those specific lands that will be authorized for leasing. These decisions will be documented in a separate Record of Decision which will also amend the Forest Plan.

The appeal period is 45 days and begins the day the decision is published.

## TABLE OF CONTENTS

Preface	S-1
Purpose and Need	S-1
Decisions to be Made	S-2
Lands Involved	S-2
Oil and Gas Activity on the Unit	S-2
Federal Oil and Gas Leasing	S-4
Stage 1	S-6
Stage 2	S-6
Stage 3	S-8
Stage 4	S-8
NEPA Requirements	S-8
The Analysis Process	S-8
Leasing Analysis	S-9
Consent to Lease Specific Lands	S-11
Forest Service Role in Implementation	S-12
Significant Environmental Issues	S-13
Management Alternatives	S-13
Considerations for All Alternatives	S-14
Alternatives Considered in Detail	S-15
Alternative I and II Mitigation	S-17
Stipulations by Alternative	S-18
Affected Environment	S-18
Effects of Alternatives	S-20
Representative Well Analysis	S-20
Effects of Management Alternatives	S-21
Direct and Indirect Effects Common to All	S-21
Direct and Indirect Effects by Alternative	S-22
BLM Versus Concentrated RFD	S-24
Cumulative Effects	S-25
Effects on Unique Resources	S-31
Preferred Alternative	S-31

## LIST OF FIGURES, TABLES AND EXHIBITS

Figure 1	Vicinity Map	S-3
Figure 2	Leasing Flow Chart	S-6
Table 1	Availability of Lands for Leasing by Alternative	S-16
Table 2	Supplemental Stipulations by Alternative	S-18
Table 3	Significant Direct/Indirect Effects by Alternative	S-23
Exhibit 1	Oil and Gas Lease Monitoring Checklist	S-32

## **PREFACE**

The Federal Onshore Oil and Gas Leasing Reform Act (P.L. 100-203), was enacted in 1987. The implementing regulations for the Bureau of Land Management (BLM) were published in 1988, and those for the Forest Service in 1990. The regulations describe the procedures by which each agency will carry out its statutory responsibilities in the issuance of oil and gas leases.

The BLM manages all federally-owned subsurface minerals. In the case of oil and gas, it is responsible for advertising and selling available leases, and for monitoring sub-surface activities related to exploration and development. Their monitoring role includes administering all federal regulations pertaining to sub-surface oil and gas.

The Forest Service has the authority and responsibility to determine which National Forest System lands are available for oil and gas leasing, and the specific lands which the BLM may offer for lease. It is also responsible for prescribing lease terms that provide reasonable protection to surface resources and values, approving lessee plans of operation, and insuring that the requirements of the leases and operating plans are carried out according to their terms. The regulations applicable to the above are found in Title 36, Code of Federal Regulations, Part 228.

The Oil & Gas Environmental Impact Statement (EIS) for the Pike & San Isabel National Forests and Comanche & Cimarron National Grasslands (the Unit) was prepared in response to the requirements of the implementing regulations for the Leasing Reform Act.

This Summary is intended to be an overview only. The reader should consult the EIS for a comprehensive review.

## **PURPOSE AND NEED**

The EIS describes and explains the leasing decisions the Forest Supervisor will make, how the Forest Service and BLM will implement the decisions to authorize and sell leases, and how future decisions will be made to authorize ground disturbing activities. The environmental significance of each of these decisions, and measures the Forest Service will use to assure protection of the quality of the human environment, are also disclosed.

The basic purpose of the EIS is to disclose the environmental effects of decisions the Forest Supervisor is considering for managing the oil and gas leasing and development programs on the Unit. The EIS describes:

the significant environmental issues involved in these decisions,

the nature of the lands and environmental conditions of the Unit,

alternative patterns of land which could be available for leasing based on resource protection levels,

stipulations to be applied based on resource values, and

the direct, indirect and cumulative environmental consequences of the leasing management alternatives.

## **DECISIONS TO BE MADE**

The Supervisor of the Unit will make three related decisions in a Record of Decision that will accompany the final EIS. The first decision will identify which lands will be administratively available for leasing to private individuals or firms and the stipulations that must be applied to their respective leases. The second decision will identify the specific lands the Bureau of Land Management will be authorized to lease upon the review of an identified lease parcel. The third decision will be to make an amendment to the Land and Resource Management Plan (Forest Plan) for the Unit.

The Record of Decision will be supported by a series of maps that will be used in implementation. Information disclosed on maps will include the resource values being protected and the stipulations required to provide the protection. The maps will not be generally distributed but will be available for review at the Denver office of the BLM and the Pueblo office of the Forest Service. Maps related to specific Ranger Districts will be on file at each District office.

## **LANDS INVOLVED**

The Pike and San Isabel National Forests were administratively combined in 1973. Lands in southeastern Colorado and southwestern Kansas were made part of the San Isabel National Forest in 1954 and named the Comanche National Grassland and Cimarron National Grassland in 1960. The Forests and Grasslands combined, or the Unit, include 2,752,378 acres of land (see Figure 1). Split-estate lands, those for which the federal government holds the mineral rights but has no surface ownership, are included in the EIS and constitute 107,973 acres. These lands are located within or adjacent to the National Forest System boundaries. The Unit is characterized by a large amount of intermingled ownership with adjacent landowners including private individuals, corporations, the State of Colorado and Bureau of Land Management.

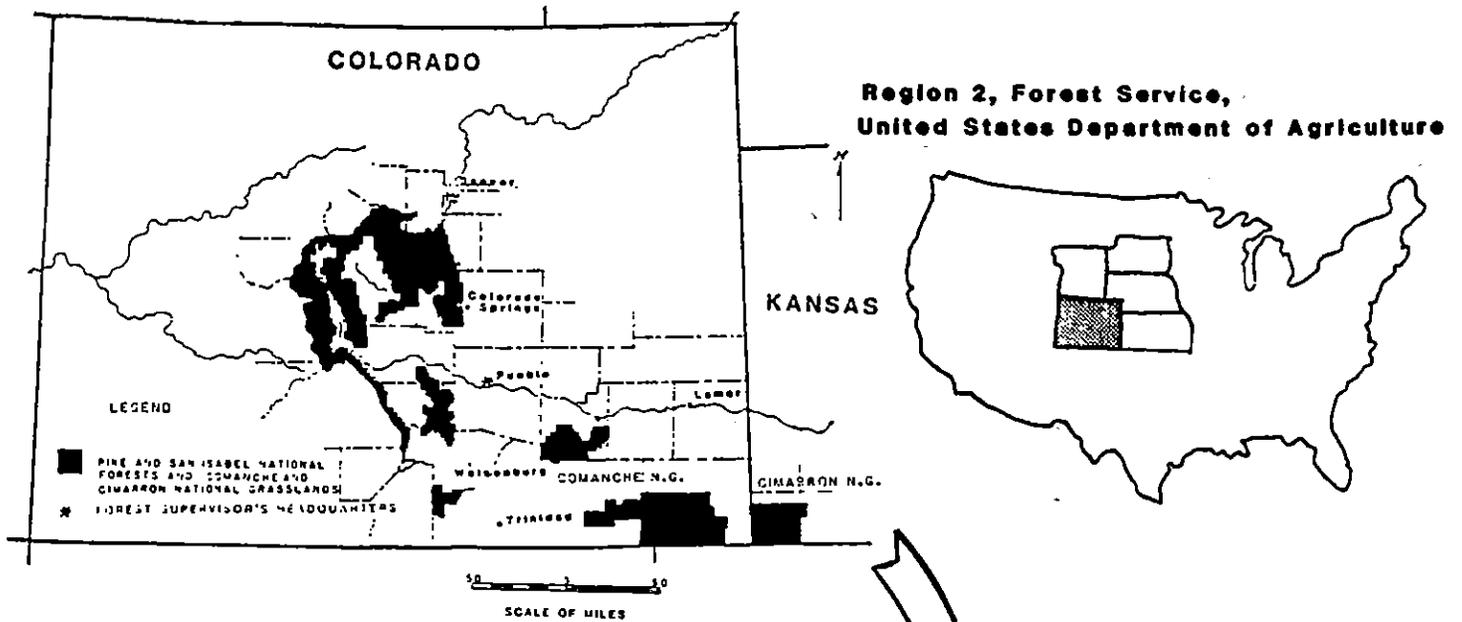
The current Forest Plan makes the majority of lands on the Unit available for oil and gas leasing using standard lease terms without the identification of stipulations or any site-specific analysis. Slopes over 60% with high geologic hazard ratings and watersheds with extreme sedimentation problems have special management requirements. Some 550,872 acres are precluded from mineral development for the following reasons:

- Lands with non-federal minerals - no authority to lease
- Designated Wilderness Areas - legislatively withdrawn
- Wilderness Study Areas - withdrawn by the Oil and Gas Leasing Reform Act
- Identified Special Areas - reserved or no authority to lease

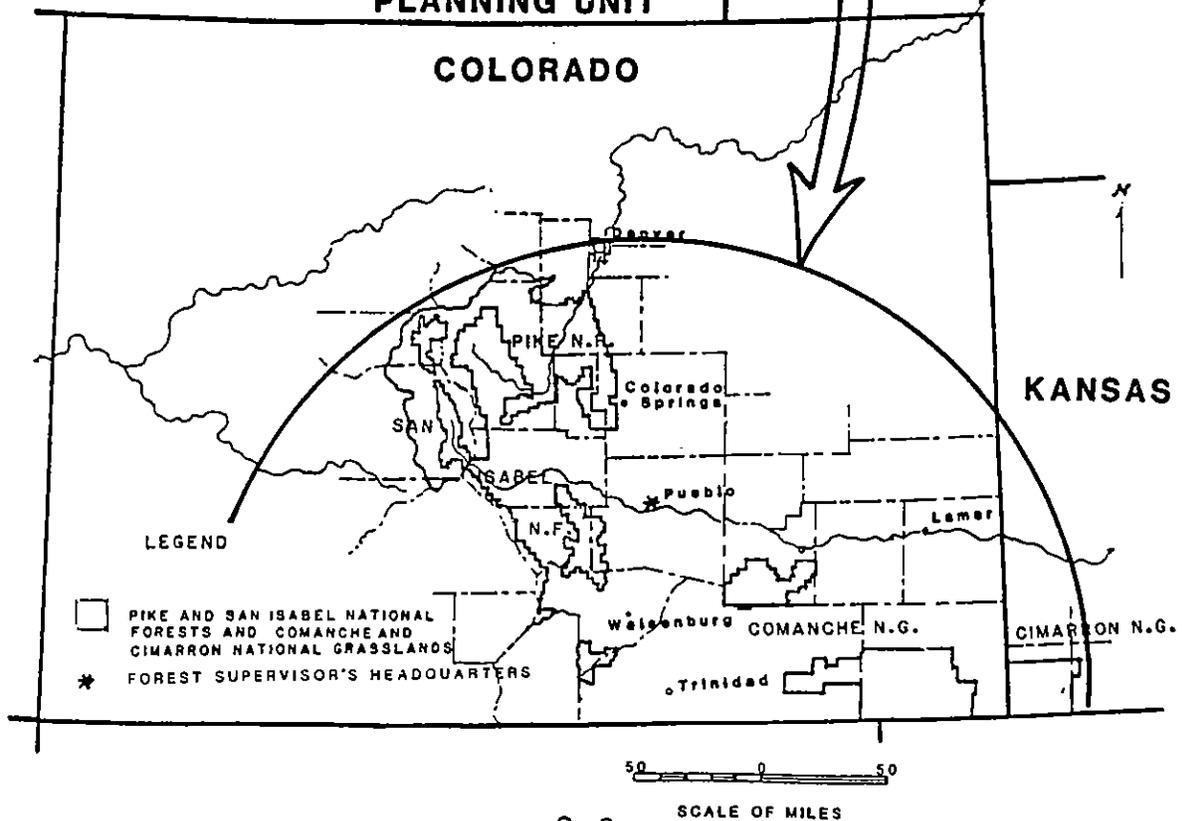
## **OIL AND GAS ACTIVITIES ON THE UNIT**

