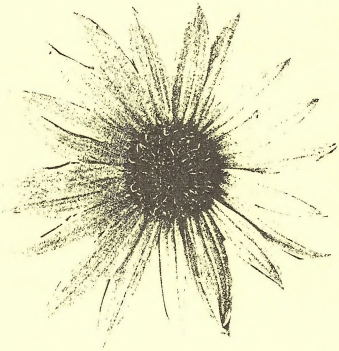
DRAFT

KANSAS RESOURCE MANAGEMENT PLAN AND ENVIRONMENTAL IMPACT STATEMENT



AUGUST 1990

PREPARED BY:
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

BLM-NM-PT-90-028-4410

1600 (040)

September 1990

Dear Reader:

Enclosed for your review and comment is the Draft Kansas Resource Management Plan (RMP) and Draft Environmental Impact Statement (EIS). This document describes and analyzes three alternatives for the development of Federal oil and gas within the state of Kansas. The purpose of this review is to improve the impact analysis and the decision-making process. We welcome your comments.

Written comments should be addressed to:

Paul W. Tanner, Area Manager
Oklahoma Resource Area
200 NW Fifth Street, Room 548
Oklahoma City, OK 73102

All written comments must be received no later than December 31, 1990, in order to be considered in the Proposed RMP /Final EIS.

Comments on the Draft RMP/EIS may be submitted in writing or presented verbally at the scheduled public hearings. These public hearings will be advertised in the local news media. Oral comments will be accepted at the following public hearings:

Date	Time	City	Location
Tues. Oct. 30,	3-5 pm	Lenexa Ks.	La Quinta Inn, I-35 & 95th Street
Weds. Oct. 31,	3-5 pm	Salina Ks.	Ramada Inn, I-70 & US Hwy 81N
Thurs. Nov. 01,	3-5 pm	Pratt, Ks.	Seville Inn, 1400 West US Hwy 54

A 10-minute time limit will be placed on oral comments. Oral comments should be accompanied by a written synopsis of the presentation. Written and oral comments will be fully considered and evaluated in preparation of the Proposed RMP and Final EIS.

If changes in the Final EIS in response to comments are minor, the Final will include only those changes and <u>will</u> <u>not</u> be a reprint of the entire EIS. Reviewers are urged to retain this copy of the Draft EIS to be used with the Final EIS.

Sincerely,

Jim Sims

District Manager
Tulsa District Office
Tulsa, Oklahoma

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AUGUST 1990

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KANSAS RESOURCE MANAGEMENT PLAN AMENDMENT ENVIRONMENTAL IMPACT STATEMENT

Abstract: This Draft Kansas Resource Management Plan (RMP) and Environmental Impact Statement (EIS) describes and analyzes three alternatives for managing the Federally owned minerals, specifically the development of oil and gas, within the state of Kansas. The need for the RMP/EIS fulfills the requirements for comprehensive land-use planning for public lands in accordance with the Federal Land Policy and Management Act of 1976 (FLPMA). All actions within this document conform to and are designed to meet the requirements of the Mineral Leasing Act of 1920, as amended. The three alternatives address the degree to which Federal oil and gas leasing will be allowed. The three alternatives are: Alternative A (No Action), Alternative B, and Alternative C.

Type of Action: (x) Administrative ( ) Legislative

For Further Information contact: Paul Tanner
Area Manager, Oklahoma Resource Area
200 NW Fifth Street, Room 548
Oklahoma City, OK 73102
Telephone: Commercial (405) 231-5491
FTS 736-5491

Comments have been requested from individuals, groups, and agencies shown on the partial distribution list in Chapter 5.

Date Draft Filed With Environmental Protection Agency:
Comments on Draft must be Received No Later Than:

Recommended:

Jim Sims 8/23/90
District Manager
Tulsa District Office
Tulsa, Oklahoma

Approved:

Larry L. Woodard 8-23-90
State Director
New Mexico

SUMMARY

The Draft Kansas Resource Management Plan (RMP) and Environmental Impact Statement (EIS) identifies and analyzes the future options for managing the Federal mineral estate situated within Kansas administered by the Bureau of Land Management (BLM), Tulsa District, Oklahoma Resource Area (ORA).

The Kansas RMP is being prepared using the BLM planning regulations issued under the authority of the Federal Land Policy and Management Act of 1976. When completed, the RMP will provide a comprehensive framework for managing and allocating Federal minerals within Kansas over the next 15 years.

The contents of this Draft RMP/EIS primarily focus on resolving one resource management issue. That is:

"The leasing and development of the Federal Oil and Gas mineral estate in Kansas, excluding Morton and Stevens counties".

The resolution of this issue can only be achieved within the context of proper land use planning.

The issue and planning criteria are discussed in Chapter 1. Those aspects of current management that are not at issue are covered in the Continuing Management Guidance section of Chapter 2. Continuing Management Guidance was developed primarily from laws, regulations, manuals, and existing land-use plans.

Three RMP alternatives have been developed to describe the different management options available to BLM for administering federal oil and gas in Kansas. These alternatives were developed to respond to the issue. Each alternative presents a different level of oil and gas leasing stipulation application.

Together with the Continuing Management Guidance, each of the alternatives forms a separate, feasible land-use plan.

The three alternatives developed for the Kansas RMP are summarized below and are further described in Chapter 2. The impacts anticipated from these alternatives are described in Chapter 4, and a comparative summary of impacts is included in Table S-1.

ALTERNATIVE A

The Current Management Alternative constitutes the "no action" alternative. This alternative describes the current management of the resources affected by the planning issue. As with all alternatives, other resources would continue to be managed as described in the Continuing Management Guidance section of Chapter 2.

Oil and gas leases would continue to be issued with the standard lease provisions as well as with surface resource protection stipulations required by executive order, law, regulation, or policy. Approximately 596,000 acres would be open to leasing. Approximately 101,000 acres would be closed to oil and gas leasing.

ALTERNATIVE B

Intensive Surface Protection, The "Preferred Alternative", places primary emphasis on protecting important environmental values through the use of additional leasing stipulations. The goal of this alternative is to change present management direction so that identified surface resource values are considered in the leasing process in a manner that provides additional protection for valuable surface resources.

Under this alternative oil and gas leases would continue to be issued with the standard lease provisions, with surface resource protection stipulations required by executive order, law, regulation, or policy, as well as additional multi-resource protection stipulations needed to protect valuable surface resources. Approximately 596,000 acres would be open to leasing. Approximately 101,000 acres would be closed to oil and gas leasing.

Additional multi-resource protection lease stipulations would be required on approximately 50,000 acres and lease notices identifying potentially important surface resources would be required on an additional 70,000 acres of the 596,000 acres open to leasing.

ALTERNATIVE C

Alternative C, the No Leasing Alternative, places primary emphasis on removing Federal oil and gas from availability for development. This alternative changes management direction so that the issue is resolved in a manner that places highest priority on the protection of surface resources from disturbance caused by oil and gas development.

Oil and gas leases would not be issued. Approximately 642,000 acres of Federal oil and gas would be closed to leasing by the end of the life of the plan. Approximately 55,000 acres of leased Federal oil and gas would continue to be under lease.

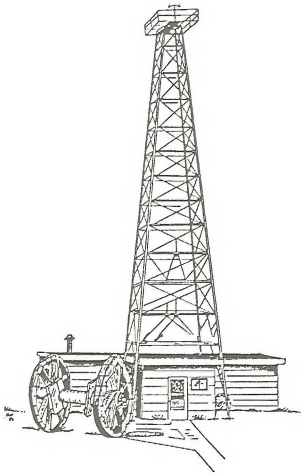

TABLE S-1
SUMMARY OF ANTICIPATED IMPACTS

Issue: Leasing of Federal Oil and Gas

RESOURCE	ALTERNATIVE A NO ACTION	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C NO LEASING
MINERALS	Approximately 596,000 acres of Federal oil and gas would be available for leasing and development. Approximately 20 wells per year will be drilled on Federal oil and gas leases. The low amount of Federal oil and gas activity that results from the Federal mineral estate would not be a significant impact on the states mineral resources.	Same as A.	Additional Federal oil and gas would not be leased, existing leases would continue to be developed. Approximately 10 wells per year will be drilled on existing Federal oil and gas leases.
AIR QUALITY	Impacts to air quality would be minor, short term and localized. Road and drill pad development on 20 wells per year would result in production of small amounts of fugitive dust, vehicle exhaust emissions and associated release of carbon monoxide.	Same as A.	Impacts to air quality would be minor , short term and localized. Road and drill pad development on 10 wells per year would result in less fugitive dust, vehicle exhaust emissions and associated releases of carbon monoxide.
SOILS	Oil and gas development will have a direct adverse impact on soils. The expected annual soil disturbance anticipated for 20 wells per year would result in no measurable effect on total vegetative productivity within a particular soil or vegetative type.	Same as A.	The expected annual soil disturbance anticipated for 10 wells would result in no measurable effect on total vegetative productivity within a articular soil or vegetative type.

TABLE S-1
SUMMARY OF ANTICIPATED IMPACTS
CONTINUED

RESOURCE	ALTERNATIVE A NO ACTION	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C NO LEASING
WATER RESOURCES	Activities associated with oil and gas development could have adverse impacts on surface and subsurface waters. Waste drilling fluids could present a potentially adverse impact to surface waters should a spill occur an proper safety precautions are not followed. Operators are required to protect freshwater zones by the placement of casing, cement, packers and/or other downhole devices. Improper or inadequate placement could result in adverse impacts to fresh water aquifers.	Same as A.	Same as A.
VEGETATION	Construction of access roads and drill pads would result in the loss of approximately 4.25 acres of vegetation per well site. With proper reclamation following drilling, this loss of vegetation would be short-term, assuming that reclamation success would take approximately one year for native grasses or crops. Approximately 85 acres of vegetation would be lost annually due to Federal oil and gas lease development. Cumulative vegetation loss regardlessofrehabilitation success would be approximately 1,275 acres.	Same as A.	Approximately 42 acres of vegetation would be lost annually. Cumulative vegetation loss would be approximately 638 acres regardlessofrehabilitation success.

TABLE S-1
SUMMARY OF ANTICIPATED IMPACTS
CONTINUED

RESOURCE	ALTERNATIVE A NO ACTION	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C NO LEASING
WILDLIFE	Oil and gas leasing and subsequent development impacts wildlife both directly and indirectly. Direct impacts consist of actions that result in immediate mortality to an individual or several members of a group, such as collision with vehicles and soil compaction by machinery. Indirect impacts include actions that affect animal behavior or habitat quality or quantity. The direct loss of habitat as a result of surface disturbance of approximately 1,275 acres due to Federal oil and gas leasing and the development of 20 wells yearly over the next 15 years would not be a significant impact to the wildlife of the state of Kansas.	In addition to the same impacts of Alternative A, stipulations designed to prevent or reduce direct and indirect impacts to wildlife would be applied under this Alternative. Season of use restrictions (ORA-3) would reduce potential conflicts between humans and wildlife during critical seasons. Surface use restrictions would reduce the potential impact of direct habitat loss due to drilling.	The direct loss of habitat as a result of surface disturbance of drilling 10 Federal wells annually would be approximately 630 acres over the next 15 years. This would not be a significant impact to the wildlife of the state of Kansas.
CULTURAL/ PELEONTOLOGICAL	Development of Federal oil and gas resources would result in both a negative and positive impact to cultural resources. Development of 20 wells per year would mean that approximately 1,275 acres would be disturbed over the next 15 years. This disturbance could destroy or damage unknown cultural resources. Conversely, this 1,275 acres would have undergone a Class III archeological inventory. This would provide more information related to past human activities in the planning area. Oil and gas development could disturb 1,275 acres of surface exposure of geologic formations bearing fossils. This disturbance would be in the form of a direct impact, such as drill pad and road excavation.	Same as A.	Development of Federal oil and gas resources would result in both a negative and positive impact to cultural resources. Development of 10 wells per year would mean that approximately 630 acres would be disturbed over the next 15 years. This disturbance could destroy or damage unknown cultural resources. Conversely, this 630 acres would have undergone a Class III archeological inventory. This would provide more information related to past human activities in the planning area. Oil and gas development could disturb 630 acres of surface exposure of geologic formations bearing fossils. This disturbance would be in the form of a direct impact, such as drill pad and road excavation.

TABLE S-1
SUMMARY OF ANTICIPATED IMPACTS
CONTINUED

RESOURCE	ALTERNATIVE A NO ACTION	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C NO LEASING
SOCIO-ECONOMIC	Approximately 300 Federal oil and gas wells will be drilled over the next 15 years. The relative small percentage of Federal oil and gas activity results in insignificant impacts to the economy and social structure of the state of Kansas. However, the economic and social structure of the small communities of western Kansas could be expected to be impacted by local operations on Federal minerals.	In addition to the same impacts described for A, the additional surface protection stipulations under Alternative B, could result in increased costs of local operations.	Approximately 150 wells could be expected on Federal mineral estate during the next 15 years. Additionally, approximately 150 wells would not be drilled on Federal minerals over the next 15 years. This could be a significant impact on local economies. The discontinuance of leasing Federal minerals would result in a loss of Federal lease revenues to the State and Federal Governments from lease sale bonus bids, lease rentals and fees, royalties and taxes.

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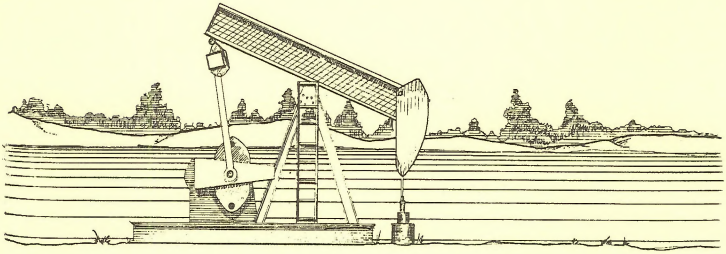
PURPOSE AND NEED



CHAPTER ONE
PURPOSE AND NEED

INTRODUCTION

The Kansas Resource Management Plan (RMP) provides the BLM a comprehensive framework for managing the Federally owned minerals in the state of Kansas. The RMP establishes program constraints, resource objectives and resource management methods.

Management decisions presented in this plan will remain in effect until the plan is amended, revised or replaced by a new plan. If significant changes occur in the proposed uses of Federal minerals within the State, the RMP will be amended or revised to address those changes.

This document includes proposed RMP management alternatives and a draft Environmental Impact Statement (EIS), fulfilling the Federal Land Policy and Management Act of 1976 (FLPMA) requirements for comprehensive land-use planning for public lands. All actions within this document conform to and are designed to meet the requirements of the Mineral Leasing Act of 1920, as amended.

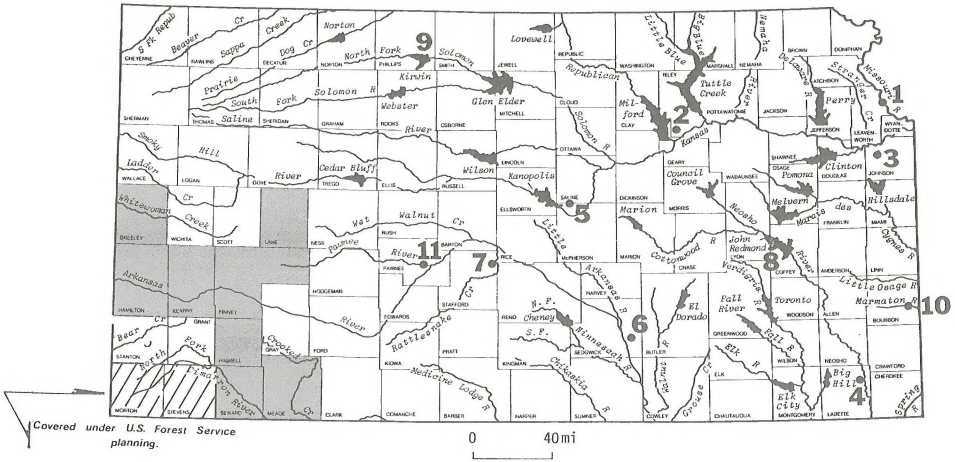
Description of Planning Area

Kansas is situated in the center of the contiguous forty-eight states. In fact, the geographic center of the country is located near the town of Lebanon in Smith County. Kansas is the 14th largest state and covers an area of about 82,264 square miles or roughly 52,648,960 acres. Kansas forms a rectangular area 208 miles north and south by 411 miles east and west. Kansas is bordered on the south by Oklahoma, the west by Colorado the north by Nebraska and the east by Missouri. Generally speaking, the state lies in the region known as the Great Plains and has a rich variation of climate, terrain, soil, and native plants and animals.

Federally owned surface and mineral estate in Kansas encompasses over 850,000 acres located in 90 out of 105 counties within the state. The Kansas Planning Area (Map 1) to be addressed by the Kansas RMP/EIS consists of the Federally owned surface and mineral estate administered by the BLM, not including the 108,000 acres located in Morton and Stevens counties. The acreage in these two counties is managed by the U.S. Department of Agriculture, Forest Service (FS), Cimarron National Grassland. Management of Federal lands and minerals in Morton and Stevens counties has been addressed in the "Pike and San Isabel National Forests, Comanche and Cimarron National Grasslands Oil and Gas Leasing EIS and Forest Plan Amendment"(1990). The Forest Service plan meets the BLM requirements for land use planning and EIS documentation for mineral leasing.

The Kansas planning area includes approximately 1,000 acres of BLM administered Federal surface estate, approximately 73,000 acres of split estate minerals (Split estate refers to non-Federal surface estate over Federally owned mineral estate). In addition the planning area contains approximately 670,000 acres of Federal mineral estate underlying other (non-BLM or FS) Federal Surface Management Agencies (SMA) jurisdiction. Federal tracts range in size from less than 10 acres to over 100,000 acres.

KANSAS PLANNING AREA



1. FORT LEAVENWORTH
2. FORT RILEY
3. SUNFLOWER AMMUNITION PLANT
4. KANSAS ARMY AMMUNITION PLANT
5. SMOKY HILL AIR NATIONAL GUARD RANGE
6. MCCONNELL AIR FORCE BASE
7. QUIVIRA NATIONAL WILDLIFE REFUGE
8. FLINT HILLS NATIONAL WILDLIFE REFUGE
9. KIRWIN NATIONAL WILDLIFE REFUGE
10. FORT SCOTT NATIONAL HISTORIC LANDMARK
11. FORT LARNED NATIONAL HISTORIC LANDMARK

COUNTIES WITH GREATER THAN 1000 ACRES OF SPLIT ESTATE.

The planning area includes both Public Domain (PD) minerals and acquired minerals scattered throughout the state. PD minerals have resulted from the Federal Government retaining ownership of the mineral estate. Acquired minerals result from a Federal Agencies purchase of private lands and the underlying mineral estate for a specific purpose or project such as a military base or reservoir site. Not all mineral estate within the boundaries of the SMA lands were acquired. For land use planning purposes however, all acreage within the administrative boundaries of the SMAs are treated as Federal.