Historical development over the past 45 years is a good indication of the level of activity that we expect to continue, with leasing and development concentrated on the Cimarron and Comanche National Grasslands. There are 23 producing oil and gas fields on the Cimarron. The Cimarron overlies one of the world's largest known accumulations of natural gas, the Hugoton Known Geologic Structure, over 4 million acres in size. Hugoton has been producing oil and gas since 1923. Much of the Cimarron is already leased with a majority of the leases containing producing wells. The Comanche National Grassland has seven active fields on the Carrizo Unit with little production coming from other areas.

FIGURE 1  
Vicinity Map



GENERAL LOCATION MAP  
PLANNING UNIT



The Pike and San Isabel National Forests have never produced oil or gas resources. Past exploration has occurred in several areas but no resources have been located. Overthrust geologic structures in the Rampart Range and just east of South Park indicate moderate to high potential for oil and gas resources. A producing carbon dioxide area exists on private land making some believe that potential exists on the flanks of the Sangre de Cristo and Mosquito Ranges.

Generally, any development of oil and gas resources will progress through five basic phases: (1) preliminary investigations, (2) exploratory drilling, (3) development, (4) production, and (5) abandonment.

**Preliminary Investigations** - Published geologic maps, aerial photography, and satellite imagery are used to identify geologic characteristics that may indicate oil or gas deposition. Further exploration may occur by plane, vehicle, or on foot if warranted. Once geologic indicators are identified, subsurface characteristics may be measured using geophysical methods.

**Exploratory Drilling** - Once a company has identified an area and obtained the proper leases and an approved permit to drill, operations may begin. Only by drilling a hole in the ground can the existence of petroleum actually be verified. A well drilled to test for the presence of oil or gas in a previously undeveloped area is called a "wildcat well."

**Development** - If the "wildcat" well accesses oil or gas resources a lessee is likely to request approval to drill additional wells and develop a field. Roads, additional well sites, and additional facilities may be needed to make the production operation effective. This development may require amendment of the permit to drill.

**Production** - During production little activity would occur at the well site except for periodic maintenance and visits to assure the well is operating properly. The estimated life of a typical field is 15 to 25 years.

**Abandonment** - Wells are plugged and abandoned upon depletion of the resource. Truck mounted equipment is used to plug formerly producing wells, all surface equipment is removed, and the site is restored. Specific plugging and abandonment requirements vary based on the rock formations, subsurface water conditions, and the specific well site.

## **FEDERAL OIL AND GAS LEASING**

The government conveys limited rights to the purchaser of a lease. The lessee has the right to apply for permission to drill and disturb a proposed surface area in order to explore for oil or gas. Upon approval of a permit to drill the government conveys the exclusive right to: (1) drill for, mine, extract, remove and dispose of all the oil and gas (except helium) in the leasehold, and (2) build and maintain necessary supporting facilities for the term of the lease. At no time does an oil and gas lease convey the right to build housing, cultivate the land, or remove any minerals other than oil and gas. Lease rights provide that drilling and development take precedence over rights the government may subsequently grant other users of the area, such as ranchers or recreationists. If the government has previously granted privileges by permit to others such as ranchers, those rights granted by the earlier permit will take precedence over the lease rights. A lease is normally issued for a period of five or ten years and is extended if it is producing oil or gas in "paying" quantities.

A lease does not convey an unlimited right to explore or an unlimited right to develop any oil or gas resources found under the land. Leases are subject to terms and conditions. These are

restrictions derived from legal statutes and measures to minimize adverse impacts to other resources and are generally characterized in a lease as stipulations. Stipulations modify the rights the government grants to a lessee. The stipulations are known by potential lessees prior to any sale, and must be applied to ground disturbing activities.

Standard lease terms are stipulations common to all leases to provide reasonable measures to minimize adverse impacts to surface resources. These include, but are not limited to, modifications to the siting or design of facilities, timing of operations, and specifications of interim and final reclamation measures. Standard lease terms are limited and may not require the lessee to relocate drilling rigs or supporting facilities by more than 200 meters, require that operations be sited off the leasehold, or prohibit new surface-disturbing operations for more than 60 days each year.

The standard lease terms can be modified by special or supplemental stipulations to protect resources when resource impacts cannot be mitigated by the standard terms.

**Prior to the 1987 Leasing Reform Act** The Secretary of the Interior, through the Bureau of Land Management, was responsible for authorizing the sale of leases for all available federal lands, including the lands of the National Forest System. Individuals or firms wishing to lease parcels of the National Forests or Grasslands would make a "Request For Lease" for a specific parcel of land to the BLM. The BLM would then ask the Forest Service to make a recommendation regarding sale of the lease. Officers of the Forest Service would determine the stipulations necessary to protect the resources but only the Secretary of the Interior possessed the authority to determine which stipulations to apply to a lease. The final decision was appealable to the BLM.

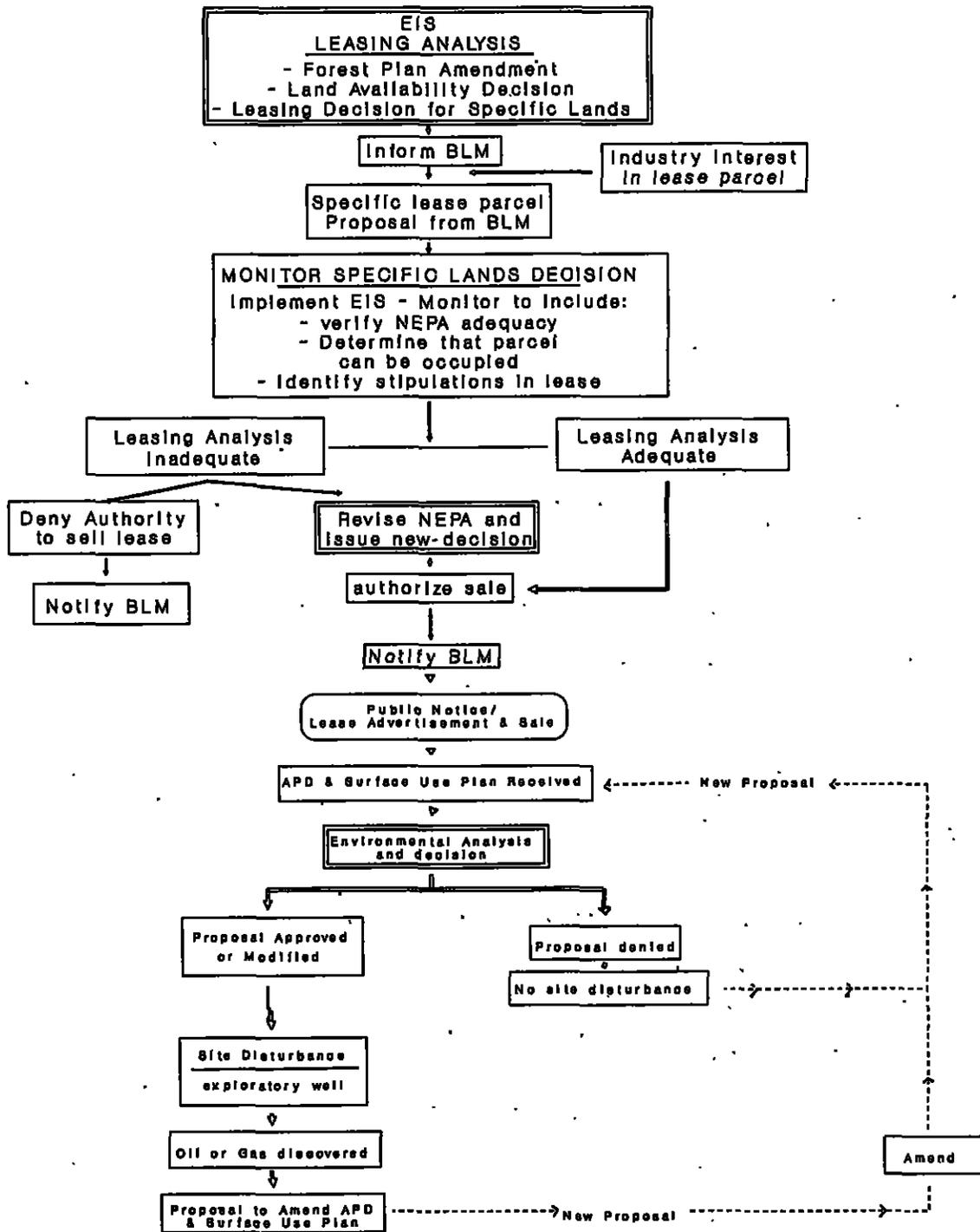
**The Leasing Reform Act** made two significant changes in the way leasing decisions are reached. First, it expanded the role of the Secretary of Agriculture in the leasing decision process. The Secretary's officers now identify the NFS lands on which leases can be sold and determine the appropriate lease stipulations needed to protect the surface resources.

Second, the Reform Act established a staged decision process for sale of a lease and approval of a permit to drill and operate. That is, before a firm can drill an exploratory well or extract oil or gas from National Forest System lands, the Forest Service must authorize sale of a specific lease (the preliminary decision), and then approve or disapprove a detailed Surface Use Plan of Operation at the time of an application for permit to drill (the substantive decision). The U.S. Supreme Court in *Robertson v. Methow Valley Citizens Council*, 104 L.Ed.2d 351 (1989), upheld the use of more than one stage of NEPA compliance after a Forest Plan is issued.

The legally required, staged decision process is designed to accommodate the tentative nature of oil and gas exploration and development. Lessees must select the optimum combination of geologic characteristics, technology, capital, available equipment, and market conditions to commit to risk a drilling operation. Only about 15 percent of exploratory wells drilled in the United States result in a paying discovery. The major distinction between oil and gas leasing and other activities authorized by the Forest Service is the uncertainty of development after the permit is issued.

The federal government must ensure that future activities will neither unduly harm the environment nor interfere with other uses of these public lands. The regulatory framework created to implement the Reform Act includes staged permitting of oil and gas exploration and development. Those stages include public disclosure at the following decision points: (1) the determination of lands available for leasing, (2) the leasing specific lands decision, (3) Application for Permit to Drill (APD), and (4) amendment of the permit to drill if field development occurs. These stages are displayed in Figure 2. The staged process is designed to minimize the risk of undisclosed irreversible or

**FIGURE 2**  
**Leasing Flow Chart**



**LEGEND**

- BLM Authority
- Administrative Appeal Point

irrevocable environmental impacts. Each decision is based on environmental analysis and is administratively appealable.

## **Stage One, Lands Available for Leasing**

The decision regarding lands available for leasing is based on disclosure and analysis provided in a "Leasing Analysis." The Leasing Analysis is a "programmatic" rather than a "site-specific" or "project" level activity. The programmatic decision will identify which, if any lands will be available for leasing. The Forest Plan will be amended at the same time so that the decisions made on the basis of the EIS will be consistent with the Forest Plan. No rights are granted by the government to other parties when the Leasing Availability Decision is made.

The determination of lands that will be administratively available, and subsequent decision authorizing leases, are based upon analysis of the environmental effects of actions connected to leasing. Those projected effects are based on reasonably foreseeable development, as defined by the regulations.

The regulations require the Forest Service to "project the type/amount of post-leasing activity that is reasonably foreseeable as a consequence of conducting a leasing program consistent with that described in the proposal and for each alternative and analyze the reasonable foreseeable impacts of post-leasing activity" as a part of the analysis. This projected activity called reasonably foreseeable development, or RFD, generates the social and environmental effects that are disclosed.

## **Stage Two, Leasing Decisions for Specific Lands**

The Leasing Reform Act requires that the Forest Service consent to the issuance of oil and gas leases on specific lands. The regulations implementing the Leasing Reform Act require the following before consent can be given for one or more leases to be issued by the Bureau of Land Management:

Verifying that oil and gas leasing on the specific lands has been adequately addressed in a NEPA document, and is consistent with the Forest Land and Resource Management Plan.

Ensuring that conditions of surface occupancy identified in section 228.102(c)(1) are properly included as stipulations in resulting leases.

Determining that operations and development could be allowed somewhere on each proposed lease, except where stipulations will prohibit all surface occupancy.

The Forest Service has decided to administratively combine the Leasing Availability and Leasing Specific Lands analyses and decisions. Both decisions will be documented in a single Record of Decision. The Forest Service will implement the decisions to authorize the BLM to advertise sale of a lease parcel.

At the time that a Record of Decision is signed for the availability and specific lands decision no authority is granted to the BLM to advertise any lease. The BLM will work with industry to provide specific lease proposals to the Forest Service. After the lease proposal has been received and reviewed by the Forest Service the Forest Supervisor may authorize the BLM to lease the specific parcel. Once the lease has been sold the right to apply for permission to drill is granted to the

lessee. The specific steps that the Forest Service will follow to review a proposal are described later.

### **Stage Three, Application for Permission to Drill**

After purchase a lessee may propose to develop the lease and will request approval of an Application for Permit to Drill (APD) and attached surface use plan of operations (SUPO). That proposal will be analyzed in a NEPA document prior to approval, modification, or denial. If the proposal is approved, ground disturbing activities will occur; if not approved, the lessee may make another proposal.

### **Stage Four, Amendment to APD**

If oil or gas resources are found through exploratory activities, industry may request a change to their approved SUPO to allow for development facilities. At that time the Forest Service must analyze the environmental effects of these proposed changes and issue another decision document.

## **NATIONAL ENVIRONMENTAL POLICY ACT** **REQUIREMENTS** **(NEPA)**

The analysis that is documented in the EIS is complex and relates to both the availability and specific lands, or the first two of the four staged, decisions. Several parts of the EIS address the various requirements of NEPA for both decisions. Included amongst these are affected environment, projected action, projected effects, mitigation, and net effects.

Required discussions for the availability and specific lands decisions are often combined in this document. Reasons for doing this include the following: 1) The Forest Service has no information about specific well hole location or other ground disturbing activity at the time of either decision, whether they are made together or separately. 2) The same level of resource information is known about the lands that are being analyzed for both decisions. 3) Both decisions are made knowing the location of, and development that has occurred on, existing leases. This includes the activities associated with typical drilling operations, the effects of those activities on particular resources, and the effectiveness of various mitigation measures. The primary difference between the two decisions is that we know the proposed lease parcel boundary when monitoring the consent decision.

Because there is no specific ground disturbing proposal a basic assumption was made for the purposes of the analysis. If an area is considered available in the alternative being discussed we assume that consent has been granted. In projecting post-leasing activities we are, therefore, processing a hypothetical Application for Permit to Drill (APD) and Surface Use Plan of Operations (SUPO). The alternative and any requirements of the alternative are applied to the SUPO to analyze effects.

In implementation, the decision to authorize lease advertisement on specific lands will be made in the Record of Decision but actual authorization will not be granted for individual parcels until the

monitoring has been completed. Approval of ground disturbing activity does not come until the APD stage.

## **THE ANALYSIS PROCESS**

The land availability decision; the decision to authorize specific lands for leasing; and the decision to amend the Forest Plan in order to accommodate the leasing decisions are separate, sequential decisions, based on one analytical process. The Supervisor's three decisions will be based on knowledge of the effects oil and gas leasing could have on the lands and natural resources of the Unit, and the ability to satisfactorily mitigate or forestall those effects.

### **Leasing Analysis (Land Availability)**

Oil and Gas Regulations require a projection of the type/amount of post leasing activity that is reasonably foreseeable as a consequence of conducting a leasing program under each alternative. The regulations also require that the impacts of this reasonably foreseeable development (RFD) be analyzed in order to make the availability decision. These projections help determine the potential direct, indirect, and cumulative impacts resulting from oil and gas leasing and development. The RFD projections for the Unit are as follows:

Pike & San Isabel National Forests - 1 exploratory well every 4 years over the next 15 years for a total of 4 wells.

Comanche National Grassland - 3 wells, one exploratory and 2 production, per year over the next 15 years for a total of 45 wells.

Cimarron National Grassland - 11 production wells per year over the next 15 years for a total of 165 wells.

The Pike and San Isabel National Forests and the Comanche and Cimarron National Grasslands could not effectively be analyzed as one unit. There is much variation between administrative subunits including the development and level of RFD.

The mountains have a wider range of slope classes, greater variety in road densities, and no historical oil or gas development to base effects on. Individual hypothetical wells were located and analyzed to generate RFD effects. The effects of the few, widely distributed, RFD wells was of such limited scope that a Concentrated RFD was developed to identify a range of effects that are possible for each alternative. The effects of both the BLM-provided RFD and the Concentrated RFD are disclosed only to identify a range of direct and indirect effects.

### **On the Grasslands**

There has been considerable oil and gas activity on both of the Grasslands during the last 50 years. Historical information provided the basis for the RFD and projected disturbance. Statistical analysis identified that all wells on the Cimarron were very similar in the number of acres which were directly affected through ground-disturbance. The analysis further indicated that the future development could be anticipated within acceptable statistical standards. The same analysis was completed for the Comanche with similar results. The 210 BLM RFD wells on the Grasslands were not actually located on the ground but were statistically projected because the ground disturbance is so similar. This statistical analysis will lead to a slightly exaggerated total effect by alternative.

## On the Mountains

There has been very little oil and gas activity on the Mountain districts. One stratigraphic test well was drilled for exploratory purposes in the 1960's. The anticipated activity identified by the BLM of 4 wells over a fifteen year period is minimal. The 4 BLM RFD wells were "placed" on currently leased land for analysis. These areas are the most likely to be drilled upon. The effects of one exploratory well at each of these four sites were determined.

The Forest Service does not feel that a study of these four wells allows examination of the full range of possible effects of oil and gas development on the mountain resources. Therefore, the Forest Service devised a concept of "Concentrated Reasonably Foreseeable Development (RFD)". The Concentrated RFD wells were located by the Forest Service Interdisciplinary Team (IDT) in the same sensitive drainage. If the effects of these concentrated wells could be mitigated and still allow the drilling activity to occur, the IDT was reasonably certain that impacts from 4 wells drilled anywhere in the mountains could be adequately mitigated. This disclosure provides the information to make the availability decision.

## Leasing Analysis Alternatives

In order to determine which lands to make administratively available (Stage 1) the Supervisor has considered a number of alternatives for managing land availability. These alternatives result in different availability patterns. They include:

Determining which lands are administratively available on a request basis, as is currently provided for in the Forest Plan,

Making all lands of the Unit administratively available for leasing with the set of standard lease terms which commonly apply to oil and gas exploration and development, and

Making some lands administratively available for leasing with a pattern of standard lease terms, supplemental stipulations, and discretionary no lease.

Making all lands of the Unit not administratively available for leasing.

These four management alternatives comply with the procedural requirements of both NEPA and the oil and gas regulations. They also allow the document to disclose the site-specific effects of development on hypothetical well sites generated by the Reasonably Foreseeable Development (RFD).