The Federal SMAs within Kansas and their areas of responsibility include:

(1) The United States Army, Corps of Engineers (USA, COE), Kansas City District for Clinton, Hillsdale, Kanopolis, Melvern, Milford, Perry, Pomona, Tuttle Creek, and Wilson reservoirs as well as various local flood protection projects;

(2) The USA, COE, Tulsa District for Council Grove, El Dorado, Elk City, Fall River, Hulah, John Redmond, Marion, Big Hill, and Toronto reservoirs as well as various local flood protection projects;

(3) The US Department of the Interior (DOI), Bureau of Reclamation (BOR), Great Plains Region for Cedar Bluff, Cheney, Glen Elder/Waconda, Kirwin, Lovewell, Norton, and Webster reservoirs;

(4) The USA, Combined Arms Center, Fort Leavenworth Military Reservation for Fort Leavenworth;

(5) The USA, 1st Infantry Division, Fort Riley Military Reservation for Fort Riley;

(6) The USA, Kansas Army Ammunition Plant, Parsons Kansas;

(7) The USA, Sunflower Ammunition Plant, Desoto Kansas;

(8) The USA, Kansas Air National Guard for the Smoky Hill Air National Guard Range;

(9) The US Air Force, 384TH Combat Support Group (SAC), McConnell Air Force Base for McConnell Air Force Base;

(10) The DOI, Fish and Wildlife Service (FWS), Region 6, Denver Colorado for the Flint Hills, Kirwin, and Quivira National Wildlife Refuges; and

(11) The DOI, National Park Service (NPS), Midwest Region, Omaha Nebraska for Fort Scott and Fort Larned National Historic Landmarks.

These agencies administer approximately 670,000 acres of the 744,000 acres within the planning area. A list of BLM administered split-estate minerals, identified by legal description, is included in Appendix 1.

PLANNING PROCESS

The BLM RMP process consists of nine basic steps. This process requires the use of an interdisciplinary team of resource specialists for the completion of each step. The steps described in the planning regulations and followed in preparing this RMP are summarized below. Publication of this document is part of Step 7, Selection of the Preferred Alternative.

Step 1. Identification of Issues

The first step in the planning process is intended to identify resource management problems or conflicts that can be resolved through the planning process. These problems or conflicts (issues) were identified by the BLM and other agency personnel as well as members of the public. One issue,

Federal oil and gas leasing and development, was identified and considered in this document.

The BLM published a news release and a Federal Register Notice on June 14,1989 announcing preparation of the RMP, soliciting public involvement and comments, announcing public meetings and requesting information and interest from the public and industry for Federal coal and other minerals within Kansas. As a result of this process, it was determined that there is currently no interest in Federal coal or other minerals at this time.

Step 2. Development of Planning Criteria

This step identifies the information needed to resolve issues, formulate, and evaluate alternatives and select the preferred alternative. Preliminary decisions are made regarding the kinds of information needed to clarify the issues, the kinds of alternatives to be developed, and the factors to be considered in evaluating alternatives and selecting a preferred RMP/EIS.

Step 3. Data and Information Collection

This step involves the collection of various kinds of environmental, social, economic, and institutional data needed for completion of the process. This step can include detailed field studies, literature studies, or consultation with appropriate professionals. In most cases, this process is limited to inventories needed to address the issues.

Step 4. Management Situation Analysis (MSA)

This step calls for deliberate assessment of the current situation. It includes a description of current BLM management guidance, a discussion of existing problems and opportunities for solving them, and a consolidation of existing data needed to analyze and resolve the identified issues. The end result of this step is the development of an unpublished companion document known as the MSA. That document is used to develop the Continuing Management Guidance and actions section of the RMP. The MSA is used as a basis for compiling the Affected Environment chapter (Chapter 3) of the RMP. Copies of the MSA are available for review by request.

Step 5. Formulation of Alternatives

During this step, several complete and reasonable resource management alternatives are prepared, including one for no action. Other alternatives are designed to resolve the issue while placing emphasis either on environmental protection or resource production. This section of the RMP has been incorporated into Chapter 2, Alternatives.

Step 6. Estimation of Effects of Alternatives

The physical, biological, economic, and social effects of implementing each alternative are estimated in order to allow for a comparative evaluation of impacts. This step, known as the Environmental Consequences section, is Chapter 4 in this RMP.

Step 7. Selection of the Preferred Alternative

Based on the information generated during Step 6, the District Manager identifies and recommends a preferred alternative to the State Director. The Draft RMP/EIS document is then prepared and distributed for public review. We are presently at this step in the planning process. It should be noted that Alternative B has been selected by management within the BLM, as the preferred alternative.

Step 8. Selection of the Resource Management Plan

Based on the results of public review and comment, the District Manager will select and recommend to the State Director various proposals and/or alternatives to comprise the RMP and publish it along with a final EIS. A final decision is made following both a 60-day Governor's Consistency Review and a 30-day protest period on the Final EIS are completed.

Step 9. Monitoring and Evaluation

This step involves the collection and analysis of long-term resource condition and trend data to determine the effectiveness of the plan in resolving the identified issues, and to ensure that implementation of the plan is achieving the desired results. Monitoring continues from the time the RMP is adopted until changing conditions require a revision of the whole plan or any portion of it.

PLANNING ISSUES, CRITERIA, AND MANAGEMENT CONCERNS

The BLM planning regulations equate land-use planning with problem solving and issue resolution. An issue is defined as an opportunity, conflict, or problem, regarding the use or management of public land and resources.

Planning criteria are the standards, rules, and measures used for data collection and alternative formulation, which will guide final plan selection. Planning criteria are taken from appropriate laws and regulations, BLM Manuals and directives, and concerns expressed in meetings, and consultations, both with the public and other agencies.

Management concerns are those non-issue related procedures or land-use allocations which have proven, during the preparation of this RMP/EIS, to need modification. Management concerns focus on use conflicts, requirements, or conditions that cannot be resolved administratively and did not, during initial public scoping, appear to meet the criteria to qualify as a planning issue. These concerns were or are identified for resolution in the RMP.

The issue proposed for examination as a result of the scoping process for the Kansas RMP was identified based upon the judgment of the planning team and BLM management consultation. The issue will address the anticipated concerns of the public, industry and other Federal, State and local agencies. Further refinement of this issue, deletion or expansion of a portion of the issue or inclusion of other as yet unknown planning issues may occur during the planning process.

ISSUE: Leasing and development of Federal oil and gas in Kansas.

The issue is further broken down into the following leasing categories:

1. Open Subject to Standard Terms and Conditions.

These areas in the planning area will be open for oil and gas leasing and development subject to standard lease terms and conditions. These are the areas, to be determined through the RMP/EIS process, where the terms and conditions of a standard lease form are sufficient to protect other land uses and/or resource values.

2. Open Subject to Seasonal or Other Minor Constraints.

These areas in the planning area will be open for oil and gas leasing and development subject to minor constraints such as seasonal restrictions (wildlife, recreation, etc.). These areas, to be determined by the RMP/EIS process, are

where moderately restrictive lease stipulations may be required to mitigate potential impacts to other land uses or resource values.

3. Open Subject to No Surface Occupancy and Similar Major Constraints.

These areas in the planning area will be open for oil and gas leasing and development subject to major constraints such as no-surface occupancy (NSO) stipulations on areas larger than 40 acres in size or more than 1/4 mile in width. These are the areas, to be determined in the RMP/EIS process, that require highly restrictive lease stipulations in order to mitigate potential impacts to other land uses or resource values.

4. Closed to Leasing.

These areas in the planning area will be closed to leasing. These areas, to be documented by the RMP/EIS process, are where other land uses or resource values cannot be adequately protected by the most restrictive lease stipulations and appropriate protection can only be ensured by closing the area to leasing. The RMP/EIS will identify closed areas by category of closure i.e., discretionary or non-discretionary closures. A non-discretionary closure is established by legislative mandate while a discretionary closure is the result of an agency management decision.

MANAGEMENT DIRECTION

Existing leases may contain stipulations that are either too restrictive or not restrictive enough in terms of the goals and objectives established in the plan. Although lease terms cannot be modified by the RMP, the plan does allow the existing leaseholders the opportunity to voluntarily conform with proposed stipulations contained in the plan.

PLANNING CRITERIA

The following describes the proposed planning criteria that would be used in addressing the currently identified issues. All alternatives considered for management of the identified issues or addressing the issues must satisfy the following planning criteria:

1. All alternatives must comply with laws, executive orders, policy, and regulations.

2. For each alternative, the resource outputs must be reasonable and achievable with available technology.

3. All proposed actions must recommend resource allocations which are in accordance with the principles of multiple-use and sustained yield.

4. The RMP will describe the specific circumstances within which lease stipulations would be subject to waiver. Those lease stipulations not subject to waiver will also be described.

5. All alternatives will evaluate and consider long term benefits to the public in relation to short term benefits.

6. Each alternative will provide for the orderly development of leasable minerals while keeping environmental impacts to a minimum.

7. Surface actions not controlled by or under the authority of the BLM will not be addressed by the RMP/EIS. Surface uses authorized by the surface owner or the SMA are not subject to discussion in the RMP/EIS.

ENVIRONMENTAL CONCERNS

Environmental concerns or components normally addressed by a BLM land use plan and EIS are generally associated with surface resources or uses. In the case of the Kansas RMP, the BLM is addressing the Federal mineral estate. Surface uses and resources will be addressed as they conflict with or are impacted by the development of the federal minerals.

Environmental Concerns Considered But Dropped From Further Study Include:

1. Wild Horses and Burros

Wild horses and burros do not occur in Kansas, and therefore, will not be addressed.

2. Wilderness

Federally managed Wilderness does not occur in Kansas, and therefore will not be addressed.

3. Forestry, Outdoor Recreation, and Visual Resource Management

The BLM resource management programs concerning forestry, outdoor recreation management, and visual resource management do not apply in Kansas. Private, state or SMA forestry, recreation, and visual resources occurring on a particular tract of mineral estate will be addressed in a site specific manner by alternative.

4. Livestock Grazing and Realty Actions

The BLM administered livestock grazing allotments and BLM lands and realty actions, are the subjects of previous land use planning decisions and will be discussed as continuing management.

Environmental Concerns Considered In This EIS Include:

1. Air Quality

Air quality concerns include dust and emissions associated with road and drill pad construction and drilling operations. The potential to create or release concentrations of harmful gases (hydrogen sulfide) at drill sites exists. Air Quality will be addressed in this document.

2. Water Resources

The development of oil and gas resources has the potential to affect surface and groundwater supplies through surface erosion, contamination of streams, contamination of aquifers, production of brine waters, and the introduction of toxic substances into the environment. Water Resources will be evaluated and considered as an environmental component in this document.

3. Soils

The construction of roads and drill pads will result in soil disturbance. Soil disturbance attributable to the proposed action will be a consideration of this plan.

4. Vegetation

The construction of access roads and drill pads will result in the removal of vegetation. The removal of vegetation will be evaluated and addressed as an environmental component in this document.

5. Wildlife

The construction of access roads and drill pads will result in the loss of wildlife habitat. Drilling operations adjacent to wildlife habitats during critical seasons of a particular species life cycle could result in habitat

avoidance by the local population of that species. Protection of threatened and endangered species and their habitat from destruction and disturbance which results from a Federal action (oil and gas leasing) is required by BLM policy and the Endangered Species Act. Wildlife habitat in general, and threatened and endangered species and their habitats will be addressed as environmental components in this document.

6. Cultural/Paleontological Resources

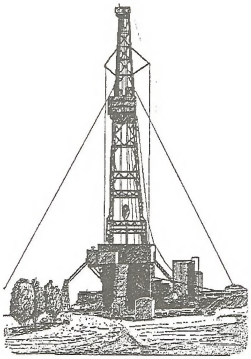
Protection of cultural and paleontological resources from damage or destruction resulting from a Federal action (oil and gas leasing) is required by BLM policy and a number of laws. As such, these resources will be evaluated and be considered as environmental components to be addressed in the RMP/EIS.

7. Minerals

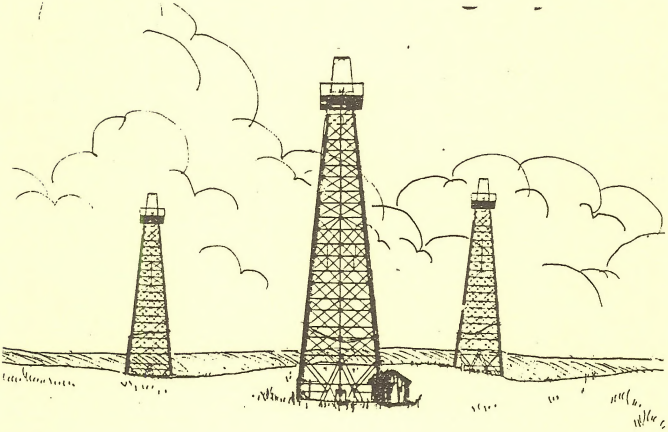
The alternatives addressed in this EIS may limit development of Federal mineral resources in the state of Kansas. For this reason the impacts of each alternative on oil and gas development will be addressed in this EIS.

8. Socio-Economics

Oil and gas leasing and development could create impacts to the states social structure through direct impacts to economic components which result from oil and gas. There could be effects on the work force and economy by a decision to lease or not lease Federal oil and gas. For these reasons socio-economics will be addressed in this EIS.



CHAPTER TWO
ALTERNATIVES



CHAPTER TWO
ALTERNATIVES

INTRODUCTION

Three alternatives were developed for resolution of the issue described in the previous chapter. Development of the alternatives was guided by the planning criteria, public consultation, coordination with other agencies, and evaluation by BLM. The alternatives represent the most reasonable range of options possible due to the limited surface resource jurisdiction and fragmentation of minerals ownership.

This chapter contains management guidance applicable to all three alternatives under the heading "Continuing Management Guidance" and a description of each of the three alternatives in relation to affected resources under the "Alternatives" heading.

CONTINUING MANAGEMENT GUIDANCE

This section describes resource management guidance that is applicable to, and therefore constitutes a part of, all three alternatives. Continuing management guidance is provided by laws, executive orders, regulations, Interior Department manuals, BLM manuals and BLM Instruction Memoranda which will be followed regardless of which alternative is selected. Continuing management guidance also includes decisions from preceding land-use-plans, cooperative agreements or memoranda of understanding with other state and Federal agencies.

The BLM resource management programs which may be affected by management decisions resulting from the RMP/EIS, or which may influence the final RMP decisions are: 1) The lands program, which encompasses nearly all aspects of Federal real estate management; 2) The wildlife program, which includes threatened and endangered species responsibilities for both plants and animals; 3) The cultural resources program, which involves paleontological, archeological and historic resources management responsibilities; and 4) The minerals management program, which involves all mineral resources and their management.

Current management of these programs can best be described as reactive and custodial. With disposal of the BLM administered PD surface estate in progress, surface administration will be foregone and is not discussed in this document. Leasing of the mineral estate, specifically for oil and gas development in response to industry demands is the principle BLM administrative function in Kansas. Understanding current BLM management responsibilities will help the reader understand the program descriptions that follow:

1). Lands

The BLM administered surface estate in the Planning Area consists of 1023.49 acres, located on 21 isolated tracts, in 15 counties throughout Kansas. There may also be additional tracts of public land situated within the state which are presently unidentified due to deficiencies in existing land status records.

The previous land use planning conducted by the BLM in Kansas consists of the "Planning Analysis (PA) for Proposed Disposal of Public Lands in Kansas" prepared in 1987 and the "Supplemental Planning Analysis (SPA) for Proposed Disposal of Public Lands in Kansas" completed in 1988. The PA, SPA and the accompanying Decision Documents pertain to the surface estate and do not address

the disposition of Federal minerals within Kansas. The result of this previous planning is the decision to transfer title of the isolated tracts of BLM managed Federal surface estate to other than Federal ownership.

An application from the Kansas Department of Wildlife and Parks (KDWP) has been submitted for transfer of title on 1014.39 acres under authority of the Recreation and Public Purposes Act (R&PP) of June 14, 1926. The application proposes utilization of these tracts for enhancement of wildlife habitat and recreation. The application is being processed and transfer is pending. The remaining 9.10 acres have been identified as being encumbered by title disputes and will initially be subject to disposal under provisions of the Color-of-Title Act of December 22, 1928. Any unidentified tracts detected will be disposed of under the above criteria or through procedures outlined in 43 CFR 2710, Sales, or 43 CFR 2740, R&PP.

2). Wildlife

The BLM's wildlife management program activities in Kansas are limited to preparation of environmental analyses, special status species evaluations or clearances, wetland determinations and development of stipulations for impact avoidance or mitigation in the mineral development and lands initiatives.

Lease stipulations and notices, and conditions of approval (COA) of an Application for Permit to Drill (APD) deal with such issues and resources as special status species, wetland/riparian areas and migratory birds. Deaths of migratory birds in uncovered oil and gas fluids disposal pits have been documented in Kansas.

Federal minerals under private surface or Federal surface managed by another Federal agency or licensed by another Federal agency to a state or local agency for surface management purposes are the most common situations encountered in BLM's wildlife management program in Kansas. In these situations BLM's wildlife responsibilities in Kansas do not begin until a BLM mineral action is proposed.

Special status species (SSS) include state and Federally listed threatened and endangered plant and animal species, species proposed for listing and category 1 and 2 candidate species being reviewed by the U. S. Fish and Wildlife Service (USFWS). Agency coordination information indicates that there are currently 68 SSS in the state of Kansas. Thirty-nine of the over 400 private surface/Federal mineral (split estate) tracts analyzed potentially provide habitat for some type of SSS.

SSS and other fish, wildlife and wetland/riparian resource concerns are addressed through site specific agency coordination in Kansas.

Agency coordination is initiated with the USFWS, KDWP and the Kansas Natural Heritage Program (KSNHP) regarding each site specific BLM project in Kansas. They have each provided information included in the development of this RMP. No additional wildlife agency coordination is anticipated for oil and gas leasing until this RMP becomes outdated. However, every APD will continue to result in site specific agency coordination and application and discussion of any existing lease stipulations and notices.

The Endangered Species Act of 1973 (as amended), Executive Order 11990 (Protection and Management of Wetlands), BLM policies regarding protection of wetlands and riparian areas, and information received from the USFWS, KDWP, and the KSNHP have influenced the development and application of the stipulations and lease notices. Lease notices are advisory in function and do not mandatorily require any action.

3). Cultural and Paleontological Resources

A cultural resource is defined as any cultural, archeological, historical, or architectural site, building, structure, District, or object. Cultural resources with a few exceptions are always over 50 years old; and can also be burials, sacred, or ceremonial sites presently used or considered important by federally recognized Indian tribes.

The primary goal of the cultural resource program is to manage cultural resources on public and split-estate lands in a manner that both protects the cultural resources and provides for their proper use.

Protection of cultural resources is required by several Federal laws; including the National Historic Preservation Act of 1966 (NHPA) as amended, the Archeological Resources Protection Act of 1979 (ARPA), the American Indian Religious Freedom Act of 1978 (AIRFA), and the FLPMA. All these laws provide for the protection and management of cultural resources.

These laws are implemented through Federal regulations, primarily 36 CFR 800, "Protection of Historic and Cultural Properties," which implements Section 106 of NHPA. These regulations as amended determine how the NHPA shall be followed by the Federal Agencies, the State Historic Preservation Officers (SHPOs) and the Advisory Council on Historic Preservation. Two other key regulations are 43 CFR 7, which implements ARPA; and 36 CFR 60, which sets up the National Register of Historic Places.

When cultural resources are discovered they are evaluated under the criteria of eligibility of the National Register of Historic Places (36 CFR 60.4). Any cultural resources listed or determined eligible for the National Register are protected and managed under BLM guidelines and procedures developed to comply with current laws and regulations.

Sacred tribal grounds or ceremonial sites considered important by federally recognized tribes are managed in accordance with AIRFA using 43 CFR 7. This consultation will take into account the concerns of the tribes involving sites or locations of religious significance and can result in restrictions of oil and gas development or even no surface occupancy.

A key tool used by the BLM to manage the cultural resources is a varied intensity of inventory divided into three classes: Class I - Existing inventory and literature search; Class II - Sampling field inventory (all sample units inventoried to a Class III level); and Class III - Intensive field inventory covers 100% of the area on foot. With

only specifically defined exceptions in the BLM Cultural Resource Manual, the Class III inventory is required before any surface disturbance is allowed. Only qualified professional archaeologists are allowed to perform these inventories through a permitting process controlled by the BLM State Office in Santa Fe.

Four recent overviews of Kansas archeology and cultural resources are being used as background for cultural resource evaluation: 1) Kansas Prehistoric Archaeological Preservation Plan (Brown and Simmons 1987); 2) Kansas Preservation Plan Section on Historical Archeology (Lees 1988); 3) Archaeology of the High Plains (Gunnerson 1987); and 4) From Clovis to Comanchero: Archeological Overview of the Southern Great Plains (Hoffman et al. 1989).

The BLM's cultural resources management program activities in Kansas are limited by the lack of BLM managed Federal surface estate. The lands identified for disposal by previous land-use-planning were inventoried for cultural resources and an Archeological Inventory Report was completed in support of the planning effort.

Cultural Resource program involvement in split-estate minerals activities in Kansas consists of development of environmental analyses reports, site specific evaluations or inventories in support of oil and gas leasing, development of stipulations for impact mitigation or impact avoidance, and consultations with State agencies. Program involvement associated with mineral leasing under other Federal surface management agencies properties is limited to coordination and consultation with the other Federal agencies and with state agencies.

At the present time no sites listed on the National Register of Historic Places are located on lands with Federal mineral estate in Kansas. A list of known archeological and/or historic sites occurring on lands with Federal mineral estate is maintained by the ORA.

The BLM paleontological resource management program within Kansas includes the requirement that the BLM be notified should paleontological resources be encountered during the conduct of operations.

4). Minerals

The BLM's minerals management program within Kansas consists of leasing minerals which have an economic value or demand. Minerals occurring in commercial quantities in Kansas include oil and gas, coal, gypsum, salt, zinc, lead, chalk, commercial quality clays, helium, building stone, limestone and sand and gravel.

All Federal oil and gas leasing and lease operations in Kansas are conducted following procedures established and presented in 43 CFR 3100. Lease activities in Kansas typically involve on-site inspections before approving an APD, drilling plan review and lease operations inspection and enforcement.

Lease operations are regulated by lease terms, regulations, and stipulations that may be attached to the lease to protect specific resource values identified by an environmental assessment or impact statement. Prior to operations, a site specific environmental analysis of the proposed well site may result in additional considerations before approval of the drilling permit.

Geophysical operations within Kansas are not controlled or authorized by the BLM. Each SMA and surface owner negotiates and controls surface uses which includes access for geophysical exploration activities.

ALTERNATIVES

Both National Environmental Policy Act of 1969 (NEPA) regulations and the BLM's land use planning regulations under 43 CFR 1600 require the formulation of management alternatives. Each proposed alternative represents a different comprehensive land use plan to guide future management of lands and resources. One management alternative must represent "no action," which means a continuation of present resource allocation levels and management practices. Different alternatives are developed as solutions to questions and management concerns. Because only one resource issue, oil and gas leasing and development, is being addressed by the RMP/EIS the multiple-resource trade-offs which normally constitute the preferred alternative are not applicable to this RMP.

Three alternatives have been developed to address the issue of Federal oil and gas leasing and development within Kansas. These alternatives consist of three levels of mitigation of surface resource values which result in three different levels of potential oil and gas development. The baseline Reasonable Foreseeable Development (RFD) scenario was prepared based upon an assumption of continuation of present management (Alternative A). In order to analyze potential impacts and/or effects of the other two alternatives, RFDs were prepared utilizing oil and gas development levels derived from those differing levels of mitigation. The three alternatives are as follows:

Alternative A. Continuation of Present Management (No Action)

Split-Estate Lands

Under this alternative new leases and expired leases that are reissued would be leased under "Standard Terms and Conditions" (STC). Mandatory stipulations (those required by law) would be incorporated into each lease where those stipulations apply.

SMA Lands

All SMAs in Kansas have developed lease stipulations for the lands under their jurisdiction. There are currently 33 Federal projects or installations subject to oil and gas leasing in Kansas where BLM has minerals management responsibility. Under this alternative new leases and expired leases that are reissued would be leased with the stipulations identified by the SMA.

Alternative B. Intensive Surface Protection (Preferred Alternative)

Split-Estate Lands

Under this alternative new leases and expired leases that are reissued would be leased with STC. Mandatory stipulations would be incorporated into each lease where those stipulations apply. In addition, this alternative will include optional stipulations where resource values exist that warrant special protection.

SMA Lands

Under this alternative all new leases and expired leases that are reissued would be leased with stipulations currently identified by the SMA. Additional stipulations may be applied to these SMA lands where the BLM determines that additional stipulations may be necessary to protect resource values warranting greater protection than provided by the SMA stipulations.

Alternative C. No Leasing

Under this alternative the BLM would not offer new oil and gas leases. Those lands currently under lease would not be re-offered for lease following lease expiration. Those lands held by production would not be re-offered following loss of production and subsequent lease expiration.

ALTERNATIVE CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

In developing alternatives, the following proposal was brought up, discussed, and subsequently eliminated from further analysis and consideration for the reasons specified below.

Leasing Level Alternative

This proposal would have used oil and gas leasing offer levels as a method of formulating different alternatives. This proposal was rejected based upon the fact that leasing offer levels are determined by Continuing Management Guidance and market factors and thus are not subject to manipulation for the purpose of impact analysis. Oil and gas leasing levels will be the subject of an activity plan which results from the land-use-planning decisions at the RMP/EIS.

FEDERAL OIL AND GAS LEASE STIPULATIONS

A Federal oil and gas lease is a contract between the Federal Government and an individual or corporation (lessee) which allows the lessee to extract oil and gas from the Federal mineral estate for a percentage (royalty) of the gross value. The terms of the lease are considered contractual obligations of the lessee and are standardized on all Federal oil and gas leases. The terms and conditions of an oil and gas lease provide general protection of surface and subsurface resources for normal operations and are known as the Standard Terms and Conditions (STC). A copy of the STC of a Federal oil and gas lease are presented in Appendix 2. The Federal Government also utilizes leasing stipulations to protect unique values or important resources when it is felt that the STC are not adequate.

Proposals to lease split estate minerals require the BLM to prepare a site specific environmental assessment and assure that necessary surface protection stipulations are attached to the lease. Procedures for leasing on other SMA minerals are similar to split estate procedures except that the SMA is contacted for consent to lease and also for identification of specific agency surface protection stipulations.

Stipulations to a lease involve additional restrictions required of the lessee for conduct of operations on a lease. Stipulations are attached to a lease at the time of lease offer, providing the potential lessee the opportunity not to bid on the lease if these restrictions are not agreeable.

The Mineral Leasing Act for Acquired Lands, 30 U.S.C. 351, requires that the SMA stipulations must be included on a lease. Further, as presented in Title 43 CFR 3101.7-1 (a) "Acquired lands shall be leased only with the consent of the surface management agency, which upon receipt of a description of the lands from the authorized officer, shall report to the authorized officer that it consents to leasing with stipulations, if any, or withholds consent or objects to leasing." Additional, more restrictive stipulations can be added by the BLM. Specific BLM action in regard to SMA stipulations is mandated by 43 CFR 3101.7-2 (a) "Where the surface managing agency has consented to leasing with stipulations, and the Secretary decides to issue (a lease), the authorized officer shall incorporate the stipulations into any lease which it may issue. The authorized officer may add additional stipulations."

Exceptions to a lease stipulation, waiver of a lease stipulation or modification of a lease stipulation are explained in the Federal regulations at 43 CFR 3101.1-4. Generally, an exception, waiver, or modification may be approved if the record shows that circumstances or protected resource

values have changed or if the lessee can demonstrate that operations can be conducted without causing unacceptable impacts, and that less restrictive stipulations will protect the public interest. Exceptions, waivers, and modifications can only be granted by the Authorized Officer. If the proposed exception, waiver, or modification is inconsistent with the land use plan, the plan will be amended or changed or the exception, waiver, or modification will be disallowed.

Exceptions are considered on a case by case basis and are subject to an environmental analysis. Exception to a leasing stipulation will be granted by the Authorized Officer if the reason for the exception is consistent with that analysis. No public notice is required for exceptions to lease stipulations which conform to the plan. Exceptions which do not conform to the plan may be granted only upon plan amendment and public notification.

A stipulation waiver is the complete elimination of a stipulation from a particular lease contract.
A stipulation is waived by the Authorized Officer after preparation of an environmental assessment and a decision is made that the stipulation in question is no longer required for a particular lease. The decision to waive a substantial stipulation requires a plan amendment and a 30 day public notice period prior to waiver.

Modifications to a lease stipulation are made if and when resource management determines the stipulation is no longer effective as written. This situation could occur when new information, obtained by inventory or monitoring, etc. indicates that the protective measure is unnecessarily restrictive.
Modification of a stipulation requires the preparation of an environmental assessment to determine the potential impacts and/or plan amendment or maintenance needs. If the modification is determined to be substantial by the Authorized Officer, a 30 day public notice period prior to modifying the lease stipulation is required.

Stipulations attached to a lease as a condition of consent by a SMA are not subject to exception, waiver, or modification by the BLM.

BUREAU OF LAND MANAGEMENT STIPULATIONS

Stipulations utilized within the Oklahoma Resource Area (ORA) include both mandatory and optional stipulations. A mandatory stipulation is one which addresses protection of a resource which the BLM is required by law, regulation or policy to protect, and which the BLM feels STC would not offer sufficient protection. A mandatory stipulation would be applied under Alternative A and Alternative B. Mandatory stipulations include:

ORA-1, Floodplain Protection Stipulation

"All or portions of the lands under this lease lie in and or adjacent to a major watercourse and are subject to periodic flooding. Surface occupancy of these areas will not be allowed without the specific approval, in writing, of the Bureau of Land Management."

This stipulation is a result of Executive Order (E.O.) 11988 Floodplain Management of May 24, 1977.

ORA-2, Wetland/Riparian Stipulation

"All or portions of the lands under this lease contain wetland and/or riparian areas. Surface occupancy of these areas will not be allowed without the specific approval, in writing of the Bureau of Land Management. Impacts or disturbance to wetlands and riparian habitats which occur on this lease, must be avoided or mitigated. The mitigation shall be

developed during the application for permit to drill process."

The wetland/riparian stipulation is mandated by E.O. 11990 "Protection of Wetlands" of May 24, 1977.

Optional stipulations would be applied under Alternative B to protect a resource value or other land use which would be potentially impacted by normal oil and gas lease operations. These stipulations are optional in the sense that they are not mandated by law or regulation. They will be used only when the value of the resource warrants protection. These optional stipulations include:

ORA-3, Season of Use Stipulation

"Surface occupancy of this lease will not be allowed from _date_, through _date_, without the specific approval in writing, from the Authorized Officer of the Bureau of Land Management."

This stipulation restricts the time that the lessee can be on the lease for a period of more than 60 days.
Most season of use restrictions involve wildlife seasonal use requirements or recreation use conflicts with drilling activities.

ORA-4, No Surface Occupancy

"Surface occupancy of this lease will not be allowed."

This stipulation prohibits surface use to protect a resource or use that is not compatible with oil and gas development. The tract could be leased for inclusion in a drilling unit and may be drilled directionally from an off-site location where occupancy is allowed.

LEASE NOTICES

A Lease Notice provides more detailed information concerning limitations that already exist in law, lease terms, regulations, or operational orders.
A Lease Notice also addresses special items the lessee should consider when planning operations, but does not impose new or additional restrictions. Lease Notices attached to leases should not be confused with NTLs--Notices to Lessees.

Lease Notices (LN) would be applied under Alternative B, and include:

LN-1, Threatened and Endangered Species

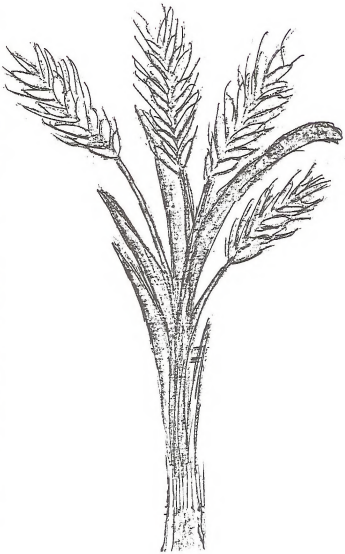
"According to preliminary information all or portions of this lease area could contain Federal and/or state listed threatened or endangered species and/or their habitats. Any proposed surface disturbing activity may require an inventory and consultation with the USFWS and/or the state wildlife agency. The consultation could take up to 180 days to complete. Surface occupancy could be restricted or not allowed as a result of the consultation. Appropriate modifications to the imposed restrictions will be made for the maintenance and operations of producing oil and gas wells."

LN-2, Black-footed Ferrets In Kansas

"If black-footed ferrets occur anywhere in the wild in Kansas, they are presumed to be associated with prairie dogs. All or portions of this lease area lie within a county of Kansas where prairie dog towns have occurred in the past. Therefore, if a prairie dog town of eighty acres or more is found to occur on or near this lease, a black-footed ferret survey may be required before permitting surface disturbing activity which may impact the prairie dog town."
LN-2 will be applied to leases issued in the counties which last reported the presence of prairie dog towns.

These counties are:

Barber, Barton, Cheyenne, Clark, Clay, Comanche, Decatur, Edwards, Ellis, Ellsworth, Finney, Ford, Gove, Graham, Grant, Gray, Greeley, Hamilton, Harper, Harvey, Haskell, Hodgeman, Jewell, Kearny, Kingman, Kiowa, Lane, Lincoln, Logan, McPherson, Meade, Mitchell, Morton, Ness, Norton, Osborne, Ottawa, Pawnee, Phillips, Pratt, Rawlins, Reno, Rice, Rooks, Rush, Russell, Saline, Scott, Seward, Sheridan, Sherman, Smith, Stafford, Stanton, Stevens, Sumner, Thomas, Trego, Wallace, and Wichita.



CONDITIONS OF APPROVAL

Additional BLM requirements to protect a resource or value that does not affect the lessee's rights or restrict location on the lease can be imposed as a condition of approval of the APD.

One such condition utilized to protect migratory birds is as follows:

"All open pits and tanks being used in conjunction with the development of this lease will be covered until they are removed and/or filled and reclaimed. The recommended coverings include hard covers or a screen material of small enough mesh size so as to prevent the entry and the death of migratory birds. The U. S. Fish and Wildlife Service, Division of Law Enforcement has prepared materials which provide more detailed guidelines for covering oil field pits and tanks."

A summary of how stipulations would be applied for Alternative A is presented in Table 2-1 and for Alternative B in Table 2-2.

TABLE 2-1.

FEDERAL LANDS OPEN FOR OIL & GAS LEASING WITH STIPULATIONS FOR ALTERNATIVE A.

SMA PROJECT	AREA ACRES	NSO ND	NSO DD	NSO ELEV.	ORA-1 FLPLN	ORA-2 WET
Clinton	22,000	800	17,125	17,125		
Hillsdale	13,103	1,200	2,921	7,500		
Kanopolis	21,166	1,396	3,400	13,958		
Melvern	24,000	950	5,620	13,950		
Milford	37,000	1,190	6,500	33,000		
Perry	42,000	1,300	7,000	30,600		
Pomona	10,501	800	1,460	8,600		
Tuttle Creek	33,634	900	4,700	33,000		
Wilson	21,796	700	4,200	12,000		
Total KC COE	225,200	9,236	52,926	169,733		
Council Grove	5,980	1,300	2,042	2,638		
El Dorado	16,328	1,200	9,428	5,700		
Elk City	18,469	1,200	7,050	10,219		
Fall River	15,147	700	3,040	11,407		
John Redmond	11,297	1,070	2,400	8,467		
Marion	12,249	400	2,020	9,829		
Pearson-Skubitz	2,547	200	510	1,837		
Toronto	8,623	300	1,350	6,973		
Kaw/Hula/Capon	7,500	-0-	-0-	-0-		
Total TD COE	98,140	6,370	27,840	57,070		
Cedar Bluff	15,125	15,125	1,000	-0-		
Cheney	16,949	16,949	13,417	-0-		
Glen Elder	27,910	27,910	2,000	-0-		
Lovewell	9,261	9,261	500	-0-		
Keith Sebelius	7,849	7,849	2,300	-0-		
Webster	6,903	6,903	1,000	-0-		
Total BOR	83,997	83,997	20,217	-0-		
Fort Riley	69,973	-0-	68,173	-0-	1,800	
Sunflower Army Ammunition Plant	10,000	-0-	-0-	-0-		
Smoky Hill Bombing Range	33,873	-0-	7,171	-0-		
McConnell Air Force Base	2,554	2,554	-0-	-0-		
Total Military	116,400	2,554	75,344	-0-	1,800	
Split-Estate	72,410	-0-	-0-	-0-	3,850	15,147
TOTAL	596,147	120,157	176,327	209,678	5,650	15,147

TABLE 2-2.

ACRES OF FEDERAL MINERALS OPEN FOR OIL & GAS LEASING BY STIPULATION FOR ALTERNATIVE B.

SMA PROJECT	AREA ACRES	NSO ND	NSO DD	NSO ELEV.	ORA-1 FLPLN	ORA-2 WET	ORA-3 TIME	ORA-4 NSO	LN-1 T/E	LN2 BFF
Clinton	22,000	800	17,125	17,125						
Hillsdale	13,103	1,200	2,921	7,500						
Kanopolis	21,166	1,396	3,400	13,958						
Melvern	24,000	950	5,620	13,950						
Milford	37,000	1,190	6,500	33,000						
Perry	42,000	1,300	7,000	30,600						
Pomona	10,501	800	1,460	8,600						
Tuttle Creek	33,634	900	4,700	33,000						
Wilson	21,796	700	4,200	12,000						
Total KC COE	225,200	9,236	52,926	169,733						
Council Grove	5,980	1,300	2,042	2,638			2,638			
El Dorado	16,328	1,200	9,428	5,700			5,700			
Elk City	18,469	1,200	7,050	10,219			10,219			
Fall River	15,147	700	3,040	11,407			11,407			
John Redmond	11,297	1,070	2,400	8,467			2,067			
Marion	12,249	400	2,020	9,829			3,002			
Pearson-Skubitz	2,547	200	510	1,837			800			
Toronto	8,623	300	1,350	6,973			5,576			
Kaw/Hula/Capon	7,500	-0-	-0-	-0-			7,500			
Total TO COE	98,140	6,370	27,840	57,070			48,909			
Cedar Bluff	15,125	15,125	1,000	-0-						
Cheney	16,949	16,949	13,417	-0-						
Glen Elder	27,910	27,910	2,000	-0-						
Lovewell	9,261	9,261	500	-0-						
Keith Sebelius	7,849	7,849	2,300	-0-						
Webster	6,903	6,903	1,000	-0-						
Total SOR	83,997	83,997	20,217	-0-						
Fort Riley	69,973	-0-	68,173	-0-	1,800					
Sunflower Army Ammunition Plant	10,000	-0-	-0-	-0-						
Smoky Hill Bombing Range	33,873	-0-	7,171	-0-						
McConnell Air Force Base	2,554	2,554	-0-	-0-						
Total Military	116,400	2,554	75,344	-0-	1,800					
Split Estate	72,410	-0-	-0-	-0-	3,850	15,147	320	1,212	4,005	66,000
Total	596,147	102,157	176,327	209,678	5,650	15,147	320	1,212	4,005	66,000

SURFACE MANAGEMENT AGENCY STIPULATIONS

Federal mineral resources under SMA lands within Kansas are subject to each SMA's specific leasing stipulations regardless of alternative. Copies of the SMAs' oil and gas leasing stipulations are contained in Appendix 2. Generally, these SMA stipulations can be divided into three categories; no surface occupancy (NSO) with no directional drilling allowed (NSO/ND); NSO with directional drilling (NSO/DD), and NSO described by elevation or surface use if suitable non-agency lands are included in the same drilling unit (NSO/ELEV). The SMAs normally base lease stipulations to the surface land use or allocation at the particular site or installation.