## Resource Information

The IDT used existing data base information, aerial photograph interpretation and personal knowledge to develop resource overlays for over 250 quad base maps on the Unit. These resource overlays provide site-specific resource information available at the "leasing specific lands" stage of the leasing process. The resource overlays will be used to implement the leasing decisions. While we do not know exact locations of future wells, we do know the resources and, from past experience, the effects of drilling and mitigation available under standard lease terms or stipulation. The following are the resources mapped on the overlays:

### Overlay 1

Areas with high erosion potential  
Steep slopes > 60%  
Geologic Hazards on slopes > 60%

Watersheds:  
within 10% of sediment threshold  
exceeding sediment threshold  
Municipal Watersheds

### Overlay 2

Slopes, 0 - 15%, 15 - 40%, over 40%  
Non Forested areas

Alpine zone  
Riparian, wetland/flood plain areas

### Overlay 3

Wild & Scenic Rivers  
Visual Quality Retention Zones  
Active & Planned Timber Sales  
T&E Fish Locations  
Research Natural Areas/Special Areas

Developed Recreation Sites  
Cultural Resource Sites  
Special Use Ski Areas  
T&E (Botanical & Zoological)  
Special Interest Area

### Overlay 4

- A Aberts Squirrel; A1 Concentration Area, A2 Production Area
- B Bald Eagle; B1 Concentration Area, B2 Feeding Area, B3 Migration/Resting Area, B3 Winter Concentration Area
- C Bighorn Sheep; C1 Lambing Area, C2 Production Area, C3 Salt Lick, C4 Severe Winter Range, C5 Winter Concentration Area
- D Elk; D1 Calving Area, D2 Resident Population Area, D3 Migration Routes, D4 Severe Winter Range, D5 Winter Concentration Area
- E Golden Eagle; E1 Active Nest Site, E2 Feeding Area, E3 Nesting Area, E4 Winter Concentration Area
- F Mule Deer; F1 Production Area, F2 Severe Winter Range, F3 Concentration Area
- G Mountain Goats; G1 Concentration Area, G2 Production Area, G3 Salt Lick
- H Mountain Plover; H1 Nesting Area, H2 Observation Area
- I River Otter; I1 Overall Distribution
- J Pronghorn; J1 Concentration Area, J2 Winter Concentration Area, J3 Winter Range
- K Peregrine Falcon; K1 Active Nest Site, K2 Hunting Territory, K3 Nesting Area
- L Scaled Quail; L1 Concentration Area
- M Turkey; M2 Concentration Area, M3 Roost Site, M4 Concentration Area, M5 Winter Range
- N White-tailed Deer; N1 Concentration Area
- O White Pelican; O1 All Biological Features

## Consent to Lease Specific Lands

The Consent Decision will be made on the basis of the expanded availability analysis and the ability of the Forest Supervisor to verify that oil and gas leasing on the specific lands has been adequately addressed, that conditions of occupancy are included as stipulations in the leases, and that operations and development could be allowed somewhere on each proposed lease.

In order to make the specific lands decision across the Unit and assess possible site-specific effects of oil and gas activity across the various environments that occur on the Unit, representative

wells were located in all of the geographic zones. Representative wells are located on riparian, canyon, hard and sandy land types within geographic zones on the Grasslands. These wells were also used to justify the supplemental stipulations as required in the availability analysis.

Even though there is great uncertainty at the time of lease authorization as to whether, when, or where a well will be drilled, the effects of a typical well in a given location can be estimated reliably on the basis of past experience.

The consent decision which will be made as a result of this analysis will go through a monitoring process prior to the authorization of the BLM to advertise a specific lease parcel for sale. This monitoring process will include map and on-the-ground field review to insure consistency with the information disclosed in this document. Based on proposed lease parcel boundaries the Forest Service will monitor NEPA requirements, site occupancy, and application of identified stipulations to the proposed lease documents. If any of the monitoring results are unsatisfactory the consent will be denied or supplemental NEPA analysis will be completed. A copy of the monitoring form can be found as Appendix 1 of this Summary.

## **FOREST SERVICE ROLE IN IMPLEMENTATION**

The Record of Decision shall be implemented in the following manner:

(1) The Forest Supervisor will notify the BLM as to the decision made. This will include:

- Lands available for leasing
- Resource and stipulation maps
- Lands the Forest service intends to authorize for leasing

The information will be used by BLM and industry to design lease proposals. They will be able to use the information to determine whether or not they want to make an investment in that specific lease. Pending Lease applications will be processed beginning with Monitoring Step 1 - EIS Review, described below.

(2) The Specific Lands Decision, made in the Record of Decision based on this EIS, is only a decision that authorization will be given subject to monitoring. It is not the actual authorization itself. That will be made on a parcel-by-parcel basis, after a parcel has been proposed through the Bureau of Land Management (BLM), utilizing the following step-by-step monitoring process.

*Monitoring Step I - EIS Review* The EIS will be reviewed to see if a representative well was analyzed that is similar to the anticipated effects of leasing on the proposed parcel.

*Monitoring Step II - Map Review* The proposed lease parcel will be superimposed onto the Stipulation Base Map and the Resource Quad Maps to identify all resources involved and applicable stipulations.

*Monitoring Step III - Field Review* Using the map information, an on-the-ground field review will be made of the proposed parcel. The Oil and Gas Lease Monitoring Form, Appendix 1, will be used for carrying out this step of the process.

*Monitoring Step IV - Authorization* Upon completion of Steps I, II, and III, the Forest Service will notify BLM as to the applicability of the "specific land decision" for that proposed parcel.

If the decision in the ROD is not applicable to the proposed parcel, authorization to lease is disapproved and additional NEPA analysis will be done.

## **SIGNIFICANT ENVIRONMENTAL ISSUES**

The issues identified throughout the public involvement process, from initial scoping to review of the draft EIS, have been collected. Significant issues that are addressed in the EIS include:

Concern over the effects of oil and gas drilling, construction and operating activities on wildlife, fish, and vegetation.

Concern over the effects on wetlands, flood plains, and threatened and endangered plant and animal species.

Concern over the effects of oil and gas leasing activities on soils and water and air quality.

Concern over the effects of drilling on surface and groundwater supplies and potable water.

Concern over the effects on designated and proposed wilderness areas, wilderness study areas, and potential wild and scenic rivers. Areas include the Sangre de Cristo, Spanish Peaks, Greenhorn Mountain and Buffalo Peaks Wilderness Study Areas and the Cimarron, Arkansas, Huerfano, and Badger Creek river systems.

Recreation opportunities on significant highly scenic areas, developed recreation areas, areas with the potential for wilderness designation, river canyons, and wilderness buffers should be protected.

The fragile plant and animal communities found in alpine areas should be protected from development.

Special management areas that need protection include formally designated and proposed Special Interest Areas, Research Natural Areas, Natural Areas, Manitou Experimental Forest, municipal watersheds.

## **MANAGEMENT ALTERNATIVES**

Chapter II of the EIS discusses the alternatives explored for management of an oil and gas leasing program on the Pike and San Isabel National Forests, Comanche and Cimarron National Grasslands. Management of a leasing program includes determination of the administrative availability of lands for leasing and protection requirements to be applied to those lands found available. The Oil and Gas Leasing Reform Act requires that if a given area of land is available to be leased the conditions that would be applied to the lease, and the analysis to determine them, must be disclosed in an environmental document prior to leasing.

The management alternatives were developed to meet the requirements of the National Environmental Policy Act (NEPA), National Forest Management Act (NFMA) and Oil and Gas Regulations. The regulations require that a Leasing Analysis for National Forest System lands identify "alternatives as to the lands to be made administratively available for oil and gas leasing." Major public issues were considered in the development of alternatives.

## CONSIDERATIONS CONSTANT FOR ALL ALTERNATIVES

Several conditions are constant across all alternatives. These include current Forest Plan management direction for all resources except oil and gas, and standard mitigation requirements.

Federal agencies are required to include and discuss appropriate measures to mitigate adverse environmental impacts. Mitigation includes the following possibilities for dealing with adverse environmental impacts:

Avoiding the impact altogether by not taking a certain action or parts of an action.

Minimizing impacts by limiting the degree or magnitude of the action and its implementation.

Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.

Reducing or eliminating the impact over time through application of maintenance operations during the life of the action.

Compensating for the impact by replacing or providing substitute resources or environments.

Mitigation, in the federal oil and gas leasing program, is provided in various intensities at different levels of planning. Mitigation, at the level of the leasing analysis, must be relatively general to encompass all of the possible conditions that may exist at the time of ground disturbance. The opportunities to provide adequate protection at the time of disturbance must be identified and generated at this level of planning.

Mitigation can and will be refined at later stages, when an actual lease parcel is identified and when an Application for Permit to Drill (APD) and Surface Use Plan of Operations is received and analyzed. Many types of mitigation can be identified and required at the time of APD as long as they do not "unduly hinder or preclude the lessees opportunity to exercise valid existing rights". This makes it important that the government correctly identify the rights that it wishes to confer prior to sale of a lease through the application of stipulations.

Mitigation provided by the standard lease terms (SLT) and conditions of approval (COA) apply to all alternatives. They require that the "Lessee ... conduct operations in a manner that minimizes adverse impacts to the land, air, and water, to cultural, biological, visual, and other resources, and to other land uses or users".

Standard lease terms apply all non-discretionary statutes, and reasonable measures required by the Authorizing Officer to minimize adverse impacts to other resources and users. Conditions of approval (COA's) are specific actions that can be required under SLT.

Lease Notices are attached to leases to transmit information regarding a known situation or condition to assist the lessee in submitting acceptable plans of operation. Any requirements contained in a Lease Notice must be fully supported by law, regulation, standard lease term, or onshore oil and gas order. A Lease Notice should contain the following elements: (1) the resource/use/value and the lands affected; (2) the reason(s); (3) the effect on lease operations or requirements; and (4) a reference to the lease term, regulation, law or order from which enforcement authority is derived.

Under standard lease terms mitigation includes moving the site of developments up to 200 meters, timing restrictions of up to 60 days, facility design changes, and interim and final reclamation efforts. Many other protection measures can be applied and negotiated under standard terms.

## **ALTERNATIVES CONSIDERED IN DETAIL**

Four alternative strategies to manage oil and gas leasing were developed to study in detail. This section describes those alternatives. They differ in the location and amount of lands made available for leasing as well as the application of mitigation through supplemental lease stipulations (see Tables 1 and 2). All alternatives but Alternative I, Current Management (No Action), require amendment of the Forest Plan.

**Alternative I** continues to implement the current Forest Plan. The lands that are legally available would be leased within the requirements of the existing management prescriptions, standards, and guidelines. The BLM would issue leases on split-estate lands. This No Action Alternative is required under NEPA. Supplemental protection would be provided on soils with high geologic hazard ratings on slopes over 60% and in watersheds that are currently exceeding their sediment thresholds. Further discussion of these protection requirements is in the Alternative I and III Mitigation discussion. These measures would be applied on approximately 166,025 acres.

**Alternative II** allows all legally available lands, including split-estate, to be leased using standard lease terms (SLT). SLT's automatically incorporate all statutory protection requirements relating to National Forest System lands as well as Executive Orders. It does not apply current Forest Plan direction. This alternative provides a baseline by which the environmental effects can be compared to the application of supplemental stipulations.

**Alternative III** makes legally available lands, including split-estate, available subject to no surface occupancy, controlled surface use, and timing stipulations, as well as the application of discretionary no lease requirements. The distribution of lands by stipulation, for each alternative is displayed in Table 1. This alternative requires protection above and beyond the standard lease terms for resources such as riparian, fragile soils, alpine areas, visual corridors, critical habitats, cultural resource values with interpretive potential, recreation facilities, management indicator species, water quality, and special areas.

**Alternative IV** does not allow any additional leasing on the Unit. Existing leases, when expired, would not be readvertised. Exploration and development would be allowed on existing leases based on lease rights already granted.