NSO/ND, No Surface Occupancy and No Drilling

This stipulation, common to the COE and the BOR, is designed to protect facilities such as dams, embankments and other areas from damage by oil and gas operations. This stipulation prohibits surface occupancy and directional drilling by the lessee under restricted areas. This stipulation allows the identified area to be included in a lease for the purpose of becoming a part of a drilling unit so that the United States will share in the royalty.

NSO/DD No Surface Occupancy, Open for Directional Drilling

This stipulation is used by SMAs to protect surface resource values and uses from drilling activities. This stipulation is applied to public use areas, recreation areas, state wildlife and waterfowl refuges, historical sites, trails, roads and military training areas. Directional drilling is permitted from outside the identified areas where occupancy is allowed.

NSO/ELEV. No Surface Occupancy based on Elevation

This stipulation is used by the COE in combination with, "No drilling on Government owned surface where alternative surface ownership is available within the same drilling unit" to protect the integrity of their reservoirs at a specific level based upon lake elevation. Normally, this stipulation is subject to negotiation between the SMA and the lessee at the time of operational plan development.

ALTERNATIVE APPLICATION

All Federal minerals within the planning area have been evaluated using the three alternatives as potential management guidance. The following description of alternative application is presented by specific location and includes a short description of how each alternative would apply to each location. The SMA lands are grouped according to agency jurisdiction, the split-estate lands are grouped by county.

Federal minerals closed to leasing within Kansas are listed in Table 2-3.

TABLE 2-3
FEDERAL MINERAL ESTATE CLOSED TO OIL AND GAS LEASING IN ACRES AS OF 1990

PROJECT/AREA	SMA	ACRES
Flint Hills NWR	USFWS	18,500
Kirwin NWR	USFWS	10,778
Quivira NWR	USFWS	21,800
Fort Scott NHL	USNPS	16
Fort Larned NHL	USNPS	718
Ft. Leavenworth	USA	5,226
Ft. Riley	USA	30,700
Kansas Army Ammo Plant	USA	13,727
TOTAL		101,465

Reasons for a SMA to withhold consent to lease vary from agency to agency however, 43 CFR 3100.0-3 specifically

identifies U.S. Wildlife Refuges, National Park Lands, and areas within city limits as excluded from leasing. The fact that all acquired Federal lands in Kansas were obtained for a purpose other than mineral leasing, and that mineral leasing and development may not be compatible with the reason for acquisition, is sufficient to withhold consent. Additionally, it should be pointed out that while these areas are closed to leasing, if federal mineral estate is being drained by adjacent oil and gas activities, the Federal mineral estate being drained will be leased for inclusion in a unit for royalty purposes.

SPECIFIC SITE DESCRIPTIONS

The following descriptions of the various SMA projects are general and brief. A series of corresponding maps of each SMA project follows each SMAs section.

BOR Projects

Oil and gas leasing stipulations for the following reservoir sites are contained in the BOR GP-135 Special Stipulations document which is contained in Appendix 2. The GP-135 stipulations provide for protection of BOR projects by use of buffer zones which prohibit occupancy and/or drilling for a specific distance.

Maximum project protection is provided by the use of NSO/ND to within 1000 feet under the Maximum Water Surface (MWS) by elevation as defined in Standing Operating Procedures of BOR, or to within 2,000 feet under dam embankments and appurtenance structures, outlet works , spillways, etc., or to within one-half mile (2640 feet) of the centerline of any tunnel. Should the maximum project protection stipulation be waived by the BOR, additional restrictions protect recreational developments, wildlife habitats, project facilities and water supplies by creating a NSO/DD buffer ranging from 200 to 500 feet around these areas. Stipulations protecting special wildlife habitats or significant surface resources have been identified by project site. The overlapping buffer zones identified for each surface resource results in stipulation acreage greater than the projects total.

In all cases, GP-135 requires a site specific surface use plan approved by the BOR Regional Director prior to any lease development. Whenever a conflict occurs concerning the applicability of a BOR stipulation, the more restrictive stipulation will apply.

Glen Elder Dam/ Waconda Lake	
Project acres	27,909
Land allocations	
Recreation	1,391
Wildlife Mgt.	12,499
Operations	1,413
Water/ surface area	12,605

Description

The Glen Elder project is located in the Solomon River Valley in Osborne, Mitchell, Cloud, and Ottawa Counties in north-central Kansas. The project consists of Glen Elder Dam and its reservoir, Wacanda Lake, and protective dikes and appurtenant structures. The dam is a multi-purpose structure on the river approximately 6.5 miles below the confluence of the north and south forks of the Solomon River in Mitchell County immediately above the town of Glen Elder. Waconda Lake parallels U.S. Highway No. 24 and the Missouri Pacific Railroad from Glen Elder to Downs, Kansas.

Glen Elder/Waconda provides municipal and industrial water for Beloit, Kansas, on the Solomon River about 12 miles downstream, and three rural water districts, together with recreation, fish and wildlife conservation and water quality benefits.

SMA Lease Stipulations
NSO with no drilling on 27,909 acres at MWS elevation 1,492 feet plus a 1,000 foot buffer as well as a 2,000 foot buffer surrounding the operations facilities.

NSO on approximately 2,000 acres as buffer around recreational and other developments.

The RMP alternative selected would result in:

ALTERNATIVE A. BOR project lands at Glen Elder/Waconda would be available for lease. Stipulations as described above would apply.

ALTERNATIVE B. No change from A.

2ALTERNATIVE C. BOR project lands would not be available for oil and gas lease.

Norton/Keith Sebelius Lake	
Project acres	7,849
Land allocations	
Recreation	1,578
Wildlife Mgt.	5,656
Operations	471
Withdrawn	144

Description
Norton Dam/Keith Sebelius Lake is located along the valley of the Prairie Dog Creek in north-central Kansas. The project consists of Norton Dam and the associated reservoir, Keith Sebelius Lake, the Almena Diversion Dam, Almena Main and South Canals, and a system of laterals and drains. In addition to storing water for irrigation, the project provides water for use in the city of Norton, protects the valley downstream from floods, and offers opportunities for recreation and for conservation and development of fish and wildlife resources.

The Kansas Department of Wildlife and Parks (KDWP) administers the reservoir water surface and wildlife lands above the dam, and the recreation areas. The KDWP also assumes responsibility for the administration of the water surface and wildlife lands above Almena Diversion Dam.

The city of Norton receives its water supply from Norton Reservoir. In 1963, the state of Kansas approved a water right granting the city of Norton a storage limit in Norton Reservoir of 1,600 acre-feet and maximum releases from storage of 1,600 acre-feet per year.

The water surface of Norton Reservoir and the adjoining project land provides excellent opportunities for outdoor recreation and fish and wildlife activities.

The KDWP has established a state park on the Prairie Dog Creek arm of the reservoir. There are excellent facilities, including paved roads, boat launching ramps, picnicking, camping, swimming, fishing, day use activities, and modern water and sanitation facilities. The KDWP administers 5,656 acres for fish and wildlife. A game management and public hunting area has been established.

SMA Lease Stipulations
NSO/ND on approximately 7,849 acres associated with the dam and its 2,000 foot buffer and the reservoir at MWS elevation 2,341 feet and its associated 1,000 foot buffer.

NSO on approximately 2,300 acres as a buffer to recreational facilities, roads, trails and other developments.

The RMP alternative selected would result in:

ALTERNATIVE A. BOR project lands at Norton/Keith Sebelius lake would be available for lease. Stipulations as described above would apply.

ALTERNATIVE B. No change from A.

ALTERNATIVE C. BOR project lands would not be available for oil and gas lease.

Lovewell Reservoir	
Project acres	6,576
Land allocations	
Recreation	1,038
Wildlife Mgt.	5,103
Operations	435

Description

Lovewell Dam is on the White Rock Creek 3 miles northwest of Lovewell, Kansas. The reservoir stores water from White Rock Creek and diversions from the Republican River by way of the Courtland Canal. Lovewell Reservoir provides excellent facilities for outdoor recreation and fish and wildlife activities. Thousands of persons visit the facilities each year. Principal recreational activities include camping, fishing, swimming, boating, and water skiing.

SMA Lease Stipulations

NSO/ND on approximately 6,576 acres within 2,000 feet of the dam, spillway and canal works and within 1,000 feet of the MWS at elevation 1,610 feet. NSO on approximately 500 acres to buffer roads, trails, recreation and other facilities.

The RMP alternative selected would result in:

ALTERNATIVE A. BOR project lands at Lovewell Reservoir would be available for lease. Stipulations as described above would apply.

ALTERNATIVE B. No change from A.

ALTERNATIVE C. BOR project lands would not be available for oil and gas lease.

Cheney Reservoir	
Project acres	16,949
Land allocations	
Recreation	7,300
Wildlife Mgt.	9,300
Operations	349

Description

Cheney Dam and lake is located on the North Fork of the Ninnescah River about 6 miles north of Cheney and 24 miles west of Wichita, Kansas. The site is at the common intersection of the boundaries of Kingman, Reno, and Sedgwick Counties, with portions of the dam lying in all three.

Cheney Reservoir provides a supplemental water supply to the city of Wichita, flood control for protection of downstream areas, and recreation and fish and wildlife benefits.

The construction of Cheney Dam has provided this otherwise arid region of Kansas with a variety of recreational uses and fish and wildlife benefits. Cheney State Park at Cheney Reservoir provides most species of sport fish common to Kansas. White bass and walleye are the favorites of anglers, and there is good fishing for crappie, channel catfish, striped bass, and largemouth bass. There are excellent camping, boating, swimming and picnicking facilities.

The KDWP administers the recreation areas at Cheney Reservoir, including some 1,900 acres of land and over 5,400 acres of water. The KDWP also administers over 5,200 acres of land and 4,100 acres of water for conservation and management of migratory birds and other fish and wildlife resources.

SMA Lease Stipulations

NSO/ND on approximately 16,949 acres within 2,000 feet of the dam and spillway and within 1,000 feet of the MWS at elevation 1,454 feet. NSO to

protect wildlife refuge, bald eagle habitat. Special stipulations (seasonal-height-distance) on the remaining 3,532 acres for wildlife habitat, recreation and facilities protection.

The RMP alternative selected would result in:

ALTERNATIVE A. BOR project lands at Cheney Reservoir would be available for lease. Stipulations as described above would apply.

ALTERNATIVE B. No change from A.

ALTERNATIVE C. BOR project lands would not be available for oil and gas lease.

Webster Reservoir	
Project acres	6,903
Land allocations	
Recreation	880
Wildlife Mgt.	5,592
Operations	431

Description

Webster Dam and Reservoir is located between Woodston and Osborne, Kansas, on the north side of the South Fork of the Solomon River. Webster Dam, 8 miles west of the city of Stockton, is the principal feature of the project. The project provides flood control for areas downstream of the dam, irrigation water to 8,500 irrigable acres of the Webster Irrigation District No. 4, fish and wildlife conservation and enhancement, and recreation opportunities.

The KDWP are involved in the management of recreation and fish and wildlife interests at the reservoir and diversion dam, surface waters, and adjacent lands set aside for those purposes.

Recreation opportunities at Webster Dam and Reservoir, Woodston Diversion Dam, and surrounding areas set aside for that purpose consist of picnicking, camping, swimming, boating, fishing, and other related activities. Normal operation of the Webster Reservoir provides a stable or slightly rising water level which is ideal for spawning fish.

SMA Lease Stipulations

NSO/ND on approximately 6,903 acres associated with the dam and spillway and a 2,000 foot buffer as well as the 1,000 foot buffer surrounding the reservoir at MWS elevation 1938 feet.

NSO on approximately 1,000 acres as buffers to recreational facilities, roads, trails and other developments.

The RMP alternative selected would result in:

ALTERNATIVE A. BOR project lands at Webster Reservoir would be available for lease. Stipulations as described above would apply.

ALTERNATIVE B. No change from A.

ALTERNATIVE C. BOR project lands would not be available for oil and gas lease.

Cedar Bluff Reservoir	
Project acres	15,125
Land allocations	
Recreation	1,640
Wildlife Mgt.	12,689
Operations	496
Research Area	300

Description

The Cedar Bluff project is on the north side of Smoky Hill River, 18 miles southwest of Ellis, Kansas. It consists of an earthfill dam and reservoir, a water delivery system to serve the lands of Cedar Bluff Irrigation District No. 6, and municipal and industrial water service to Russell, Kansas. The project also protects the downstream valley from floods.

Operation of the recreation areas and administration of the water surface and wildlife lands is by the KDWP. Operation and maintenance of all irrigation facilities is by the Cedar Bluff Irrigation District No. 6.

Excellent hunting, fishing, boating, water skiing, swimming, picnicking, and camping attract many visitors to the reservoir each year. Facilities include campgrounds, picnic areas, and boat-launching ramps.

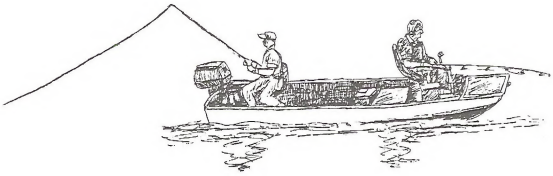
SMA Lease Stipulations
NSO/ND on approximately 15,125 acres within 2,000 feet of the dam and spillway and within 1,000 feet of the MWS at elevation 2,192 feet. NSO on approximately 1,000 acres as a buffer to roads, trails, recreational facilities and other developments.

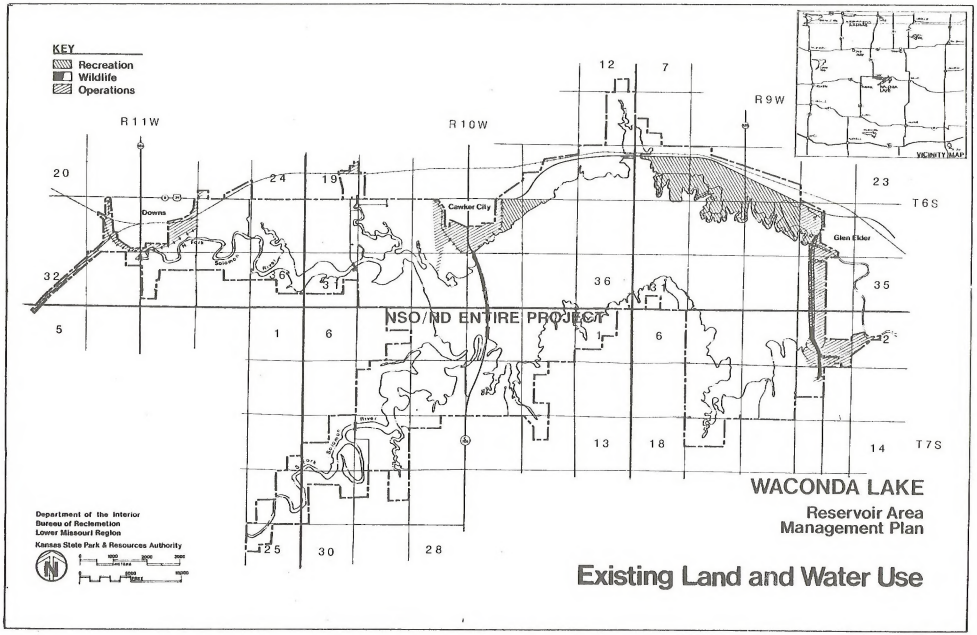
The RMP alternative selected would result in:

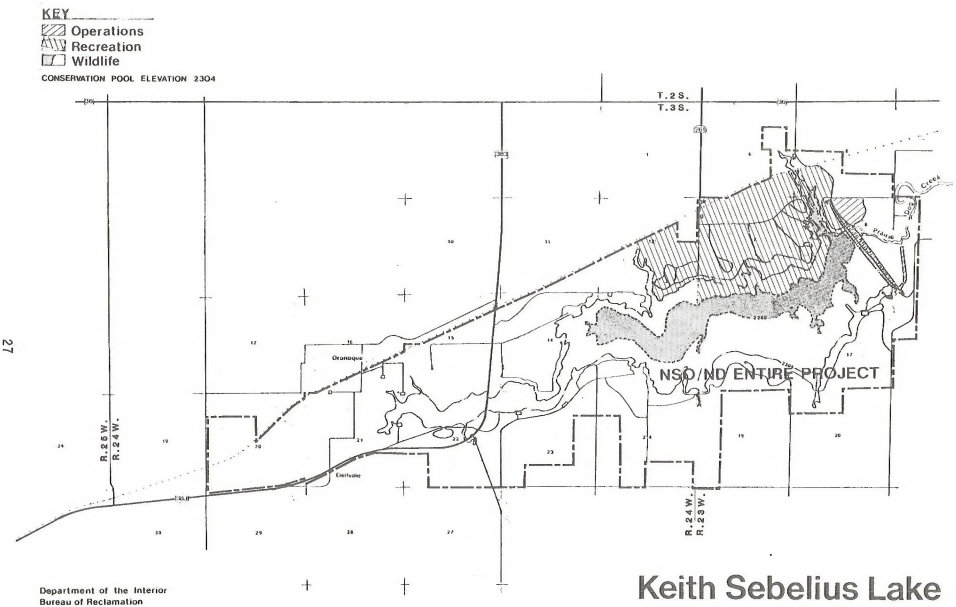
ALTERNATIVE A. Cedar Bluff Reservoir project lands would be available for lease. Stipulations as described above would apply.

ALTERNATIVE B. No change from A.

ALTERNATIVE C. BOR project lands would not be available for oil and gas lease.



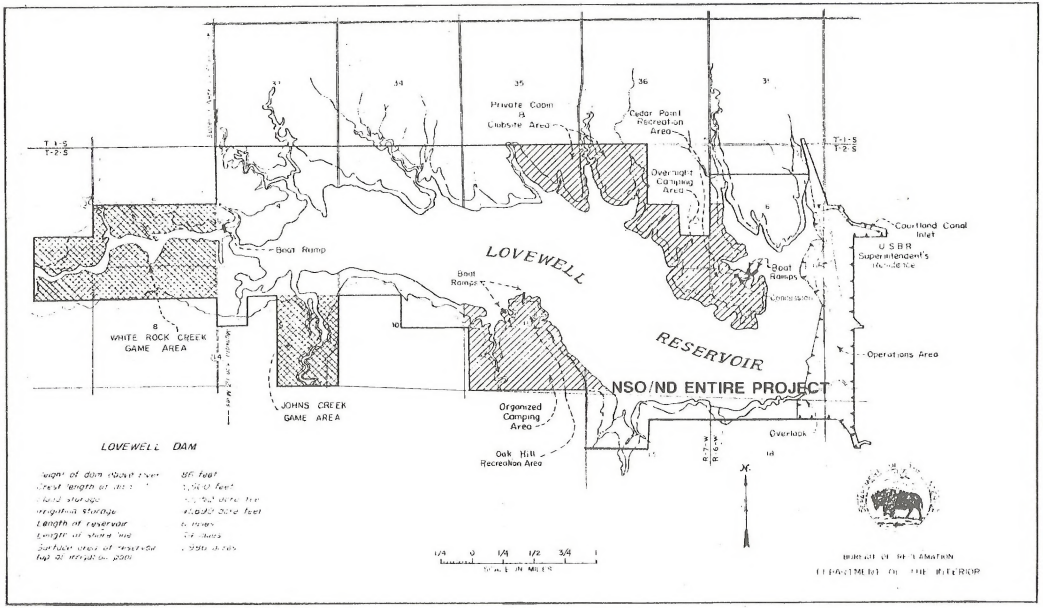

KEY
Recreation
Wildlife
Operations
R11W
R10W
R9W
T6S
T7S
Downs
Cawker City
Glen Elder
NSO/ND ENTIRE PROJECT
VICINITY MAP
WACONDA LAKE
Reservoir Area
Management Plan
Existing Land and Water Use
Department of the Interior
Bureau of Reclamation
Lower Missouri Region
Kansas State Park & Resources Authority



Keith Sebelius Lake

Reservoir Area Management Plan

Proposed Land and Water Use


NSO/ND ENTIRE PROJECT
LOVEWELL RESERVOIR
LOVEWELL DAM
Private Cabin & Clubsite Area
Cedar Point Recreation Area
Overnight Camping Area
Courtland Canal Inlet
USBR Superintendent's Residence
Boat Ramps
Concession
Operations Area
Boat Ramp
Boat Ramps
WHITE ROCK CREEK GAME AREA
JOHNS CREEK GAME AREA
Organized Camping Area
Oak Hill Recreation Area
Overlook
T 1 S
T 2 S
R 2 W
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34
35
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SCALE IN MILES
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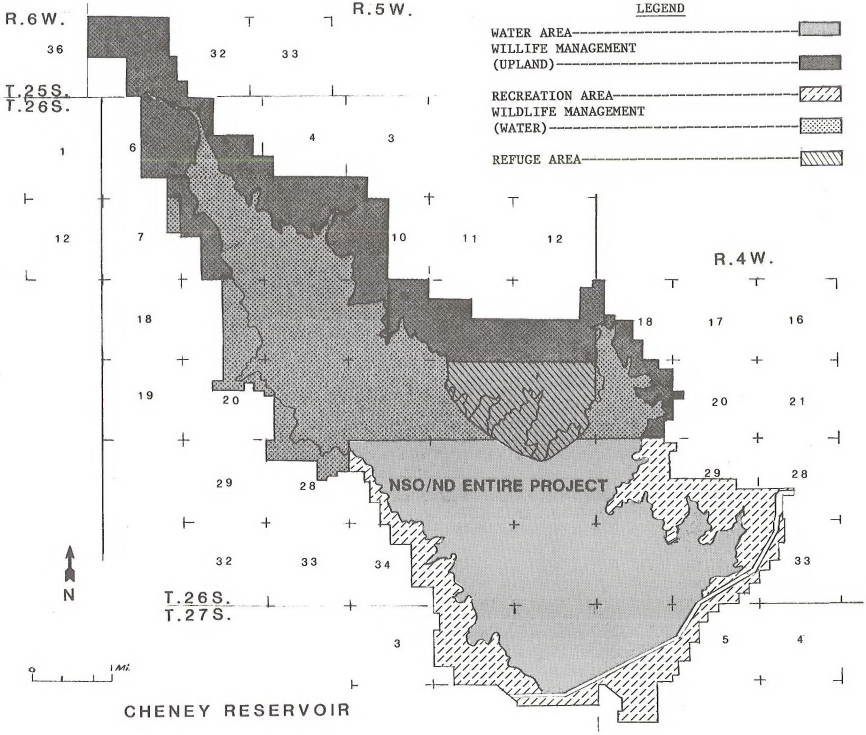
R.6W.
R.5W.
R.4W.
T.25S.
T.26S.
T.26S.
T.27S.
LEGEND
WATER AREA
WILLIFE MANAGEMENT (UPLAND)
RECREATION AREA
WILDLIFE MANAGEMENT (WATER)
REFUGE AREA
NSO/ND ENTIRE PROJECT
N
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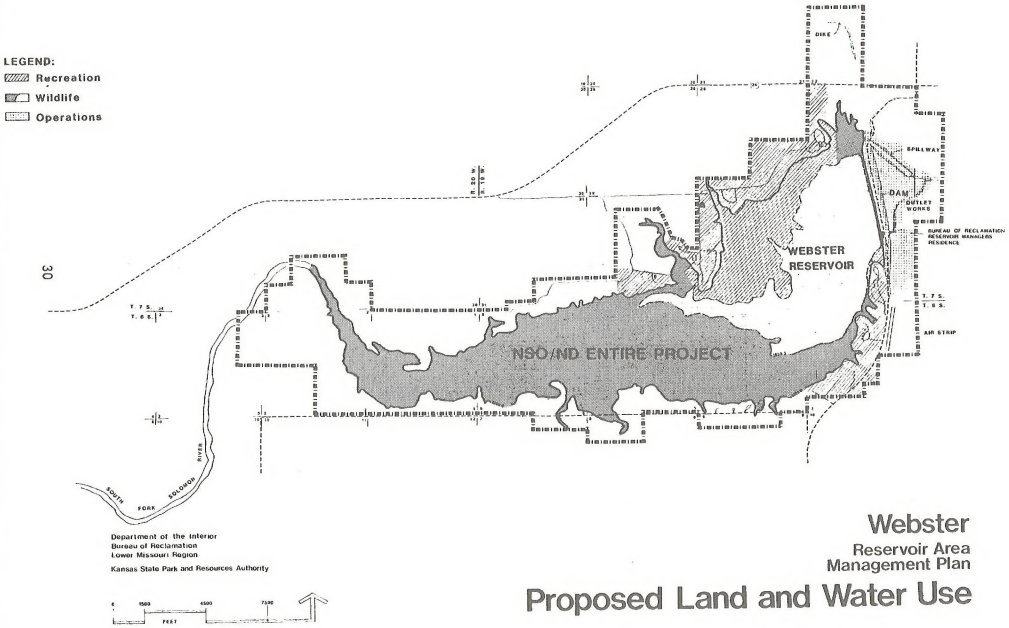
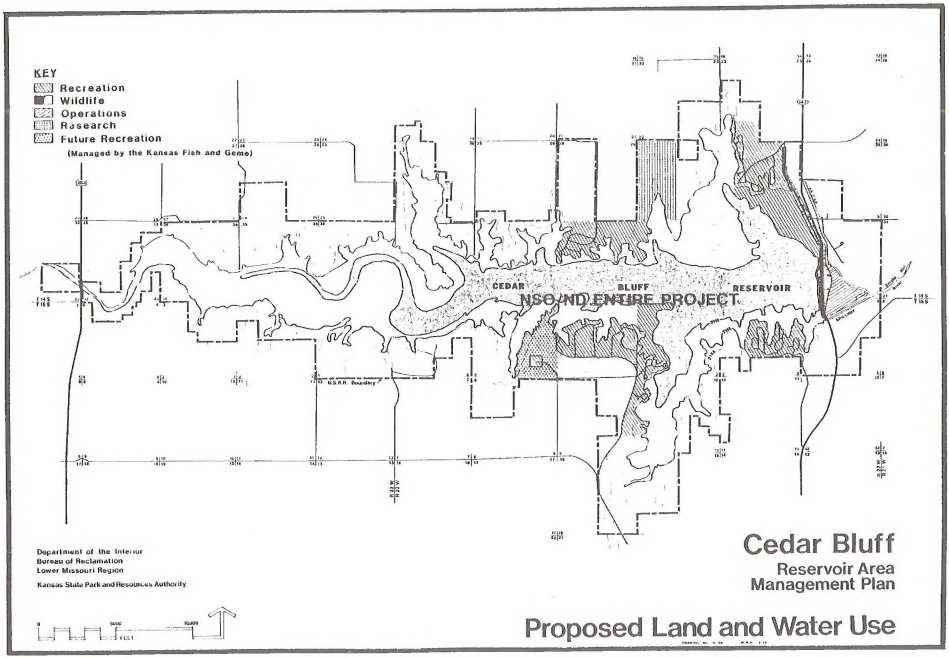
CHENEY RESERVOIR



Webster
Reservoir Area Management Plan
Proposed Land and Water Use


KEY
Recreation
Wildlife
Operations
Research
Future Recreation
(Managed by the Kansas Fish and Game)
CEDAR
BLUFF
RESERVOIR
NSO/ND ENTIRE PROJECT
U.S.R.R. Boundary
Department of the Interior
Bureau of Reclamation
Lower Missouri Region
Kansas State Park and Resources Authority
FEET
Cedar Bluff
Reservoir Area
Management Plan
Proposed Land and Water Use

USA, COE

Tulsa District Projects

Oil and gas leasing stipulations for the Tulsa District COE projects are contained within the Districts Special Stipulations 1-A, a copy of which is contained in Appendix 2. These 1-A stipulations provide for the protection of surface resources through the use of surface occupancy restrictions, drilling restrictions or consultation requirements with authorized surface lessees (KDWP). Generally, 1-A requires NSO or directional drilling within 2,000 feet under restricted areas. Restricted areas include the major structures such as the dam, spillways, embankments, etc. All existing or proposed public use areas, recreation areas, wildlife and waterfowl refuges, historical sites, and hiking or horseback trails are designated NSO. The 1-A stipulations are standardized and apply to all Tulsa District projects.

Council Grove Lake	
Project acres	5,980
Land allocations	
Operations	600
Recreation	2,742
Wildlife Mgt,	2,638

Description
Council Grove Lake is located on the Grand (Neosho) River about 1.5 miles northwest of the town of Council Grove in Morris County. In addition to flood control, Council Grove Lake is used for water quality control, recreation, and water supply.

At Council Grove Lake, 2,638 acres of land and water are licensed to the KDWP for game management and public hunting. Wildlife management practices conducted by the COE include the construction and placement of wood duck boxes, wildlife food plots, tree and shrub plantings for wildlife cover, and livestock control to improve the habitat.

SMA Lease Stipulations
NSO/ND on approximately 1,300 acres associated with restricted areas. NSO/DD on approximately 2,042 acres associated with recreation areas. NSO/ELEV on approximately 2,638 acres of wildlife management lands and conservation pool where alternative surface ownership is available within the same drilling unit.

The RMP alternative selected would result in:

ALTERNATIVE A. COE project lands at Council Grove Lake would be available for oil and gas lease. Tulsa District COE 1-A stipulations as described above would apply.

ALTERNATIVE B. In addition to stipulations required under Alternative A, ORA-3 Seasonal Surface Use Restrictions would apply from Sept. 01, through March 31, on approximately 2,638 acres of wildlife management lands subject to drilling if not included within a drilling unit.

ALTERNATIVE C. Federal minerals within this project would not be available for lease.

El Dorado Lake	
Project acres	16,328
Land allocations	
Operations	600
Recreation	9,968
Wildlife Mgt.	5,760

Description
El Dorado dam and reservoir, is located on the Walnut River about 4 miles northeast of the town of El Dorado in Butler County.

Conservation storage at El Dorado Lake provides a dependable yield of 22.2 million gallons per day (mgd) for water

supply. Four recreational-use areas, totaling about 2,900 acres, have been developed above the dam. About 700 acres below the dam were developed to provide access to the stream for fishing and other recreational purposes. Other areas will be developed on the east and west sides of the lake.

SMA Lease Stipulations
NSO/ND on approximately 1,200 acres associated with operational restrictions. NSO/DD on approximately 9,428 acres of recreational areas. NSO/ELEV on the approximately 5,700 acres of wildlife management lands or within the conservation pool where alternate surface ownership is available for drilling within a particular drilling unit.

The RMP alternative selected would result in:

ALTERNATIVE A. COE project lands at El Dorado Lake would be available for oil and gas lease. Tulsa District COE 1-A stipulations as described above would apply.

ALTERNATIVE B. In addition to stipulations required under Alternative A, ORA-3, Season of Use Restrictions from Sept. 01, through March 31, to protect seasonal wildlife use and recreation (hunting) on approximately 5,700 acres.

ALTERNATIVE C. Federal minerals within this project would not be available for lease.

Elk City Lake	
Project acres	18,469
Land allocations	
Operations	300
Recreation	5,550
Waterfowl Refuge (KDWP)	1,500
Wildlife Mgt.	11,119

Description
Elk City Lake is located on the Elk River, a tributary of the Verdigris River in Montgomery County. The dam is approximately 7 miles east of Elk City and 7 miles northwest of Independence. In addition to flood control, Elk City Lake is operated for water supply and water quality control. The conservation storage provides a dependable yield of 10.0 mgd for water supply and 7.4 mgd for water quality control. The lake currently has a surface area of 4,450 acres at the top of the conservation pool. In cooperation with Kansas state agencies to further enhance the wildlife habitat, a lake level manipulation plan has been implemented at Elk City Lake. The lake is raised or lowered seasonally to make conditions more conducive to fish and wildlife management.

The KDWP has a license to approximately 12,240 acres of project area for game management and public hunting. An additional 2,180 acres of project land managed by the COE are open to the public for hunting.

The KDWP also manages Squaw Creek Cove State Park at the project.

SMA Lease Stipulations
NSO/ND on approximately 1,200 acres associated with the Dam, spillway, and canals. NSO/DD on approximately 7,050 acres associated with recreation, refuges, and other designations. NSO on approximately 10,219 acres of wildlife management lands or the conservation pool where alternate lands within a drilling unit are available.

The RMP alternative selected would result in:

ALTERNATIVE A. COE project lands at Elk City Lake would be available for oil and gas lease. Tulsa District COE 1-A stipulations as described above would apply.

ALTERNATIVE B. In addition to stipulations required under Alternative A, ORA-3 Season of Use restrictions on the 10,219 acres of wildlife management lands would apply from Sept. 01, through March 31, to protect wintering waterfowl and hunting use.

ALTERNATIVE C. Federal minerals within this project would not be available for lease.

Fall River Lake	
Project acres	15,147
Land allocations	
Operations	200
Recreation	2,400
Waterfowl refuge (KDWP)	640
Wildlife Mgt. (KDWP)	8,712
Wildlife Mgt. (COE)	3,195

Description

Fall River Lake is located in Greenwood County on Fall River, a tributary of the Verdigris River. The lake is about 4 miles northwest of the town of Fall River and approximately 17 miles southeast of Eureka. The lake is about a mile wide at the damsite and stretches 15 miles up Fall River. The towns of Fredonia, Neodesha, Independence, and Coffeyville receive flood protection benefits from the project. Regulated releases of water during dry seasons provide a dependable supply of water to a number of municipalities, industries, and farmers who obtain their water directly from Fall River. These supplementary flows are also beneficial in the abatement of pollution.

At Fall River Lake, four public-use areas are managed by the COE and three are managed by the KDWP. Cabins, clubs and cottages have been developed by private interests.

All project lands are open to the public for hunting except for developed park areas, state parks, and land in the vicinity of the dam and other project structures. Approximately 9,352 acres of project land, made available to the Kansas Fish Game Commission for use as a wildlife management area, are also open to the public for hunting.

SMA Lease Stipulations

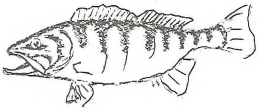
NSO/ND on approximately 700 acres associated with restricted project facilities and a 2,000 foot buffer. NSO/DD on approximately 3,040 acres of recreation areas and waterfowl refuges. NSO/ELEV on approximately 11,407 acres of wildlife management lands or the conservation pool where alternative surface ownership is available within the same drilling unit.

The RMP alternative selected would result in:

ALTERNATIVE A. COE project lands at Fall River Lake would be available for oil and gas lease. Tulsa District COE 1-A stipulations as described above would apply.

ALTERNATIVE B. In addition to stipulations required under Alternative A, ORA-3 Season of Use Restrictions would apply from Sept. 01, through March 31, on the 11,407 acres of wildlife management lands to protect wintering wildlife and hunting use for those areas not included within alternate drilling unit areas.

ALTERNATIVE C. Federal minerals within this project would not be available for lease.



John Redmond Dam and Reservoir	
Project acres	29,797
Land allocations	
Operations	430
Recreation (Land & Water)	8,800
Waterfowl Refuge (USFWS)	18,500
Wildlife Mgt.	2,067

Description

The John Redmond Dam and Reservoir is a unit in a system designed for flood control and low flow regulation of the Grand (Neosho) River Basin. In addition to flood control, the reservoir provides water supply storage, water quality control, and recreation. The water supply storage in the conservation pool can provide a dependable yield of 24.5 mgd.

The KDWP and the COE are cooperating in improving the fishery at John Redmond by stocking Striped Bass and other species of game fish. A 13.5 acre forage pond is located below the dam. The KDWP has a license to 1,637 acres of project land for wildlife management. The licensed area is known as the Otter Greek Game Management Area.

The U.S. Fish and Wildlife Service, under a cooperative agreement with the Corps of Engineers, operates the approximately 18,500 acre Flint Hills National Wildlife Refuge at this reservoir. The refuge is managed as part of the national migratory waterfowl program and much of it is open for seasonal public hunting. In addition, approximately 3,000 acres of COE managed lands are open to the public for hunting.

SMA Lease Stipulations

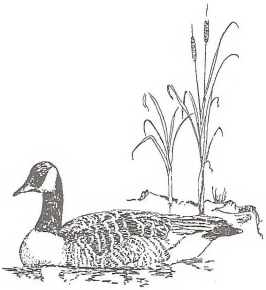
NSO/ND on approximately 1,070 acres associated with operational structures and other restricted areas as well as a 2,000 foot buffer. NSO/DD on approximately 2,400 acres of recreation areas. NSO/ELEV on 8,467 acres of wildlife management and conservation pool lands where alternative surface ownership is available within the same drilling unit. The approximately 18,500 acres of the Flint Hills National Wildlife Refuge is closed to leasing.

The RMP alternative selected would result in:

ALTERNATIVE A. COE project lands at John Redmond Lake would be available for oil and gas lease. Tulsa District COE 1-A stipulations as described above would apply.

ALTERNATIVE B. In addition to stipulations required under Alternative A, ORA-3 Season of Use Restrictions would apply from Sept. 01 through March 31, on the approximately 2,067 acres of wildlife management lands subject to drilling if not included in a drilling unit with alternative surface ownership.

ALTERNATIVE C. Federal minerals within this project would not be available for lease.



Marion Lake	
Project acres	12,249
Land allocations	
Operations	160
Recreation (Land & Water)	8,587
Waterfowl refuge (KDWP)	520
Wildlife Mgt. (KDWP)	3,002

Description

Marion Lake is located on the Cottonwood River, a tributary of the Grand (Neosho) River, about 3 miles northwest of the city of Marion and about 46 miles northeast of Wichita. The project was authorized for flood control, water supply, and other conservation uses by the Flood Control Act of 1950. Conservation storage at Marion Lake provides a dependable yield of 3.0 mgd for water supply.

At Marion Lake, 3,522 acres of project land and water in the upper reaches have been leased to the KDWP for wildlife management and public hunting. This area includes a 520-acre waterfowl refuge installed by KDWP in 1968. The project land not under lease is managed by the COE for fish and wildlife purposes.

The COE is creating suitable wildlife habitats through various vegetative management techniques such as food plot plantings, controlled burning, tree and shrub planting, and through improvement of shoreline habitat. The primary objectives of the resource management is to preserve and improve wildlife habitat and to attract small game species and waterfowl into areas used by hunters and into areas where they may be observed by the public.

SMA Lease Stipulations

NSO/ND on approximately 400 acres associated with the dam, spillway, dikes and other operational facilities with a 2,000 foot buffer. NSO/DD on approximately 2,020 acres of recreational and waterfowl refuge lands. NSO/ELEV on the approximately 9.829 acres of wildlife management lands and conservation pool where alternative surface ownership is available within the same drilling unit.

The RMP alternative selected would result in:

ALTERNATIVE A. COE project lands at Marion Lake would be available for oil and gas lease. Tulsa District COE 1-A stipulations as described above would apply.

ALTERNATIVE B. In addition to stipulations required under Alternative A, ORA-3 Seasonal Surface Use Restrictions would apply from Sept. 01, through March 31, on approximately 3,002 acres of wildlife management lands subject to drilling if not included in a drilling unit with alternative surface ownership.