**Table 1**  
**Availability of Lands for Leasing by Alternative**

	Alt. I Acres	Alt. II Acres	Alt. III Acres	Alt. IV Acres
Total National Forest and Grasslands	2,752,378	2,752,378	2,752,378	2,752,378
Lands Removed By Law: Wilderness, and WSA	550,872	550,872	550,872	550,872
Total Acres With Federal Mineral Considered In Analysis	2,201,506	2,201,506	2,201,506	2,201,506
Standard Lease Terms	2,035,481	2,194,442	829,238	
Controlled Surface Use	131,897		1,109,219	
Timing Limitation			591,162	
No Surface Occupancy	34,128		203,967	
Discretionary No Lease				
Wilderness Bill S1029				
Greenhorn			712	
Sangre de Cristos			24,728	
Buffalo Peaks			7858	
Lost Creek			12,605	
BLM WSA				
Aspen Ridge			15,044	
Wild & Scenic Rivers				
South Platte			14,700	
Badger Creek			2,560	
Special Acres				
Cultural Resources			15,500	
Research Natural	4,499	4,499	4,499	
Ski Areas	2,065	2,065	2,065	
Total Acres DNL Not Available	6,564	6,564	100,271	2,201,506
Total Acres Available Oil and Gas Leasing	2,194,942	2,194,942	2,101,235	0

Note: Some stipulations overlap, therefore, the total may add up to more than the total acres administratively available.

## **ALTERNATIVE I AND III MITIGATION**

Alternatives I and III require mitigation above and beyond those described as common to all alternatives. These alternatives identify resource values, uses, or user conflicts that cannot be managed or accommodated by the standard lease terms, and apply supplemental lease stipulations. Stipulations may be applied to all, or part, of a lease parcel as required for resource protection. Standard lease terms and conditions of approval also apply to all lands on lease parcels. Each stipulation establishes guidelines for granting waivers, exceptions, or modifications. Substantial modification or waiver after lease issuance is subject to public review for at least a 30-day period in accordance with the Oil and Gas Leasing Reform Act.

Stipulations may be necessary if the authority to control the activity on the lease does not already exist under the laws, regulations, or orders applied under the standard lease terms. The following stipulations are applied in these alternatives. They are displayed from the most to the least restrictive.

### **No Surface Occupancy Stipulation**

No Surface Occupancy (NSO) is the most restrictive stipulation available and is intended for use only when standard lease terms and other, less restrictive, stipulations are determined insufficient to adequately protect the public interest. The analysis record must show that a no-lease alternative was considered when applying the NSO stipulation.

### **Timing Limitation Stipulation**

The Timing Limitation (often called seasonal) prohibits exploration and development activities for time periods less than yearlong. Dates and location(s) are as specifically identified. A timing stipulation is not necessary if the time limitation involves the prohibition of new surface disturbing operations for periods of less than 60 days.

### **Controlled Surface Use Stipulation**

The Controlled Surface Use (CSU) stipulation is intended to be used when oil and gas activities are allowed on all, or portions, of the lease area year-round but, because of special values or resource concerns, lease activities must be strictly controlled. The CSU stipulation is used to identify constraints on surface use or operations which may otherwise exceed the mitigation provided by Section 6 of the standard lease terms and the regulations and operating orders. The CSU stipulation is less restrictive than the NSO or Timing Limitation stipulations, which prohibit all activity on all, or portions, of a lease for all, or portions, of a year. The CSU stipulation should not be used in lieu of an NSO or Timing Limitation stipulation but should be limited to areas where restrictions or controls are necessary for specific activities only.

The stipulation should explicitly describe what activity is to be restricted or controlled, or what operation constraints are required, and must identify the applicable area and the reason for the requirement. The legal subdivision, distance, location, or geographic feature, and resource value

of concern must be identified in the stipulation and be tied to a land use plan and/or NEPA document.

## Stipulations by Alternative

Table 2 displays the stipulations that were applied under Alternatives I and III. These stipulations may be applied on both federal surface and split-estate lands where necessary. The resource values protected by the stipulation are also identified. Only Alternatives I and III are shown since II and IV do not require supplemental stipulations.

**Table 2**  
**Supplemental Stipulations by Alternative**

Limitation/Prohibition	Use/Resource to be Protected	Alternatives	
		I	III
NSO Stipulation	Cultural Resources		X
	Municipal Watersheds	X	X
	Recreation		X
	Riparian, Wetlands, flood plains		X
	Soils	X	X
Timing Stipulation	Wildlife (Critical Winter Range)		X
	Wildlife (Mgmt Indicator Species)		X
CSU Stipulation	Alpine Soils		X
	Special Interest Areas (National Natural Landmarks)		X
	Visual Resources		X
	Water	X	X
			X
Lease Notices	Research Natural Areas (and Special Interest Areas)	X	X
	Special Uses	X	X
	Special Use - Ski Areas	X	X
	Threatened and Endangered Species	X	X
	Vegetation (Timber Sales)	X	X

## AFFECTED ENVIRONMENT

Chapter III of the EIS describes the environment likely to be affected by the two leasing decisions described. This affected environment generally includes all the National Forest System lands of the Pike and San Isabel National Forests and Comanche and Cimarron National Grasslands, and adjacent split-estate lands. The Forest Service has limited the scope of the affected environment

to that which is reasonably expected to be impacted based on the RFD described earlier. Oil and gas drilling operations generally take place on very small areas of land (2 to 15 acres) and do not require large construction efforts. Their environmental impacts do not generally extend very far across the land surface, and are relatively short-lived. Therefore, the direct, indirect, and cumulative environmental effects of the leasing decisions are expected to be confined to the lands, both public and private, within and immediately adjacent to the Pike & San Isabel National Forests and Comanche and Cimarron National Grassland boundaries.

The physical, biological, social, and economic characteristics of the Affected Environment are extensively catalogued in the Environmental Impact Statement (EIS) that accompanies the Forest Plan and which is incorporated into the EIS by reference.

The Unit administers some 2,752,378 acres of National Forest System lands in Colorado and Kansas (see Figure 1). The Unit is composed of eight administrative subunits, managed by District Rangers and their staffs. District offices of the Pike and San Isabel are in the communities of Lakewood, Leadville, Colorado Springs, Fairplay, Salida, and Canon City. The Comanche National Grassland office is located in Springfield, Colorado and the Cimarron is in Elkhart, Kansas.

The affected environment is described from general to specific, in four "stair-stepped" levels. Each level relates to different levels of environmental effects starting from the very broad Forest-wide analysis area to the site-specific analysis of RFD and representative well locations. Additional site-specificity will be provided when an Application for Permit to Drill (APD) is received for a specific lease. The the four levels of analysis are:

**Level 1 (The Unit)** - For purposes of the Leasing Analysis decision and for general reference Level 1 broadly describes the physical characteristics of the National Forests and the National Grasslands (the Unit). Included in the description are the social, economic, physical and biological settings as well as climate and air quality.

**Level 2 (The Mountains and Grasslands)** - The analysis area was divided into areas of similar, very broad, environmental characteristics. The mountainous environment of the National Forests differs greatly from the plains of the National Grasslands and have a very low level of anticipated oil and gas activity, so they are described separately. Each grassland is separate because of the high variation in expected development.

For each "environment" there are discussions, in the EIS, of vegetation, soils, water, wildlife, fisheries, riparian and alpine areas, threatened and endangered species, range values, visuals, recreation, wilderness, special areas, minerals, transportation facilities, existing special uses, and cultural, paleontological, and cave resources.

**Level 3 (The Geographic Zones)** - For purposes of displaying the need for supplemental lease stipulations (why they are necessary and justifiable), the analysis area was divided into 13 Geographic Zones. Each geographic zone is composed of one or more watersheds with similar environmental characteristics. The criteria used to determine similarity included landform, geology, climate, vegetation, and soils. The mountains were subdivided into eight geographic zones. The Grasslands into five; three on the Comanche and two on the Cimarron.

**Level 4 (Individual Wells)** - Finally, for purposes of disclosing the effects of different management scenarios for leasing on the National Forests and National Grasslands, the EIS analyzes the site-specific effects of individual wells. The effects analysis required in the Oil and Gas regulations is based on RFD, for which the EIS identified specific locations in cooperation with the Bureau of Land Management (BLM). The level of specificity varies between the mountains and Grasslands.

The individual well environments on the mountains will be more specific than the environment described on the Grasslands because the variety of environments and effects (road distances, slopes, etc.) is so much greater. There are two discussions on "Concentrated RFD" affected environment because of the management alternatives. Alternatives I and III restrict the placement of wells in environmentally sensitive areas which Alternatives II and IV allow wells in. The location of ground disturbing activity would be different so each RFD site is discussed.

Descriptions of all four "levels" can be found in the EIS.

## **EFFECTS OF ALTERNATIVES**

Chapter IV of the EIS discusses the effects of the four management alternatives for a leasing program on the Unit. The regulations require that a Forest or area-wide analysis be completed which discloses the effects of alternative management strategies. The effects are to be based on reasonably foreseeable post-leasing activity (RFD) determined for each alternative. The Chapter provides the effects disclosure for the three related decisions: 1) land availability; 2) specific lands; and 3) Forest Plan amendment.

A Forest Plan amendment will be prepared to incorporate this analysis and its resulting land availability decision. This programmatic, planning level decision requires disclosure of the effects of RFD and justification of supplemental stipulations to satisfy requirements of the oil and gas regulations.

The specific lands decision identifies the specific lands that will be authorized for leasing subject to monitoring at the time a specific lease parcel is proposed to the Forest Service by the BLM. The monitoring will address the verification determinations made in the Record of Decision (ROD) based on this EIS: 1) adequate NEPA disclosure for specific lands; 2) inclusion of appropriate lease terms and stipulations with leases for specific lands; and 3) determination that operations and development can occur somewhere on each proposed lease, except where prohibited by the No Surface Occupancy stipulation.

In order to disclose the effects of reasonably foreseeable development activity, this analysis assumes that we are applying the management alternatives to proposals at the APD stage. This development is hypothetical in nature for analysis purposes only and is not intended to reflect any actual proposals. In implementation, no ground-disturbing activities can occur until after the site-specific decision, based on future NEPA analysis at the APD stage.

The environmental consequences discussions were combined for the land availability and specific lands decisions. It is site-specific to the extent required and possible for the specific lands decision, rather than having separate discussions for each decision. The basic information available to make both decisions is the same. The only difference is that a parcel boundary is needed to monitor the specific lands decision prior to the authorization to advertise the lease. It is not known if, and or when, drilling may occur at the time of either decision.