ALTERNATIVE C. Federal minerals within this project would not be available for lease.

Pearson-Skubitz Big Hill Lake	
Project acres	2,547
Land allocation	
Operations	80
Recreation (Land & Water)	1,250
Wildlife Mgt.(Land & Water)	1,217

Description

Pearson-Skubitz Big Hill Lake is located on Big Hill Creek, 4.5 miles east of Cherryvale in Labette County, the project was authorized by the Flood Control Act of 1962 to provide flood control, municipal and industrial water supply, and recreation. The conservation pool provides a water supply yield of 8.5 mgd.

SMA Lease Stipulations

NSO/ND on about 200 acres associated with the restricted operations area as well as a 2,000 foot buffer. NSO/DD on

approximately 510 acres of recreation areas. NSO/ELEV on approximately 1,837 acres of wildlife management land and conservation pool where alternative surface ownership is available within the same drilling unit.

The RMP alternative selected would result in:

ALTERNATIVE A. COE project lands at Big Hill Lake would be available for oil and gas lease. Tulsa District COE 1-A stipulations as described above would apply.

ALTERNATIVE B. In addition to stipulations required under Alternative A, ORA-3 Season of Use Restrictions would apply from Sept. 01, through March 31, on the approximately 800 acres of wildlife management lands subject to drilling if not included in a drilling unit with alternative surface ownership.

ALTERNATIVE C. Federal minerals within this project would not be available for lease.

Toronto Lake	
Project acres	8,623
Land allocations	
Operations	200
Recreation (Land & Water)	2,747
Waterfowl Refuge (KDWP)	100
Wildlife Mgt.(KDWP & COE)	5,576

Description

Toronto Lake is located on the Verdigris River about 4 miles southeast of the town of Toronto, in the Flint Hills Region of Woodson and Greenwood Counties. Toronto Lake was authorized for flood control and conservation by the Flood Control Act of 1941.

Toronto Lake contributes toward the protection of the flood plains of the Arkansas and Mississippi Rivers downstream from the Verdigris River. Low flow releases during dry periods and other major benefits are also provided by the project. Conservation storage at Toronto Lake provides a dependable yield of 0.1 mgd for water supply.

Duck Island and the upper half of the reservoir, totaling some 4,366 acres of land and water have been licensed to the KDWP. These areas, and an additional 1,310 acres of project land, are managed primarily for public hunting.

SMA Lease Stipulations

NSO/ND on approximately 300 acres of operations facilities as well as a 2,000 foot buffer. NSO/DD on approximately 1,350 acres associated with recreation areas and the Duck Island Waterfowl Refuge. NSO/ELEV on approximately 6,973 acres of wildlife management lands and the conservation pool where alternative surface ownership is available within the same drilling unit.

The RMP alternative selected would result in:

ALTERNATIVE A. COE project lands at Toronto Lake would be available for oil and gas lease. Tulsa District COE 1-A stipulations as described above would apply.

ALTERNATIVE B. In addition to stipulations required under Alternative A, ORA-3 Seasonal Surface Use Restrictions would apply from Sept. 01, through March 31, on approximately 5,576 acres of wildlife management lands subject to drilling if not included in a drilling unit with alternative surface ownership.

ALTERNATIVE C. Federal minerals within this project would not be available for lease.

Kaw, Hulah, and Capon Lakes

Project acres 7,500

Land allocations

The portions of these Oklahoma reservoirs located within Kansas are entirely allocated for wildlife management purposes.

SMA Lease Stipulations

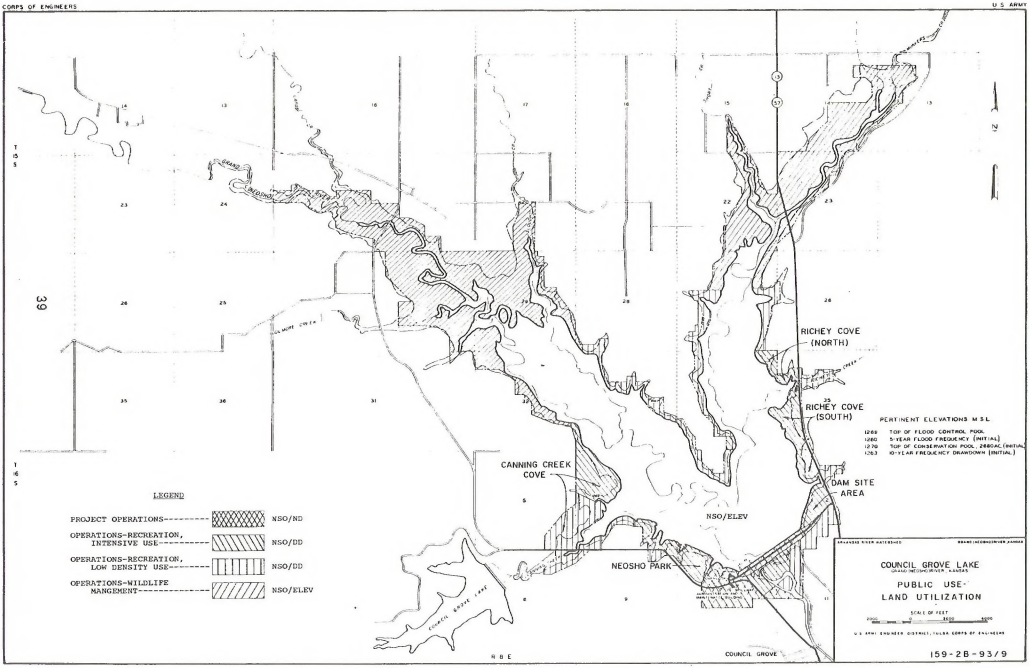
NSO/ELEV on all wildlife management lands where alternative surface ownership is available within the same drilling unit.

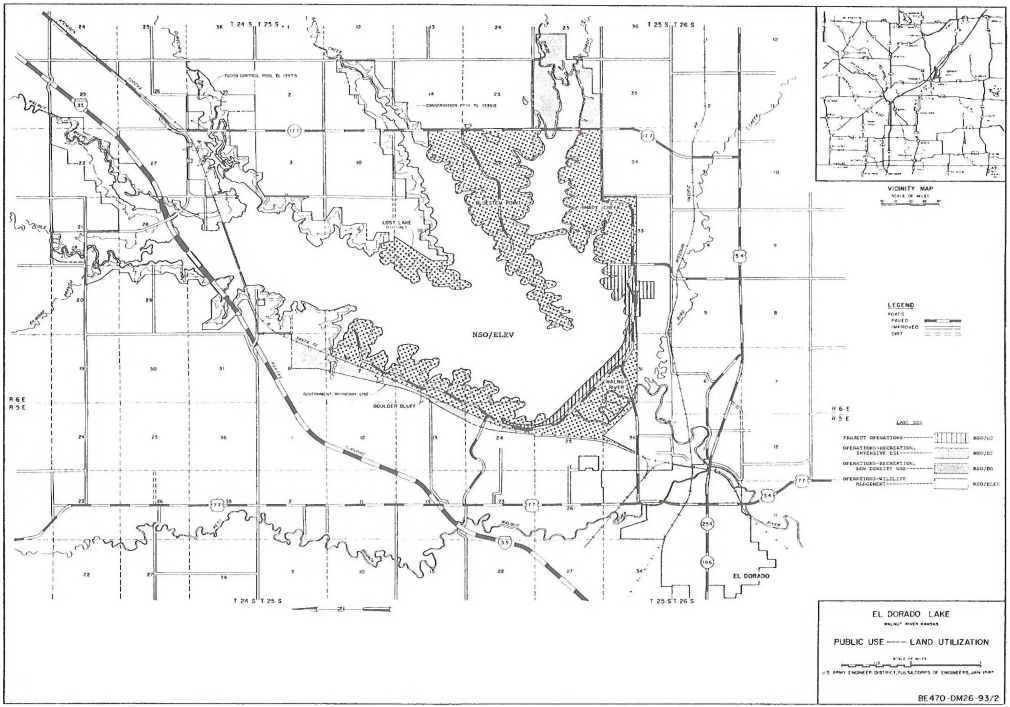
The RMP alternative selected would result in:

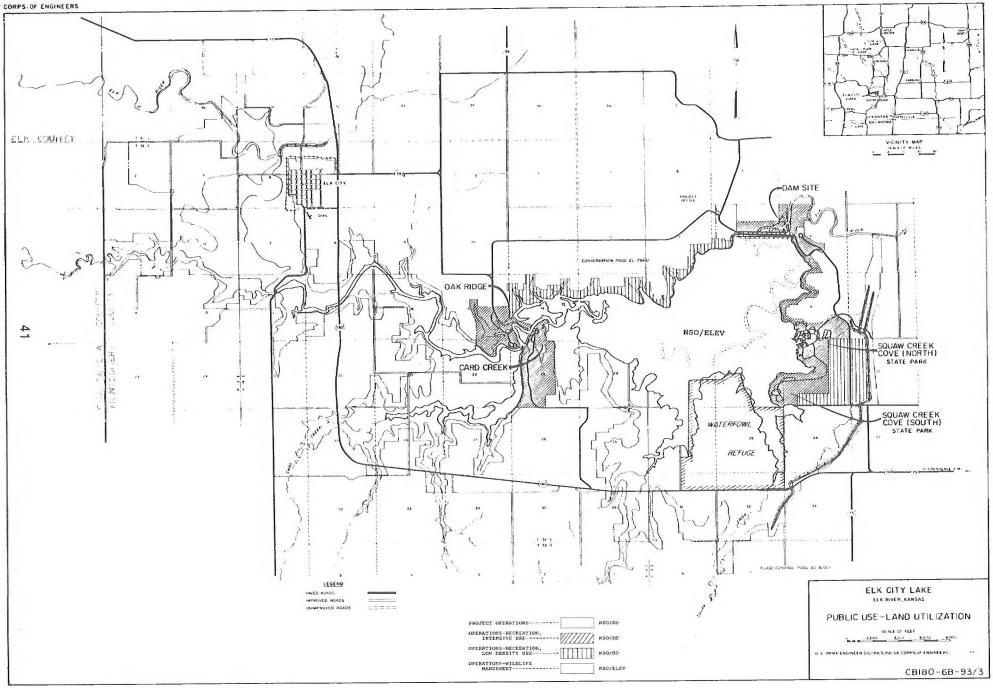
ALTERNATIVE A. COE project lands within Kansas located at these Lakes would be available for oil and gas lease. Tulsa District COE 1-A stipulations as described above would apply.

ALTERNATIVE B. In addition to stipulations required under Alternative A, ORA-3 Season of Use Restrictions would apply from Sept. 01, through March 31, on all wildlife management lands subject to drilling if not included in a drilling unit with alternative surface ownership.

ALTERNATIVE C. Federal minerals within these projects would not be available for lease.


RICHEY COVE (NORTH)
RICHEY COVE (SOUTH)
CANNING CREEK COVE
DAM SITE AREA
NSO/ELEV
NEOSHO PARK
COUNCIL GROVE LAKE
COUNCIL GROVE
T 15 S
T 16 S
R 8 E
R 12 E
LEGEND
PROJECT OPERATIONS-------- NSO/ND
OPERATIONS-RECREATION, INTENSIVE USE--------- NSO/DD
OPERATIONS-RECREATION, LOW DENSITY USE-------- NSO/DD
OPERATIONS-WILDLIFE MANGEMENT---------- NSO/ELEV
PERTINENT ELEVATIONS M S L
1266 TOP OF FLOOD CONTROL POOL
1260 5-YEAR FLOOD FREQUENCY [INITIAL]
1270 TOP OF CONSERVATION POOL 2480AC [INITIAL]
1263 10-YEAR FREQUENCY DRAWDOWN [INITIAL]
ARKANSAS RIVER WATERSHED
BRANDI NEOSHO RIVER, KANSAS
COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER - KANSAS
PUBLIC USE-
LAND UTILIZATION
SCALE OF FEET
U S ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS
159-2B-93/9


T 24 S T 25 S
T 25 S T 26 S
FLOOD CONTROL POOL EL 1147.5
CONSERVATION POOL EL 1139.0
LOST LAKE
NSO/ELEV
SOUTHWEST BOUNDARY LINE
BOULDER BLUFF
WALNUT RIVER
EL DORADO
R 6 E
R 5 E
VICINITY MAP
LEGEND
ROADS
PAVED
IMPROVED
DIRT
LAND USE
PROJECT OPERATIONS
NSO/ALL
OPERATIONS-RECREATION, INTENSIVE USE
NSO/EC
OPERATIONS-RECREATION, LOW DENSITY USE
NSO/DG
OPERATIONS-WILDLIFE MANAGEMENT
NSO/ELEV
EL DORADO LAKE
WALNUT RIVER KANSAS
PUBLIC USE ---- LAND UTILIZATION
U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS, APR 1987
BE470-DM26-93/2



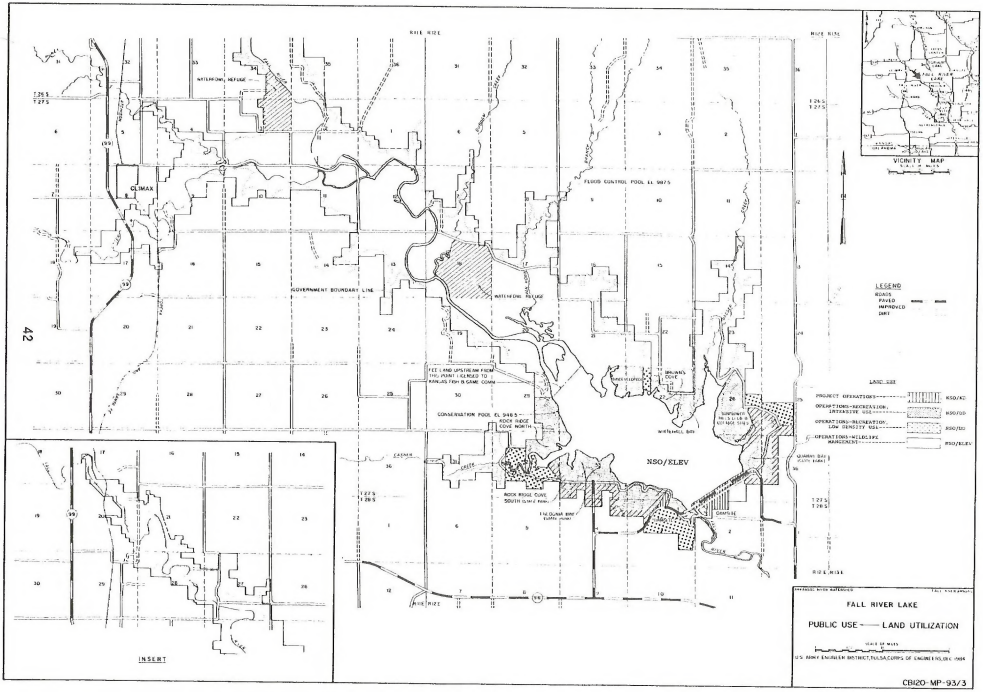
ELK CITY LAKE
ELK RIVER, KANSAS

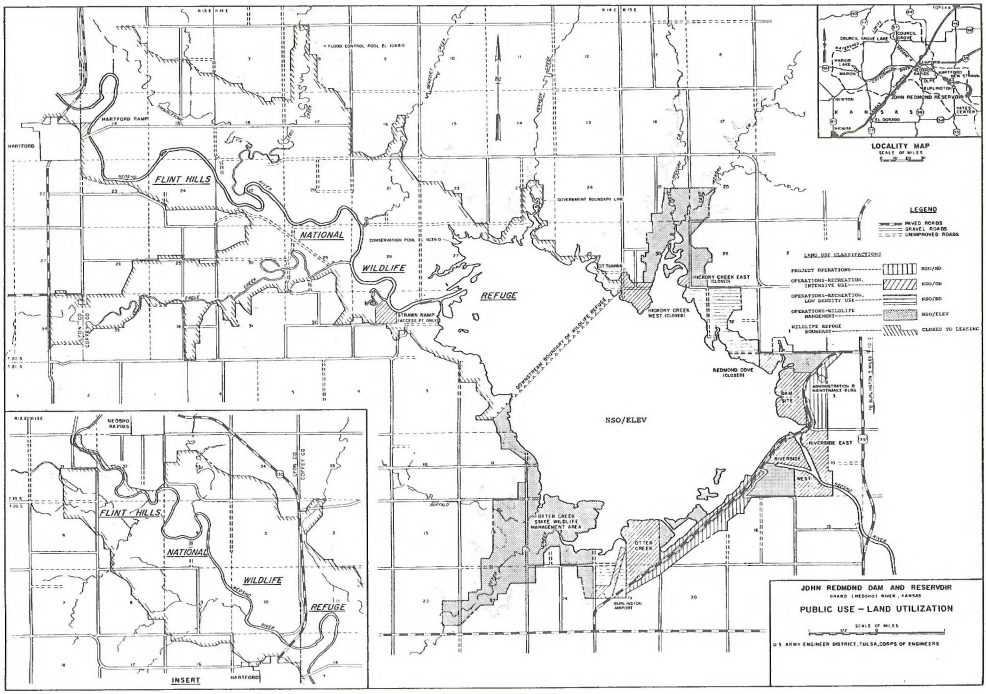
PUBLIC USE - LAND UTILIZATION

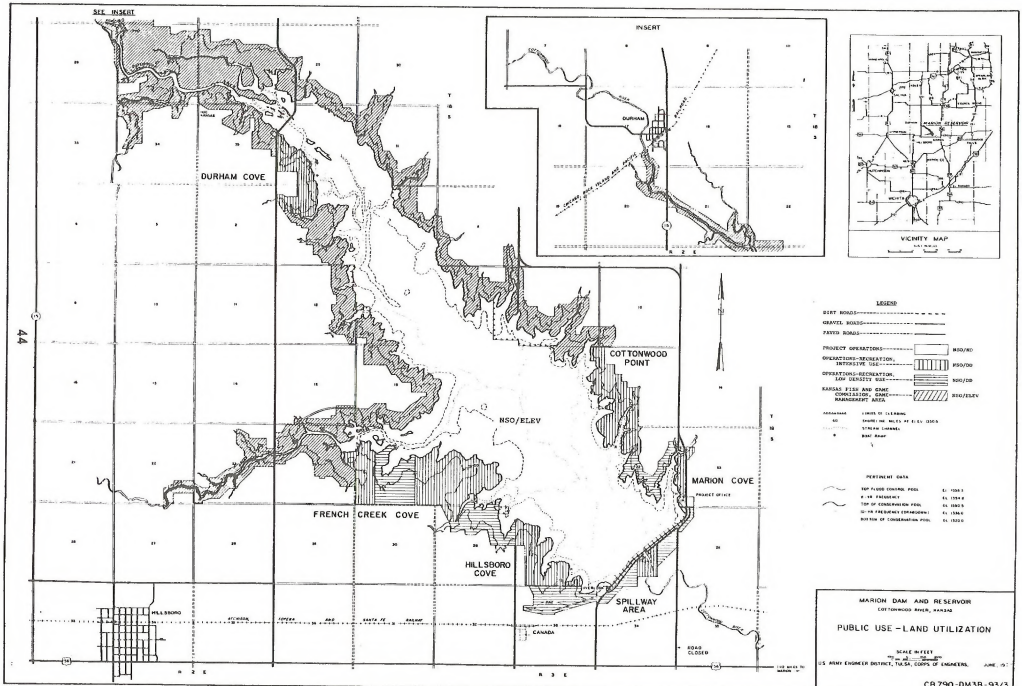
SCALE OF FEET

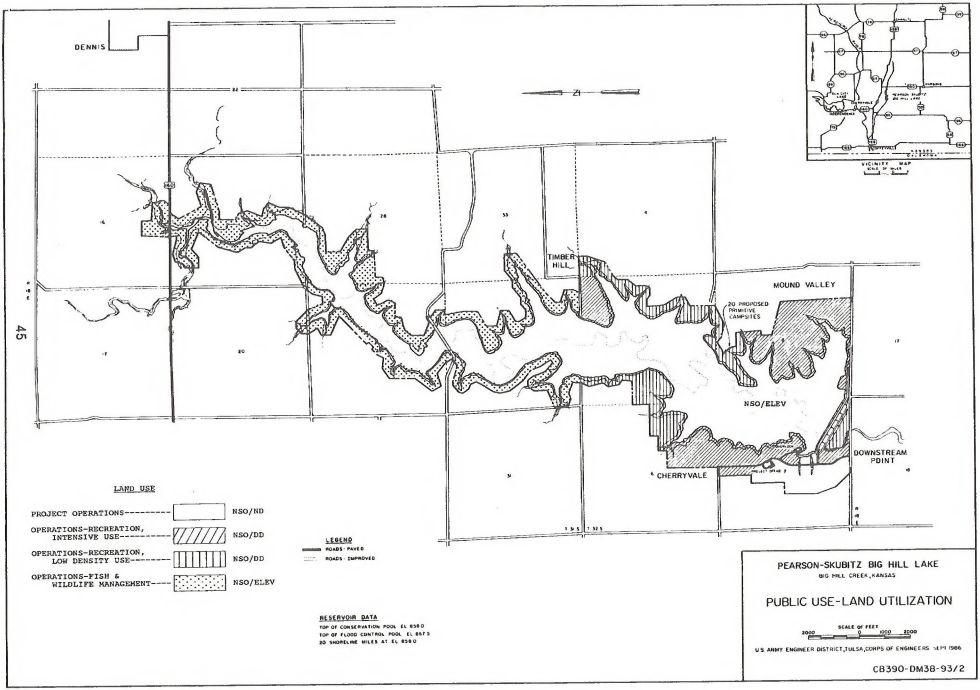
U.S. ARMY ENGINEER DISTRICT, KANSAS CITY (CORPS OF ENGINEERS)

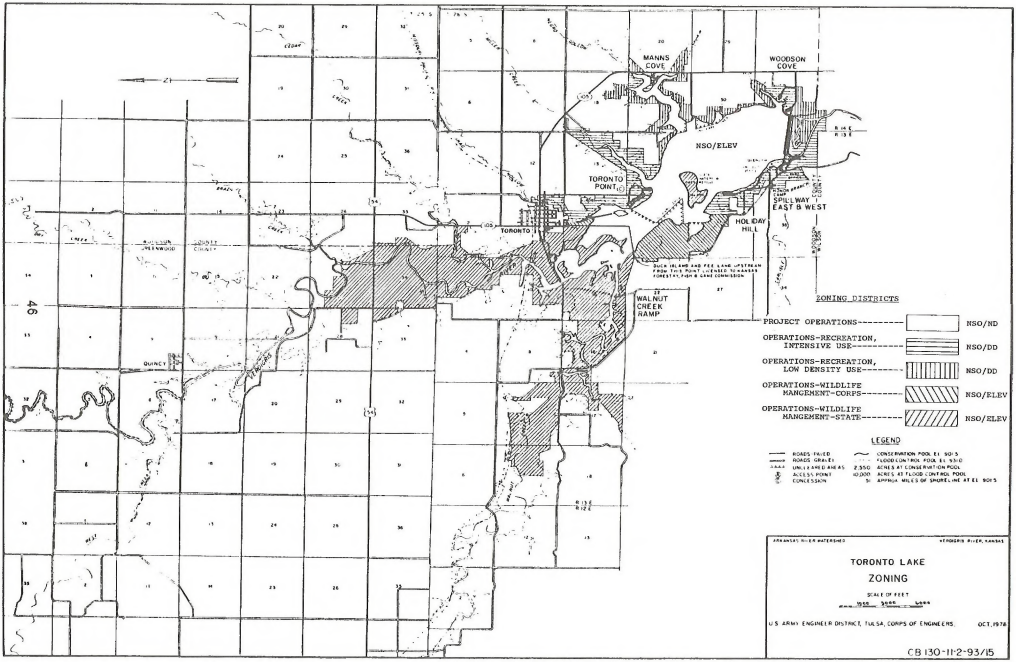
CBI80-GB-93/3

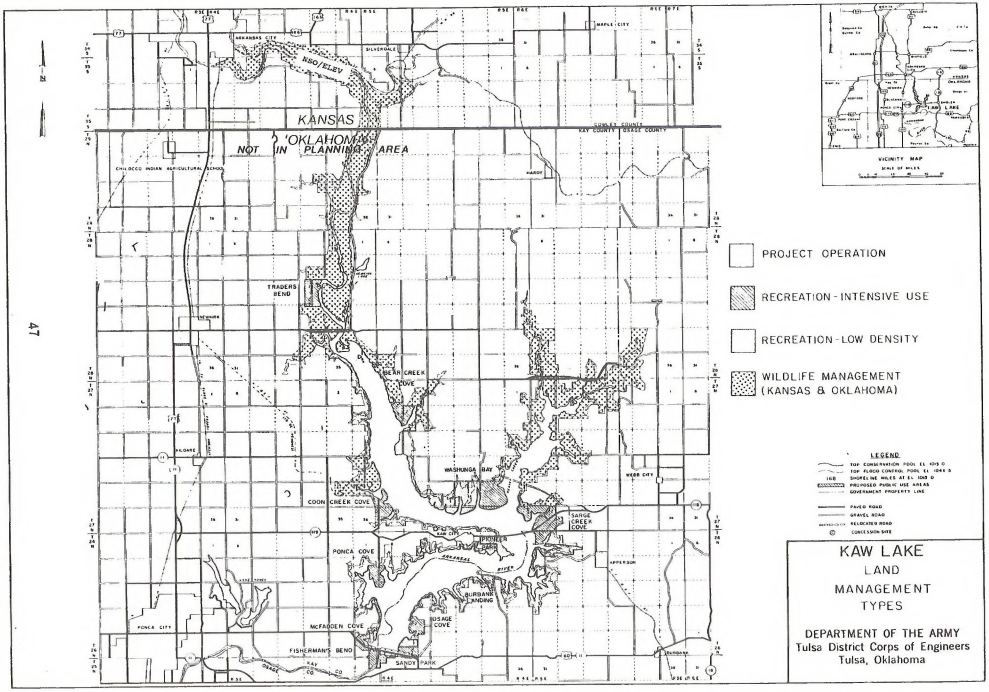

FALL RIVER LAKE
PUBLIC USE — LAND UTILIZATION
CLIMAX
WATERFOWL REFUGE
GOVERNMENT BOUNDARY LINE
FLOOD CONTROL POOL EL 987.5
CONSERVATION POOL EL 946.5
ROCK RIDGE COVE NORTH
ROCK RIDGE COVE SOUTH
NSO/ELEV
INSERT
VICINITY MAP
LEGEND
PAVED
IMPROVED
DIRT
LAND USE
PROJECT OPERATIONS
OPERATIONS-RECREATION: INTENSIVE USE
OPERATIONS-RECREATION: LOW DENSITY USE
OPERATIONS-RESERVE MANAGEMENT
RSO/RC
RSO/DU
RSO/DU
RSO/RLEV
U.S. ARMY ENGINEER DISTRICT, KANSAS CITY, CORPS OF ENGINEERS, DEC. 1984
CB120-MP-93/3


JOHN REDMOND DAM AND RESERVOIR
GRAND (NEOSHO) RIVER, KANSAS
PUBLIC USE – LAND UTILIZATION
SCALE OF MILES
U.S. ARMY ENGINEER DISTRICT, TULSA, CORPS OF ENGINEERS
LOCALITY MAP
SCALE OF MILES
LEGEND
PAVED ROADS
GRAVEL ROADS
UNIMPROVED ROADS
LAND USE CLASSIFICATIONS
PROJECT OPERATIONS
NSO/RD
OPERATIONS-RECREATION, INTENSIVE USE
NSO/RD
OPERATIONS-RECREATION, LOW DENSITY USE
NSO/RD
OPERATIONS-WILDLIFE MANAGEMENT
NSO/ELEV
WILDLIFE REFUGE BOUNDARY
CLOSED TO LEASING
NSO/ELEV
FLOOD CONTROL POOL EL 1028.0
CONSERVATION POOL EL 1035.0
GOVERNMENT BOUNDARY LINE
SPECIFIED BOUNDARY OF WILDLIFE REFUGE
HARTFORD RAMP
HARTFORD
FLINT HILLS
NATIONAL
WILDLIFE
REFUGE
ST. TUMBAS
HICKORY CREEK EAST (CLOSED)
HICKORY CREEK WEST (CLOSED)
REDMOND COVE (CLOSED)
ADMINISTRATION & MAINTENANCE BLDG.
RIVERSIDE EAST
RIVERSIDE WEST
BUTTER CREEK STATE WILDLIFE MANAGEMENT AREA
BUTTER CREEK
BURLINGTON AIRPORT
BURLINGTON
EMPORIA
COUNCIL GROVE LAKE
MARION
CHASE
ELDORADO
WICHITA
TOPEKA
KANSAS
INSERT
NEOSHO RAPIDS
COTTONWOOD
COTTONWOOD CO
FLINT HILLS
NATIONAL
WILDLIFE
REFUGE
HARTFORD

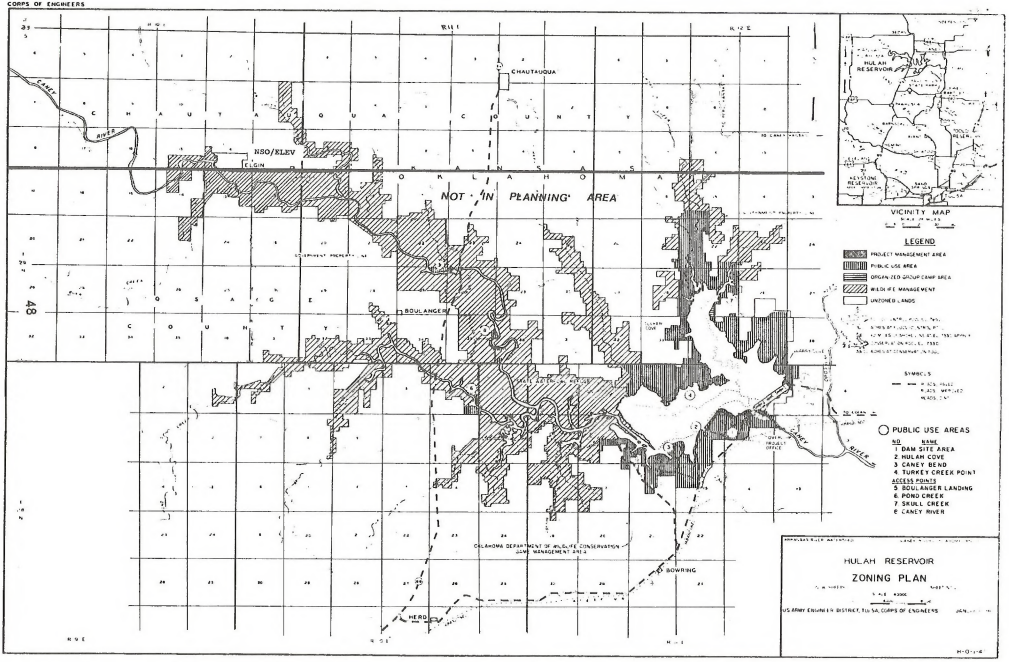

SEE INSERT
INSERT
DURHAM
DURHAM COVE
COTTONWOOD POINT
NSO/ELEV
MARION COVE
PROJECT OFFICE
FRENCH CREEK COVE
HILLSBORO COVE
SPILLWAY AREA
CANADA
ROAD CLOSED
HILLSBORO
ATCHISON, TOPEKA AND SANTA FE RAILWAY
R 2 E
R 3 E
T 18 S
T 19 S
VICINITY MAP
MARION RESERVOIR
HILLSBORO
MARION
WICHITA
LEGEND
DIRT ROADS
GRAVEL ROADS
PAVED ROADS
PROJECT OPERATIONS
NSO/RO
OPERATIONS-RECREATION, INTENSIVE USE
PSO/DO
OPERATIONS-RECREATION, LOW DENSITY USE
SOO/DO
KANSAS FISH AND GAME COMMISSION, GAME MANAGEMENT AREA
NSO/ELEV
DESIGNATIONS
LIMITS OF CLEARING
SHORELINE MILES AT ELEV. 1365.0
STREAM CHANNEL
BOAT RAMP
PERTINENT DATA
TOP FLOOD CONTROL POOL EL. 1394.0
OF FREEBOARD EL. 1394.0
TOP OF CONSERVATION POOL EL. 1365.0
50-YR FREEBOARD (EXPECTED) EL. 1366.0
BOTTOM OF CONSERVATION POOL EL. 1322.0
MARION DAM AND RESERVOIR
COTTONWOOD RIVER, KANSAS
PUBLIC USE - LAND UTILIZATION
SCALE IN FEET
U.S. ARMY ENGINEER DISTRICT, TULSA, CORPS OF ENGINEERS
JUNE 19
CB790-DM3B-93/3
REVISED DEC., 1980

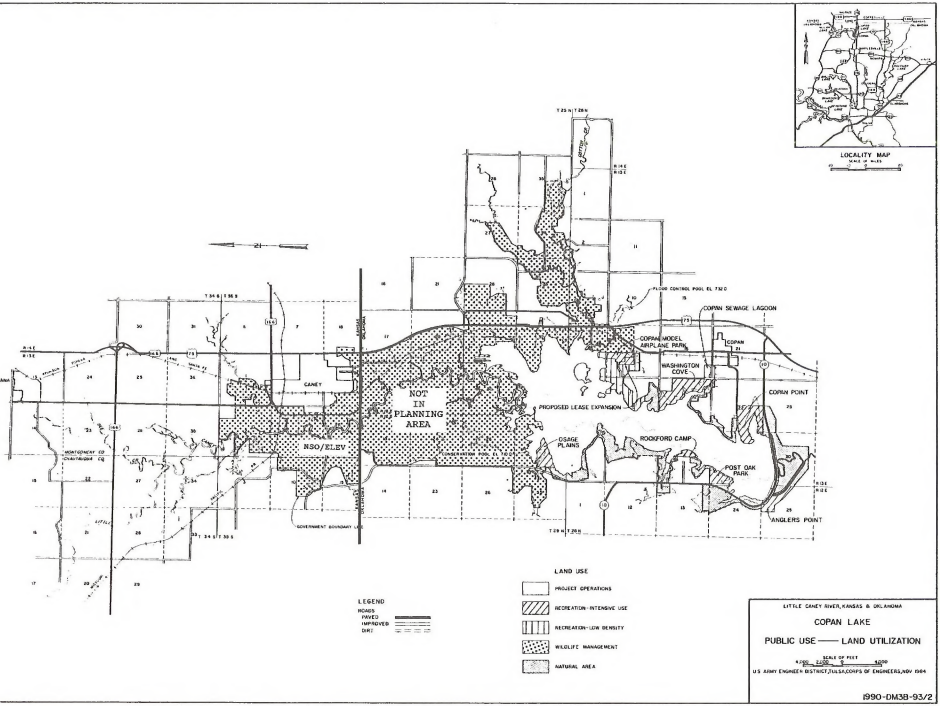

DENNIS
TIMBER HILL
MOUND VALLEY
20 PROPOSED PRIMITIVE CAMPSITES
NSO/ELEV
DOWNSTREAM POINT
CHERRYVALE
VICINITY MAP
LAND USE
PROJECT OPERATIONS---------- NSO/ND
OPERATIONS-RECREATION, INTENSIVE USE---------- NSO/DD
OPERATIONS-RECREATION, LOW DENSITY USE---------- NSO/DD
OPERATIONS-FISH & WILDLIFE MANAGEMENT---------- NSO/ELEV
LEGEND
ROADS PAVED
ROADS IMPROVED
RESERVOIR DATA
TOP OF CONSERVATION POOL EL 858.0
TOP OF FLOOD CONTROL POOL EL 887.5
20 SHORELINE MILES AT EL 858.0
PEARSON-SKUBITZ BIG HILL LAKE
BIG HILL CREEK, KANSAS
PUBLIC USE-LAND UTILIZATION
SCALE OF FEET
2000 0 1000 2000
U.S. ARMY ENGINEER DISTRICT, TULSA, CORPS OF ENGINEERS APR 1986
CB390-DM3B-93/2


MANNS COVE
WOODSON COVE
NSO/ELEV
TORONTO POINT
SPILLWAY EAST & WEST
HOLIDAY HILL
TORONTO
WALNUT CREEK RAMP
QUINCY
ZONING DISTRICTS
PROJECT OPERATIONS---------- NSO/ND
OPERATIONS-RECREATION, INTENSIVE USE---------- NSO/DD
OPERATIONS-RECREATION, LOW DENSITY USE---------- NSO/DD
OPERATIONS-WILDLIFE MANGEMENT-CORPS---------- NSO/ELEV
OPERATIONS-WILDLIFE MANGEMENT-STATE---------- NSO/ELEV
LEGEND
ROADS PAVED
ROADS GRAVEL
UNCLEARED AREAS
ACCESS POINT
CONCESSION
CONSERVATION POOL EL 909.5
FLOOD CONTROL POOL EL 931.0
2,350 ACRES AT CONSERVATION POOL
10,000 ACRES AT FLOOD CONTROL POOL
APPROX. MILES OF SHORELINE AT EL 909.5
ARKANSAS RIVER WATERSHED
VERDIGRIS RIVER, KANSAS
TORONTO LAKE
ZONING
SCALE OF FEET
1000 2000 4000
U.S. ARMY ENGINEER DISTRICT, TULSA, CORPS OF ENGINEERS.
OCT. 1978
CB 130-11-2-93/15


KANSAS
OKLAHOMA
NOT IN PLANNING AREA
ARKANSAS CITY
SILVERDALE
NEO/ELEV
MAPLE CITY
CHILOCCO INDIAN AGRICULTURAL SCHOOL
HARDY
TRADERS BEND
BEAVER CREEK COVE
WASHUNGA BAY
WEBB CITY
COON CREEK COVE
SANDY CREEK COVE
PIONEER
PONCA COVE
BURBANK LANDING
OSAGE COVE
PONCA CITY
McFADDEN COVE
FISHERMAN'S BEND
SANDY PARK
PROJECT OPERATION
RECREATION - INTENSIVE USE
RECREATION - LOW DENSITY
WILDLIFE MANAGEMENT (KANSAS & OKLAHOMA)
LEGEND
TOP CONSERVATION POOL EL. 1010.0
TOP FLOOD CONTROL POOL EL. 1044.0
SHORELINE MILES AT EL. 1010.0
PROPOSED PUBLIC USE AREAS
GOVERNMENT PROPERTY LINE
PAVED ROAD
GRAVEL ROAD
RELOCATED ROAD
CONCESSION SITE
VICINITY MAP
SCALE OF MILES
KAW LAKE
LAND
MANAGEMENT
TYPES
DEPARTMENT OF THE ARMY
Tulsa District Corps of Engineers
Tulsa, Oklahoma

CORPS OF ENGINEERS




LOCALITY MAP
SCALE OF MILES
NOT IN PLANNING AREA
NSO/ELEV
CANEY
COPAN SEWAGE LAGOON
COPAN MODEL AIRPLANE PARK
WASHINGTON COVE
COPAN POINT
PROPOSED LEASE EXPANSION
ROCKFORD CAMP
POST OAK PARK
ANGLERS POINT
GRAGE PLAINS
FLOOD CONTROL POOL EL 732.0
GOVERNMENT BOUNDARY LINE
MONTGOMERY CO
CHAUTAUQUA CO
LEGEND
ROADS
PAVED
IMPROVED
DIRT
LAND USE
PROJECT OPERATIONS
RECREATION-INTENSIVE USE
RECREATION-LOW DENSITY
WILDLIFE MANAGEMENT
NATURAL AREA
LITTLE CANEY RIVER, KANSAS & OKLAHOMA
COPAN LAKE
PUBLIC USE —— LAND UTILIZATION
SCALE OF FEET
4200 2100 0 4200 8400
U.S. ARMY ENGINEER DISTRICT, TULSA, CORPS OF ENGINEERS, NOV 1984
1990-DM38-93/2

USA, COE

Kansas City District Projects

Oil and gas leasing stipulations for the Kansas City District COE projects are contained within the Districts Special Stipulations. A copy is contained in Appendix 2. These stipulations provide for the protection of surface resources through the use of surface occupancy restrictions, drilling restrictions or consultation requirements with authorized surface lessees (KDWP). Generally Kansas City District requires NSO or directional drilling within 2,000 feet under restricted areas. Restricted areas include the major structures such as the dam, spillways, embankments, etc. A NSO restriction applies to all areas below the lakes flood elevation level and to existing or proposed public use areas, recreation areas, wildlife and waterfowl refuges, unique ecological areas, historical sites, and hiking or horseback trails. The special stipulations are standardized and apply to all Kansas City District projects. Additionally, the Kansas City COE uses a wildlife habitat protection stipulation (Appendix 2) that essentially provides a Season of Use Restriction and a surface avoidance restriction on all identified wildlife lands.