## **REPRESENTATIVE WELL ANALYSIS**

The two primary purposes of the representative well analysis are to justify supplemental stipulations for the land availability decision and to provide additional site-specific analysis to support the specific lands decision. It is unlikely that the RFD wells will occur in the same locations analyzed

In the RFD analysis section of this chapter. The representative well analysis discloses effects of post-leasing activity in a variety of environments on the mountains and Grasslands, including environments more sensitive to post-leasing activity than the environments affected by the RFD wells, such as alpine and riparian on the mountains. The interdisciplinary team analyzed more representative wells on the mountains than the Grasslands, due to the greater variability of environments and the lower capability to predict average disturbance acres on the mountains.

Several hypothetical representative wells were located within each geographic zone and analyzed separately from the analysis of reasonably foreseeable development (RFD). There were 53 representative wells analyzed. This additional analysis provides a basis for the justification of stipulations and supplements the effects disclosure should actual development not occur where it was projected by the RFD. The affected environment and alternative effects for representative wells are discussed together Chapter IV. The RFD wells were also linked to geographic zones. This allows the effects disclosure for RFD to be applied to other similar environments when monitoring the specific lands decision.

## **EFFECTS OF MANAGEMENT ALTERNATIVES**

The two primary purposes of the RFD Well Analysis are to disclose effects from a "reasonable foreseeable post-leasing activity" scenario, or RFD, for the land availability decision; and to provide site-specific analysis to support the specific lands decision. Chapter IV of the EIS discusses the effects of the BLM RFD on the Grasslands, the effects of the BLM RFD on the mountains, the effects of the Concentrated RFD on the mountains, and the cumulative effects of the BLM RFD on the Unit.

It is important for the reader to understand that there are similarities between alternatives. The total number of projected wells are constant across all alternatives on the Cimarron, the Comanche and the mountains. The well locations are the same for all alternatives, unless current Forest Plan direction (Alternative I) or Supplemental Stipulations (Alternative III) require well relocation to less sensitive locations to adequately protect surface resources. Alternative I and III effects on most resources are similar, as shown in Table 4. There is little quantifiable difference in effects between Alternatives II and IV. However, the alternatives do vary in the amount of land administratively available for leasing and the amount of land subject to Supplemental Stipulations, as depicted in Table 1.

### **Direct and Indirect Effects Common To All Alternatives**

Since the RFD is constant for all alternatives there are many common effects. They include:

The BLM RFD would generally cause short-term effects on all ground cover vegetation disturbed, and long-term effects on the disturbed forest vegetation of the mountains. Soil loss on cleared acres from wind and water erosion would generally be a short-term effect. Rehabilitation and reclamation of pipeline, pad, and road disturbances would occur as soon as possible after construction or abandonment. Exploratory wells would generally cause short-term impacts to vegetation, while producing wells would cause long-term impacts to vegetation.

Effects on threatened and endangered plant, animal and fish species, including their habitat, can be reduced or avoided through inclusion of specific provisions in lease notices issued at the time of lease. Such provisions describe the measures necessary to protect threatened and endangered species or to mitigate harmful effects. Significant cultural resources can be protected, or harmful effects mitigated through inclusion of similar provisions in the lease notice.

The effects to air resource from possible discharge of hydrogen sulfide, exhaust and dust created by exploration and development traffic would be localized. These activities would also create short-term effects on the visual quality along and adjacent to the roads being used for oil and gas activities.

The highest visual impact would be when well is actually being drilled and during periods of heavy maintenance. This short-term impact would occur because the drill rig used for this work has a mast over 60 feet tall and there is little vegetation on the Unit that would provide visual screening. New road construction would have a visual impact until rehabilitation has been completed.

All alternatives may result in detrimental impacts to soils, vegetation and groundwater from saltwater and/or oil leaks related to production activities. Since production is not expected on any of the Mountain districts, these impacts would be found in all alternatives on the Grasslands. Mitigation is designed to minimize the potential for leaks. Should leaks occur outside riparian areas they are anticipated to cause minor short-term effects. Leaks into riparian areas could cause significant long-term impacts.

Some level of sediment input to stream and lake fishery resources would occur. This would be through wind or water erosion on clearings. The total input would vary by alternative but all would impact the resource to some degree.

There would be minor short-term effects to grazing and range activities since the oil and gas activities would reduce the amount of grazing land available. This loss of land is minimal in comparison to the available land base, and it is expected to be a short term effect. No reduction in grazing capacity is anticipated as a result of these effects.

All alternatives would provide income to the federal treasury and local communities. The amounts and distribution of that income would shift based on alternative.

Producing wells on the Grasslands would cause a significant decrease in nonrenewable oil and gas resources during the planning period. These nonrenewable resources would eventually be depleted on affected fields. On the Unit, all four alternatives would have minimal direct effects on cultural resources, paleontological resources and cave resources. The difference between alternatives is the effect to possible interpretive experiences.

## **Direct and Indirect Effects by Alternative**

The significance of effects for each alternative are displayed in Table 3. Alternatives with potential for significant effects depending on well location are listed with a +, non-significant with a 0.

**Table 3**  
**Summary of Significant Direct/Indirect Effects for the Unit by Alternative**

Resource Affected	Alt. I		Alt. II		Alt. III		Alt. IV	
	BLM	Conc	BLM	Conc	BLM	Conc	BLM	Conc
Vegetation	0	0	0	+	0	0	0	+
Soils	0	0	0	+	0	0	0	+
Water Quality	+	+	+	+	0	0	+	+
Wildlife	0	0	+	+	0	0	+	+
Aquatic & Riparian	+	+	+	+	0	0	+	+
T & E Species	0	0	0	0	0	0	0	0
Range	0	0	0	0	0	0	0	0
Visual	+	0	+	+	0	0	+	+
Cultural	0	0	0	0	0	0	0	0
Paleontological	0	0	0	0	0	0	0	0
Caves	0	0	0	0	0	0	0	0
Recreation	0	0	0	0	0	0	0	0
Special Areas	0	0	+	0	0	0	0	0
Mineral Resources	+	+	+	+	+	+	+	+
Human & Community	0	0	0	0	0	0	+	+
Transportation	0	0	0	0	0	0	0	0
Air/Noise Pollution	0	0	0	0	0	0	0	0

Key: BLM = Grassland BLM RFD and Mountain BLM RFD; Conc = Grassland BLM RFD and Mountain Concentrated RFD; + = significant effect; 0 = non-significant effect.

### Alternative I

This alternative implements the current Forest Plan direction. Existing mitigation tools would be used including consent denial on slopes over 60 percent and on highly erosive soils. There would be an NSO in place on the eligible section of the South Platte River. Impacts under this alternative would be insignificant unless activities occurred on a few sensitive areas. Forest Plan direction doesn't prohibit oil and gas activity in riparian areas. Standard lease terms are not adequate to relocate wells outside of the extensive riparian areas that occur along the Cimarron River corridor. Development in riparian areas could have potentially significant impacts to water quality, aquatic habitat and to the riparian resource itself. Visual quality could be impacted where oil and gas activity can't be relocated out of riparian areas along the Cimarron River. Oil and gas is a nonrenewable resource.

### Alternative II

This alternative uses standard lease terms as the means to mitigate oil and gas activities. Under this alternative, significant impacts could occur on sensitive locations. Specific resources that could be significantly impacted based on well location and negotiated mitigation include vegetation, soils, water quality, wildlife, aquatic & riparian, visual, and mineral resources. Clearing would have a long term impact on mature forest vegetation under the concentrated well scenario. Water quality, aquatic habitat and riparian areas could be impacted along the Cimarron River corridor where standard lease terms are not sufficient to relocate oil and gas activity outside of the riparian and floodplain areas. Wildlife would not be adequately protected during critical periods since standard lease terms only allow prohibition of activity for a maximum of 60 days. Visual quality

could be significantly impacted if wells can't be relocated outside of the riparian areas along the Cimarron River corridor. Oil and gas is a nonrenewable resource. Research Natural Areas could lose some of the value for which they were set aside.

### **Alternative III**

This alternative allows the use of supplemental stipulations. The impacts under this alternative for both the mountains and Grasslands would be insignificant to all resources. The additional stipulations maximize resource protection but increase the cost of exploration and development. Some loss of drilling opportunities would occur.

### **Alternative IV**

This alternative would not permit future oil and gas leasing. Alternative IV would not cause any surface resource impacts on lands not yet leased. However, the lost drilling opportunities and associated lost revenues could have a significant social and economic effect on some local areas on the Grasslands. Resource impacts on currently leased lands would be similar to those discussed under Alternative II.

## **BLM Versus Concentrated RFD Effects**

The interdisciplinary team analyzed the effects of 4 wells on the mountains in general areas identified by the BLM as having the highest likelihood of exploratory development (BLM RFD), and the effects of 4 wells located in the Jackson Creek drainage in the Rampart Range on the Pike National Forest (Concentrated RFD). The Concentrated RFD was located in one of the "most sensitive" watersheds and analyzed for comparison with the BLM RFD. That comparison provides range of effects that are anticipated as a result of drilling 4 exploratory wells on the mountains. It is highly unlikely that the Concentrated RFD scenario, and its effects, would occur.

The BLM RFD would disturb a total of 18 acres in widely dispersed drainages on non-fragile soils. All disturbed acres would be reclaimed during or shortly after the planning period.

The Concentrated RFD effects vary by alternative. Impacts from all alternatives occur in the Jackson Creek drainage which is over its sediment threshold limit and has extensive areas of steep slopes and fragile soils.

Concentrated RFD for Alternatives I and III disturb 29 acres. The sediment problem in Jackson Creek would be mitigated prior to ground-disturbing oil or gas activities. Wells would be moved to gentler slopes with better reclamation potential. All disturbed acres would be reclaimed during or shortly after the planning period. Impacts on resources will be mitigated to acceptable levels.

Concentrated RFD for Alternatives II and IV would disturb a total of 44 acres. Disturbed acres could not be reclaimed in a timely manner, resulting in adverse impacts on vegetation, soils, water and fishery resources. Activities would cause a greater impact to visual quality and recreation experiences than the BLM RFD.

The effects of four actual wells on the mountains may differ from those disclosed in this analysis since their locations would vary from those that were analyzed. The actual effects of development are expected to be within the range between the BLM and Concentrated RFD effects. A single well's effect on an individual resource may exceed the effect disclosed for an individual RFD well, however, that difference is expected to be nonsignificant.

The BLM RFD is the more likely RFD scenario on the mountains. BLM RFD for the Unit will be the basis for the following cumulative effects discussion.

## **Cumulative Effects**

This section describes the potentially significant cumulative environmental effects that are disclosed in the EIS as a result of implementing the management alternatives. Cumulative Effects, or Impacts, are defined in the Council on Environmental Quality (CEQ) regulations, 40 CFR 1508.7, as "...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency...or person undertakes such other actions."

Cumulative effects are discussed on what is generally a watershed basis. Direct and Indirect effects of well development are limited in scope for most resources. The impacts of Alternative III were added to the impacts of all other management activities within individual analysis areas. Because Alternative III maximizes resource protection, the cumulative effects displayed here are common to all alternatives. The management activities studied include past actions whose environmental effects are still present, activities presently occurring, and future activities whose effects can be reasonably anticipated.

The occurrence of these past, present and reasonably foreseeable activities on and adjacent to the analysis areas were superimposed onto the map of the "Reasonably Foreseeable Development Scenario." We must analyze the combined effects of oil and gas implementation and all other activities when these effects relate. Analysis of the effects of these various sources generated four independent areas of combined effects on the Pike and San Isabel National Forests, three on the Comanche National Grassland and two on the Cimarron National Grassland. The nine environments, or analysis areas, include the Oak Creek, Rock Creek, Rampart, and Beaver Creek areas on the mountains; the Campo, Vilas, and King Arroyo areas on the Comanche; the Cimarron River and North Fork of the Cimarron River areas on the Cimarron.

The significant cumulative effects generated through implementation of Alternative III, by analysis area, are:

### **Mountains**

#### **Oak Creek Area - BLM RFD Well 1**

The Oak Creek area covers approximately 21,500 acres. Total area disturbed by all past and present activities equals 120 acres. Those activities include 28.1 miles of road, 16 miles of recreation trails, 49 hardrock mining claims, one oil and gas exploration well, one gravel pit, one developed recreation site and three special use permits. The oil and gas well occurs on non-fragile soils with slight to moderate limitations for successful reclamation potential. Douglas fir and oakbrush are the dominant vegetation types, with lesser amounts of ponderosa pine, aspen, mountain mahogany and mountain grass.

All cumulative effects are nonsignificant.

### **Rock Creek Area - BLM RFD Well 2**

The Rock Creek watershed covers approximately 32,400 acres. 239 acres will be disturbed by all past, present, and future activities. These include six timber sales, 68.5 miles of road, 14 miles of recreation trails, 14 hardrock mining claims, one oil and gas exploration well, grazing of 425 animal unit months (AUM's), and one special use permit. An animal unit month is the equivalent of one cow and calf grazing for 30 days. Most past disturbances have been reclaimed with the exception of the long-term uses. Reasonably foreseeable ground-disturbing activity is limited to one exploratory oil and gas well on non-fragile soils with slight to moderate limitations for successful reclamation potential.

All cumulative effects are nonsignificant.

### **Rampart Area - BLM RFD Well 3**

The Rampart area covers approximately 21,700 acres. This watershed has been identified as being within 10% of exceeding sediment threshold limits. There are 307 acres currently disturbed in the watershed and 161 acres scheduled for disturbance. The existing activities include 76 miles of road, 6 miles of trails, 3 hardrock claims, 7 developed recreation sites, and 12 special use permits. Planned activities include construction of another 7.5 miles of road, 8 miles of trails, one exploratory oil and gas well, 11 new developed recreation sites, and an 800 acre wildlife burn. There are unsanctioned trails caused by unauthorized motorcycle, four wheel drive, and off-road vehicle use. Off-road vehicle use has primarily impacted ground cover vegetation in the ponderosa pine, Douglas fir, and mountain grass types.

Significant cumulative effects include:

Sediment yield will increase affecting water quality, aquatic populations, and riparian areas of West Monument and Camp Creeks. These creeks support a self sustaining brook trout population and are within 10% of exceeding sediment threshold limits. Increased sediment deposition will reduce available fishery habitat. Several areas are scheduled for rehabilitation to reduce sediment yield. Other areas will be rehabilitated after they are inventoried. New oil and gas development will be allowed only after enough disturbed acres in the watershed are rehabilitated so that new activities will not exceed sediment limits.

Direct soil loss from construction activities is estimated to be 328 tons in the 12 months following construction. Erosion will be reduced to 64 tons per year after reclamation is complete. This amount, when combined with past activities, results in significant soil loss.

Developed and dispersed use is expected to increase in both Roaded Natural and Semiprimitive Motorized recreation opportunity spectrum (ROS) classifications. The Rampart Reservoir recreation area will nearly double the current user capacity creating a significant short-term effect to current users during construction periods.

All other cumulative effects are nonsignificant.

### **Beaver Creek Area - BLM RFD Well 4**

The Beaver Creek area covers approximately 13,400 acres. This watershed currently has 1,153 acres of ground-disturbance, primarily in the ponderosa pine and Douglas fir vegetation types. This disturbance is due to 47 miles of roads, 7 miles of trails, one developed recreation site, 11 special use permits, grazing of 348 AUM's, and the 1989 Berry fire. The fire burned approximately 1,000 acres near the town of Monument, including 700 acres dominated by ponderosa pine and Gambel oak growing on shallow, granitic soils. Emergency fire rehabilitation was conducted on steeper slopes and natural erosion rates are expected to be restored within 5 years. Anticipated activities are limited to the development of an exploratory well and an associated 4.3 acres of disturbance.

This watershed exceeds sediment threshold and is affected by unauthorized motorcycle, four wheel drive and other off-road vehicle use which has not been inventoried.

Significant cumulative effects include:

North and South Beaver Creek and their tributaries support a self sustaining brook trout population. Past activities have driven the sedimentation levels beyond those acceptable. Development would cause a negligible sediment yield increase from the current level of 84 tons but may impact the aquatic population. Increased sediment deposition will reduce available fisheries habitat.

Oil and gas ground-disturbing activities would not occur until enough disturbed acres in the watershed have been rehabilitated so that proposed activities would not exceed the sediment threshold or impact cumulative effects.

All other cumulative effects are nonsignificant.

### **Comanche National Grassland**

#### **Campo Area**

The Campo analysis area covers 28,000 acres in the southern part of the Comanche National Grassland. Land types are characterized by rolling, sandy lands with narrow riparian areas and some limited canyonlands in the extreme southern portion of the area. The sandy lands are dominated by midgrass prairie vegetation. Shortgrass prairie and pinyon-juniper are common in the canyon lands. There are currently 201 miles of roads, 26 oil or gas wells, 8 special use permits and 780 AUM's of grazing occurring in the area. Past wells have been fully reclaimed. The development of 31 new wells is anticipated along with construction of 7 miles of associated roads. A total of 485 acres of ground disturbance will result from these past, present, and future management activities.

All cumulative effects are nonsignificant.

### **Vilas Area**

The Vilas area covers 59,500 acres of hard lands, rolling sandy lands and riparian areas. The hard lands are dominated by shortgrass prairie vegetation, while the sandy lands are dominated by midgrass prairie. Existing ground-disturbance includes 175 miles of roads, seven special use permits and 1650 AUM's of grazing. Anticipated activities include eight oil or gas wells and 1 mile of associated roads.

The largest drainage in this area is Lone Rock Draw which is intermittent. Sediment yield is negligible due to the gentle topography and few defined stream channels to transport the sediment. There are no known fishery resources in this area. Small riparian areas do occur and could be impacted by grazing and vehicle use. The No Surface Occupancy stipulation will prohibit oil and gas wells from occupying these areas. Grazing is managed to prevent significant impacts to these areas. Vehicle use is minimal, and is currently causing no significant impacts to riparian areas.

All cumulative effects are nonsignificant.

### **King Arroyo Area**

This analysis area covers 7,100 acres of hard lands dominated by shortgrass prairie and riparian areas. Ground-disturbing activities include 42 miles of roads, three special use permits, and 150 AUM's of grazing. Anticipated activities are limited to the development of 6 new oil and gas exploration wells and 1 mile of associated roads.

King Arroyo and several other intermittent unnamed arroyos drain this analysis area. Sediment yield is negligible and there are no known fishery resources. Small riparian areas do occur and could be impacted by grazing and vehicle use. The No Surface Occupancy stipulation will prohibit oil and gas wells from occupying these areas. Grazing is managed to prevent significant impacts to these areas. Vehicle use is minimal, and is currently causing no significant impacts to riparian areas.

All cumulative effects are nonsignificant.

## **Cimarron National Grassland**

### **Cimarron River Area**

The Cimarron River area encompasses approximately 99,500 acres. The Cimarron River has experienced a relatively high level of ground-disturbing activities, primarily in the shortgrass and midgrass prairie types on hard lands and sandy lands respectively. There are 1,675 disturbed acres in the affected environment including those committed to producing oil and gas wells. Other activities include 603 miles of road, 16 miles of trail, 263 wells, a gravel pit, 10 recreation sites, 210 special use permits, and grazing of 4140 AUM's.

Planned activities including construction of an additional 155 wells and 45 miles of roads, 23 miles of companion Santa Fe Trail, and two new developed recreation sites will disturb another 407

acres, mostly in midgrass prairie on sandy lands. Wildfires burn an average of 100 acres of midgrass prairie per year on sandy lands.

Past, present and future activities would disturb a total of 2,082 acres, or 2% of the total land base. Roads, trails and long-term special use areas are a commitment of resources.

Significant cumulative effects include:

The intermittent Cimarron River is the main drainage in this analysis area. Sediment delivery from disturbed acres to the Cimarron River is low due to the gentle terrain and few defined stream channels to transport the sediment. A variety of fish and wildlife species inhabit the area. Small pools along the river provide habitat for several category 2 threatened or endangered species as well as state listed fish. These species include the Arkansas darter, the Arkansas River shiner and the flathead chub. The pools may be recharged with fish periodically when the river flows. Middle springs is an important riparian area that provides aquatic habitat. Fishery and riparian management has included construction of several small ponds used for recreational fishing and waterfowl.

The No Surface Occupancy stipulation would prevent location of new wells within these areas along the Cimarron River. Approximately 70% of the river corridor is currently leased under standard lease terms, with wells operating and new development allowed within riparian areas under specific conditions. Spills of oil, salt water, and drilling fluids associated with oil and gas development could impact the riparian area, water quality, and aquatic habitat. Effects would be significant during high water periods when these chemicals get transported off of the pad sites and into the water systems.

There are several known cultural resources in this area. These resources have been subject to loss of surface information and subsurface deposits from grazing, natural erosion, surface collection by collectors, reclamation activities and grazing improvement activities. The National Historic Preservation Act and the process described in 36 CFR 800 would protect archeological values from future significant cumulative effects.

All other cumulative effects are nonsignificant.

### **North Fork Cimarron River Area**

This analysis area covers 8,600 acres southwest of Richfield, and consists primarily of hard lands with sandy lands, and lesser amounts of riparian along the North Fork of the Cimarron River. Predominant vegetation consists of shortgrass and midgrass prairie. The main ground-disturbing activities in this area includes 17 oil and gas wells, 135 miles of road, 23 special use permits, and 238 AUM's of grazing, all of which affect a total of 294 acres. Future activities include development of 10 more wells and 3 miles of road which would result in disturbance of a total of 318 acres in this 8,600 acre analysis area.

Significant cumulative effects:

There are several known archeological resources in this area. There have been some substantial cumulative effects in the past resulting from surface collecting, erosion, grazing, road construction, reclamation activities and range improvement activities. These actions have resulted in the loss of most of the surface information and some subsurface deposits. The National Historic Preservation Act and the process described in 36 CFR 800 would protect archeological values from significant future cumulative effects.

All other cumulative effects are nonsignificant.

### **Summary of Cumulative Effects by Alternative**

The significant cumulative effects for Alternatives I, II and IV are discussed as they differ from those disclosed in the previous discussion. Past, present and future non-oil and gas activities do not vary by alternative but the location of the oil and gas wells do.

#### **Alternative I**

The existing ground disturbing activities have caused significant cumulative effects to the soil, water, aquatic habitat and riparian resources in the Rampart analysis area and in the Beaver Creek analysis area. These impacts are discussed in greater detail in the write-up for Alternative III.

There could be significant cumulative effects to the aquatic and riparian resources and to the groundwater quality in the Cimarron River area. The Forest Plan does not prohibit mineral development in riparian areas. Any spill of wastes such as oil, salt water, drilling fluids, etc. would impact water quality. Standard lease terms only allow relocation of a well up to 200 meters. This is not enough to move the well out of the extensive riparian areas along the Cimarron River. Effects would be significantly greater on currently unleased lands but similar on leased lands to those discussed earlier.

The visual resource may be more impacted on the Grasslands due to the lack of screening potential due to low vegetation and flatter terrain. Unknown future opportunities for scenic viewing may be lost on the Cimarron National Grasslands due to the extensive future oil and gas development.

#### **Alternative II**

There could be significant cumulative effects to the lesser prairie chicken in the Campo analysis area. Standard lease terms only allow timing restrictions for up to 60 days. This is not a sufficient length of time for protection of both the nesting areas and the dancing grounds.

There could be significant cumulative effects to the aquatic and riparian resources and to the groundwater quality in the Cimarron River area. Standard lease terms only allow relocation of a well up to 200 meters. This is not enough to move the well out of the extensive riparian areas along the Cimarron River. Any spill of wastes such as oil, salt water, drilling fluids, etc. in the riparian area would impact water quality.

There would be significant cumulative effects from excessive sediment yields in two affected environments on the mountains. Standard lease terms don't prohibit oil and gas development in watersheds that are exceeding sediment threshold or are within 10% of exceeding sediment threshold limits. The Beaver Creek area is over its sediment threshold and the Rampart area is within 10% of exceeding its sediment threshold. Future ground-disturbing activities would add more sediment to streams that are already impacted. Excess sediment is detrimental to aquatic life as well as the stability of the stream channels. There are existing significant cumulative effects to the water, soil, aquatic habitat and riparian resources in these two planning areas from ground disturbing activities. These impacts are discussed in greater detail in the write-up of Alternative III for the Rampart and Beaver Creek analysis areas.

The visual resource may be impacted on the Grasslands due to the lack of screening potential due to low vegetation and flatter terrain. Opportunities for scenic viewing opportunities may be lost on the Cimarron National Grasslands due the extensive future oil and gas development.

There could be significant cumulative effects on the Cimarron Research Natural Area since standard lease terms don't allow for adequate protection of this area.

### **Alternative III**

The effects disclosed in the Cumulative effects discussion represents the effect generated by this alternative.

### **Alternative IV**

The existing ground disturbing activities have caused significant cumulative effects to the soil, water, aquatic habitat and riparian resources in the Rampart analysis area and in the Beaver Creek analysis area. These Impacts are discussed in greater detail in the write-up for alternative III.

There are existing leases in the Cimarron River corridor. The cumulative effects to the aquatic and riparian resources and to the groundwater quality would be similar to those disclosed earlier.

## **Effects of Alternatives on Unique Resources**

There would be no significant effects on Consumers, Civil Rights, Minority Groups and Women, Prime Farm Land, Range Land and Forest Land, Threatened and Endangered Species and Critical Habitat, and Cultural Resources from any management alternative. Possible future effects could occur based on changes in supply and demand of oil and gas resources in the future.

There are possible significant effects to Wetlands and Flood Plains in Alternatives I, II and IV because they do not prohibit well development in riparian areas or flood plains which could cause significant effects to the water quality and aquatic habitat.

## **THE PREFERRED ALTERNATIVE**

The preferred alternative is Alternative III. This alternative provides the greatest resource protection while leaving the majority of the National Forest System lands available for leasing. The Record of Decision will document three related decisions: a) land availability decision; b) specific lands decision; and c) Forest Plan amendment. The specific lands decision will be made for all lands administratively available for leasing, subject to monitoring prior to lease advertisement and sale, and another site-specific NEPA decision at the Application for Permit to Drill (APD) stage.

# EXHIBIT 1

## Oil and Gas Lease Monitoring Checklist

Oil and Gas Lease Monitoring Checklist  
PSICC form # 2820-01

District \_\_\_\_\_ Date Received \_\_\_\_\_

Proposed Parcel Identification \_\_\_\_\_

Parcel Location \_\_\_\_\_

Legal Description \_\_\_\_\_

### NEPA Verification

Do site analyses in the EIS adequately address the site(s) proposed for lease?  
YES \_\_\_\_\_ NO \_\_\_\_\_

- If not, is there a well in the analysis where the differences are insignificant? YES \_\_\_\_\_ NO \_\_\_\_\_

Identify the well in the EIS that best represents this site. \_\_\_\_\_

Have NEPA requirements been adequately met? YES \_\_\_\_\_ NO \_\_\_\_\_

### Resource Monitoring

Follow these steps:

Map proposal to 1/2" to the mile and 1:24,000 scales on mylar.

Overlay smaller scale mylar on the Stipulation Base Map to determine if stipulations may be required and what quad or quads have to be referenced.

Overlay the 1:24000 scale mylar on the Resource Base Quad map(s).

Superimpose all resource overlays for the appropriate quads, identify, and map the resources identified on any lands within the lease parcel. A listing of the resources that may be mapped are found on the "Field Monitoring Review" form.

Obtain copies of any stipulations that may apply.

Complete the "Field Monitoring Review Form" and attach.

CERTIFICATION

Responsible District Ranger certify one of the following:

Authorization for the BLM to advertise lease parcel \_\_\_\_\_ shall not be granted until additional NEPA analysis is completed.

\_\_\_\_\_  
Date

\_\_\_\_\_  
District Ranger

OR:

The BLM is authorized to lease proposed parcel \_\_\_\_\_. I certify that an on-the-ground field check has performed and NEPA requirements have been met; appropriate stipulations have been identified and are attached to the lease; and, there is some location(s) on the lease proposal that can be occupied.

\_\_\_\_\_  
Date

\_\_\_\_\_  
District Ranger

FIELD MONITORING REVIEW FORM

Proposed parcel identification \_\_\_\_\_ Date reviewed \_\_\_\_\_

Proposed parcel legal location \_\_\_\_\_

<u>Resource Value</u>	<u>Resource identified in EIS *</u>	<u>Lease Notice Required</u>	<u>DNL Apply?</u>	<u>Monitoring verifies that Values Exist and Supplemental Stip Required</u>			<u>Apply to Lease</u>	<u>Comments</u>
				<u>NSO</u>	<u>CSU</u>	<u>Timing</u>		
<u>SOILS</u>								
Areas of high erosion potential								
Steep slopes > 60%								
Geologic Hazards on slopes > 60%								
Geologic Hazards on slopes > 35%								
<u>WATER</u>								
Wetlands/Floodplains								
Riparian areas								
Municipal Watersheds								
Watersheds within 10% of or exceeding threshold limit								
<u>SPECIAL AREAS</u>								
Research Natural Areas								
Special Interest Areas								
Spanish Peaks NNL								
<u>RECREATION</u>								
Developed Recreation Sites								
Visual Quality Areas								
Cultural Resource Sites								
<u>OTHER</u>								
Alpine areas **								
Active & Planned Timber Sales								
T&E plant/animal/fish locations								
Special Use Ski Areas								
Other Special Uses								

\* Provide map attachment

\*\* If present monitoring is to be completed by a qualified botanist or ecologist.

FIELD MONITORING REVIEW FORM

Proposed parcel identification \_\_\_\_\_

<u>Resource Value</u>	<u>Resource identified in EIS *</u>	<u>Lease Notice Required</u>	<u>DNL Apply?</u>	<u>Monitoring verifies that Values Exist and Supplemental Stip Required</u>			<u>Apply to Lease</u>	<u>Comments</u>
				<u>NSO</u>	<u>CSU</u>	<u>Timing</u>		
<b><u>WILDLIFE</u></b>								
Aberts Squirrel								
Concentration Area								
Production Area								
Bald Eagle								
Concentration Area								
Feeding Area								
Migration/Resting Area								
Winter Concentration Area								
Bighorn Sheep								
C1 Lambing Area								
C2 Production Area								
C3 Salt Lick								
C4 Severe Winter Range								
C5 Winter Concentration Area								
Elk								
D1 Calving Area								
D2 Resident Population Area								
D3 Migration Routes								
D4 Severe Winter Range								
D5 Winter Concentration Area								
Golden Eagle								
E1 Active Nest Site								
E2 Feeding Area								
E3 Nesting Area								
E4 Winter Concentration Area								
Mule Deer								
F1 Production Area								
F2 Severe Winter Range								
F3 Concentration Area								
Mountain Goats								
G1 Concentration Area								
G2 Production Area								
G3 Salt Lick								
Mountain Plover								
H1 Nesting Area								
H2 Observation Area								

Proposed parcel identification \_\_\_\_\_

Resource Value	Resource identified in EIS *	Lease Notice Required	DNL Apply?	Monitoring verifies that Values Exist and Supplemental Stip Required			Apply to Lease	Comments
				NSO	CSU	Timing		
<u>WILDLIFE (cont)</u>								
River Otter								
I1 Overall Distribution								
Pronghorn								
J1 Concentration Area								
J2 Winter Concentration Area								
J3 Winter Range								
Peregrine Falcon								
K1 Active Nest Site								
K2 Hunting Territory								
K3 Nesting Area								
Scaled Quail								
L1 Concentration Area								
Turkey								
M1 Active Nest Site								
M2 Concentration Area								
M3 Roost Site								
M4 Concentration Area								
M5 Winter Range								
White-tailed Deer								
N1 Concentration Area								
White Pelican								
O1 All Biological Features								

If there are inconsistencies between the field monitoring and the EIS do you feel they are significant? Describe.

Monitoring completed by : \_\_\_\_\_ date: \_\_\_\_\_  
 (name and title) \_\_\_\_\_ date: \_\_\_\_\_  
 \_\_\_\_\_ date: \_\_\_\_\_  
 \_\_\_\_\_ date: \_\_\_\_\_