Clinton Lake	
Project acres	22,000
Land allocations	
Operations	450
Recreation	12,550
Wildlife Mgt.	9,000

Description

Clinton Lake is located about 4 miles southwest of the city of Lawrence on the Wakarusa River near the rivers confluence with Rock Creek in Douglas County.

A total of approximately 4,325 acres within the project area have been dedicated to parks and recreation. Over 9,000 acres of project land licensed to the KDWP as a wildlife management area are open to the public for hunting. Game species such as mourning dove, quail, squirrel, rabbit, deer, raccoon, and opossum are plentiful around the lake. Waterfowl, such as Canada and snow geese, mallards, and teal, are numerous on the lake late in the year. A stocking program conducted by the KDWP has enhanced the populations of several fish species. Crappie, northern pike, walleye, largemouth and smallmouth bass, striped bass, bluegill, and channel catfish are abundant.

Archeological sites investigated in the Clinton Lake area indicate that prehistoric Indian activity in the region began as early as 8000 BC with transient hunting groups. Later (0-1000 AD) residents lived in seasonal hunting and gathering camps, adding to their food supply by gardening. More intensive farming was practiced by groups living in the Clinton Lake area from 1000 to 1500 AD. The Kansa Indians inhabited northeastern Kansas at the time of initial European contact by the French traders and remained in control of the area until 1824 when they sold portions of the land to the U.S. Government. From 1824 to 1854, the Wakarusa River basin was used as a reservation for Shawnee Indians relocated from Ohio and Missouri. The area was opened for settlement in 1854. The historic Oregon Trail passed through the unincorporated community of Kanwaka about one mile north of the project.

Lawrence, the largest city in the immediate vicinity of Clinton Lake, was founded in 1854 by abolitionists. Lawrence was a major factional headquarters in the slave-state versus free-state conflict which raged through eastern Kansas for 5 years.

SMA Lease Stipulations
NSO/ND on about 800 acres of restricted operations facilities and a buffer of 2,000 feet. NSO/DD on approximately 17,125 acres of recreational areas and within the area below the water surface at flood level, elevation 908.4 feet.

The RMP alternative selected would result in:

ALTERNATIVE A. Clinton Lake project lands would be available for lease. Stipulations as described above would apply.

ALTERNATIVE B. No change from A.

ALTERNATIVE C. COE project lands would not be available for oil and gas lease.

Hillsdale Lake	
Project acres	13,103
Land allocations	
Operations	500
Recreation	6,860
Wildlife Mgt.	5,743

Description
Hillsdale Lake is located on Big Bull Creek, a tributary of the Marais des Cygnes (Osage) River, about 40 miles southwest of Kansas City. The lake is mostly within Miami County, a small portion of project lands lie within Johnson County.

In addition to providing water supply and flood protection, Hillsdale Lake is intended to improve downstream water quality, and provide recreation and fish and wildlife benefits. The three-year stage filling of the lake insured an excellent aquatic environment for fish growth. Much of the timber was left in the lake to provide fish habitat. Game fish include walleye, catfish, largemouth bass, crappie and bluegill.

SMA Lease Stipulations
NSO/ND on approximately 1,200 acres of operations area with a 2,000 foot buffer. NSO/DD on approximately 7,500 acres below the water surface at flood level, elevation 936 feet, and on approximately 2.921 acres of recreation or park lands.

The RMP alternative selected would result in:

ALTERNATIVE A. Hillsdale Lake project lands would be available for lease. Stipulations as described above would apply.

ALTERNATIVE B. No change from A.

ALTERNATIVE C. COE project lands would not be available for oil and gas lease.

Kanopolis Lake	
Project acres	21,166
Land allocation	
Operations	440
Recreation	6,725
Wildlife Mgt.	14,000

Description
Kanopolis Lake is located about 30 miles southwest of the city of Salina on the Smoky Hill River, in Ellsworth County.

The development of Kanopolis Lake as a pilot project for the Kansas park system became a reality on October 1958 when the Federal Government granted a 50-year lease to the Kansas State Park and Resources Authority (now KDWP), for use of a 780-acre tract along the east shore of the lake. Additions have brought the total acreage under lease to the KDWP to 1,585 acres.
The COE manages 280 acres of parks at Kanopolis.

The Indian Hill site at Kanopolis Lake is a bluff of Indian petroglyph cravings which is listed in the National Register of Historic Places. The drawings are carved in a Dakota sandstone formation. This site can be found at Inscription

Rock on the north shore of the lake in Horse Thief Canyon and is easily reached by boat. The petroglyphs are not presently in danger of flooding; however, if irrigation water is stored in the lake, there may be erosion problems at the base of the bluff.

Land management practices such as prescribed burning, tree planting, establishing food plots and timber stand improvement are performed to protect and maintain wildlife habitat. One of COE's most important wildlife management tools is the agricultural leasing program. Tracts of public land are leased to farmers who incorporate specific wildlife management practices in their farming. Public access is available to all these lands, but vehicles are restricted to existing roads.

Wildlife management acreage is located at the upper end of the project along the Smoky Hill River. Pheasant, quail, prairie chicken, rabbit, whitetail and mule deer are the most abundant game. Many species of duck and geese frequent the lake during the fall and spring migrations. Coyotes, fox, squirrels, mink, muskrat, beaver, raccoon, and opossum are also common.

SMA Lease Stipulations

NSO/ND on approximately 1,396 acres associated with the dam, spillway and other structures and a 2,000 foot buffer. NSO/DD on approximately 13,958 acres below the water surface level at elevation 1,508 feet, as well as on the approximately 3,400 acres of park and recreation lands.

The RMP alternative selected would result in:

ALTERNATIVE A. Kanopolis Lake project lands would be available for lease. Stipulations as described above would apply.

ALTERNATIVE B. No change from A.

ALTERNATIVE C. COE project lands would not be available for oil and gas lease.

Melvern Lake	
Project acres	24,000
Land allocations	
Operations	325
Recreation	13,675
Waterfowl Refuge	1,300
Wildlife Mgt. (KDWP)	8,700

Description

Melvern Lake is on the upper Marais des Cygnes River. The major portion of the lake is within Osage County, and the dam is 4 miles west of the community of Melvern. The entire Melvern Lake area lies on the eastern edge of the Bluestem (Flint Hills) region of Kansas. This region is characterized by gently rolling hills covered with tall native grasses. Native woodlands occur in the bottomlands along tributaries of the Marais des Cygnes.

In addition to flood control, the lake provides multipurpose storage to supplement flows downstream for water supply and water quality control.

Five of the projects six intensively developed recreation areas are operated by the COE and one is operated by KDWP.

Wildlife is abundant throughout the project area. The lake and surrounding lands provide food and shelter for thousands of geese and ducks during fall and spring migrations. Other wildlife species include prairie chicken, bobwhites, mourning doves, cottontails, whitetail deer, squirrels, and many non-game species.

Almost 10,000 acres of land in the upper reaches of the lake are licensed to the KDWP for wildlife management. A portion of this area is designated a wildlife refuge and is closed to hunting during

certain times of the year.

For centuries, the Marais des Cygnes River Valley has attracted numerous species of fur-bearing animals and waterfowl. The river valley was a popular hunting and fishing ground for many Indian tribes, including the Kansa, Osage, Sac and Fox. When early French trappers found the river teeming with waterfowl, they appropriately named it Marais des Cygnes, meaning "Marsh of the Swans."

During America's westward expansion, the Santa Fe Trail ran just north of the project. Undoubtedly, the wildlife of the Marais des Cygnes valley provided valuable food for the wagon trains.

Coal mining became an important influence on the local economy in the 1800's. The mining industry peaked about 1892 with the main consumer being the Santa Fe Railroad. When more economical coal supplies were found near Pittsburg, Kansas, mining in the Melvern area steadily declined until its demise around the turn of the century.

SMA Lease Stipulations
NSO/ND on approximately 950 acres associated with the dam, spillway and other administrative or operational structures and a 2,000 foot buffer. NSO/DD on approximately 13,950 acres below elevation 1,057 feet, as well as on the approximately 5,620 acres of parks and recreation lands and approximately 1,300 acres of the waterfowl refuge.

The RMP alternative selected would result in:

ALTERNATIVE A. Melvern Lake project lands would be available for lease. Stipulations as described above would apply.

ALTERNATIVE B. No change from A.

ALTERNATIVE C. COE project lands would not be available for oil and gas lease.

Milford Lake	
Project acres	44,229
Land allocations	
Operations	230
Recreation (land & water)	25,477
Waterfowl Refuge (KDWP)	1,073
Wildlife Mgt. (KDWP)	17,120
Natural Areas	92
Reserve Forest Land	237

Description
Milford Lake is located on the Republican River about 10 miles above the confluence of the Republican and Smoky Hill Rivers which form the Kansas River, near Junction City. The lake is mainly in Geary and Clay Counties with small arms extending into Dickinson and Riley Counties.

Milford Lake helps control water in the main stem of the Kansas River. Control runoff from the lower section of the Republican River Valley is required for protection of urban centers and agricultural lands along the Kansas and lower Missouri Rivers. The effect of upstream lakes was considered in determining the height of levees for local flood protection projects on the Kansas and Marais des Cygnes Rivers. The storage space in Milford Lake returns economic benefits in flood control, water supply, and recreation, including fish and wildlife recreation. The storage for water supply in under contract to the State of Kansas. Under the terms of the contract, the State will repay the cost of the storage and a share of the project operation and maintenance costs. A small portion of this storage is being used for water supply. The remainder may be used to supplement low stream flow until it is needed for water supply.

Milford Lake provides recreation opportunities for approximately one and

one half million visitors yearly. The nine recreational facilities or parks are operated by both COE and KDWP.

The KDWP is responsible for management and control of three important recreation activities: hunting, fishing, and boating. Over 16,700 acres of project lands are licensed to KDWP as a game management area and waterfowl refuge.

SMA Lease Stipulations

NSO/ND on approximately 1,190 acres associated with the dam, spillway and other operational structures and a 2,000 foot buffer. NSO/DD on approximately 33,000 acres below elevation 1,176 feet, as well as approximately 6,500 acres of recreation, park and waterfowl refuge lands also designated NSO/DD most of which overlap with the former.

The RMP alternative selected would result in:

ALTERNATIVE A. Milford Lake project lands would be available for lease. Stipulations as described above would apply.

ALTERNATIVE B. No change from A.

ALTERNATIVE C. COE project lands would not be available for oil and gas lease.

Perry Lake	
Project acres	42,000
Lands allocations	
Operations	400
Recreation (Land & Water)	30,600
Wildlife Mgt.(KDWP)	11,000

Description

Perry Lake is located on the Delaware River three miles northwest of the town of Perry in Jefferson County. Perry provides recreational opportunities close to population centers in Kansas and Missouri. Ten developed recreation areas are located on the lake and are operated by both COE and KDWP. The two parks operated by KDWP are a part of the States park system. The 14-mile long Perry lake trail located on the east shore is an official portion of the National Trails System and is maintained by COE.

The KDWP operates an 11,000 acre wildlife management area in the upper reaches of the lake on both sides of the Delaware River.

With environmental objectives in mind, the COE manages a forestation and vegetation program at Perry Lake. The program has resulted in the successful establishment, improvement and maintenance of a system to enhance public recreation and multiple use benefits. Trees were left standing in lake waters formed by the Delaware River and the Slough Creek, Rock Creek and Evans Creek arms of the lake to provide a natural habitat for fish.

Environmental education classes from two local school districts utilize approximately 190 acres and a portion of the Slough Creek area has been designated as a National Environmental Study Area (NESA). The NESA program is an interagency cooperative effort between Federal agencies to provide areas and materials to local schools and special interest groups for environmental education purposes.

SMA Lease Stipulations
NSO/ND on about 1,300 acres associated with operational restrictions. NSO/DD on approximately 25,000 acres below elevation 922 feet, as well as on approximately 7,000 acres of recreation and park lands.

The RMP alternative selected would result in:

ALTERNATIVE A. Perry Lake project lands would be available for lease. Stipulations as described above would apply.

ALTERNATIVE B. No change from A.

ALTERNATIVE C. COE project lands would not be available for oil and gas lease.

Pomona Lake	
Project acres	10,501
Land allocations	
Operations	370
Recreation	6,200
Wildlife Mgt,	3,931

Description
Pomona Lake is located in east-central Osage County about seven miles northwest of the town of Pomona. The lake is formed by the dam on 110-Mile Creek below its junction with Dragoon Creek and above its confluence with the Marais des Cygnes River.

The primary purpose of the lake is for flood control and the storage of water in times of flood emergencies. In addition to flood control, the lake provides storage for flow supplementation, downstream water supply, quality control, recreational opportunities, and wildlife habitat. Nine recreation areas are located on the lake, one of which is a state park operated by the KDWP.

SMA Lease Stipulations
NSO/ND on approximately 800 acres associated with operational structures and the required 2,000 foot buffer. NSO/DD on approximately 8,600 acres below elevation 1,003 feet, as well as on the approximately 1,460 acres of recreation and park lands.

The RMP alternative selected would result in:

ALTERNATIVE A. Pomona Lake project lands would be available for lease. Stipulations as described above would apply.

ALTERNATIVE B. No change from A.

ALTERNATIVE C. COE project lands would not be available for oil and gas lease.

Tuttle Creek Lake	
Project acres	33,634
Land allocations	
Operations	640
Recreation	20,394
Natural Area	600
Wildlife Mgt.	12,000

Description
Tuttle Creek Lake is located on the Big Blue River six miles north of the city of Manhattan in Riley, Pottawatomie and Marshall Counties.

The lake was constructed as a flood control project but also provides streamflow augmentation for the Kansas, Missouri, and Mississippi rivers during periods of drought as well as recreational and wildlife habitat benefits. The lake offers a large expanse of inland water with an irregular wooded shoreline as an outdoor recreational attraction. Nine areas around the lake have been developed as recreation areas or parks and are managed by COE or the KDWP. A 12,000 acre wildlife management area is administered by the KDWP on the upper

end of the lake.

SMA Lease Stipulations
NSO/ND on approximately 900 acres associated with restricted operational areas and a 2,000 foot buffer. NSO/DD on about 33,000 acres or all project lands below elevation 1,140 feet, as well as on approximately 4,700 acres of recreation and park lands.

The RMP alternative selected would result in:

ALTERNATIVE A. Tuttle Creek Lake project lands would be available for lease. Stipulations as described above would apply.

ALTERNATIVE B. No change from A.

ALTERNATIVE C. COE project lands would not be available for oil and gas lease.

Wilson Lake	
Project acres	21,796
Land allocations	
Operations	475
Recreation (Land & Water)	12,229
Wildlife Mgt	9,091

Description
Wilson Lake is located on the Saline River 10 miles north of the town of Wilson in Russell County.

The lake, built as a flood control project, also provides significant downstream benefits as well as providing recreational opportunities.

The proximity of the lake to I-70, and the lack of other bodies of water in this arid region of the state, contribute to extensive recreational use. There are five developed recreation areas or parks within the project; two of which, Wilson and Otoe, are managed as Kansas State Parks by KDWP. The KDWP also manages approximately 6,990 acres of project lands as a wildlife management area in the upper end of the lake. Some project lands are leased to area farmers and ranchers for agricultural purposes.

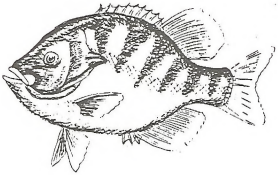
SMA Lease Stipulations
NSO/ND on approximately 700 acres associated with the dam, spillway and other operational structures and a 2,000 foot buffer. NSO/DD on approximately 12,000 acres below elevation 1,554 feet as well as on the 4,200 acres of recreation and park lands.

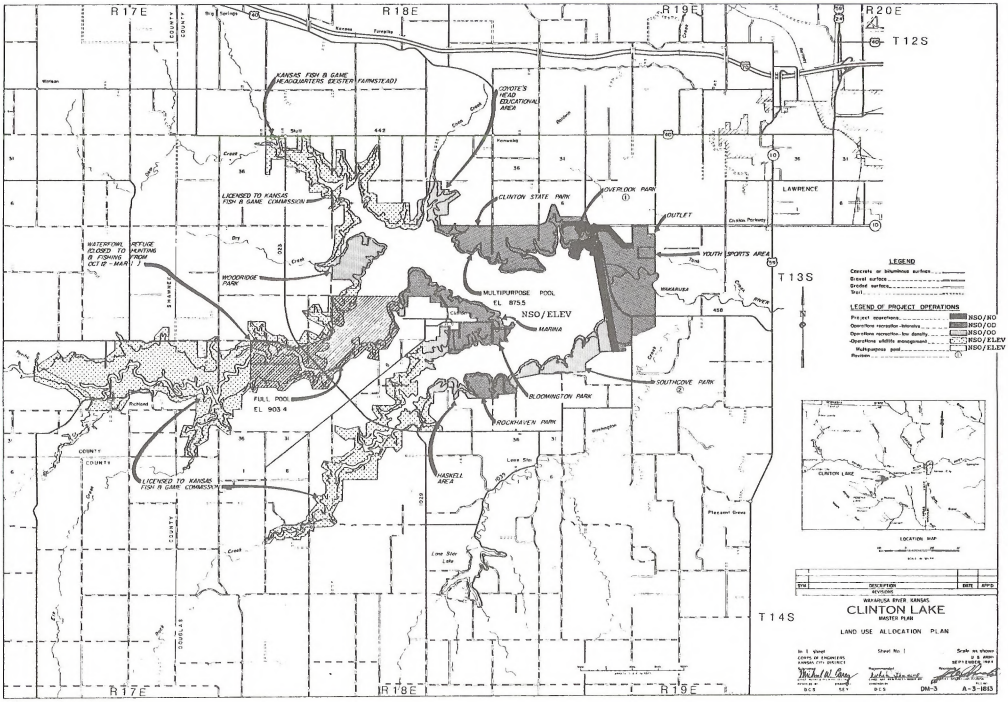
The RMP alternative selected would result in:

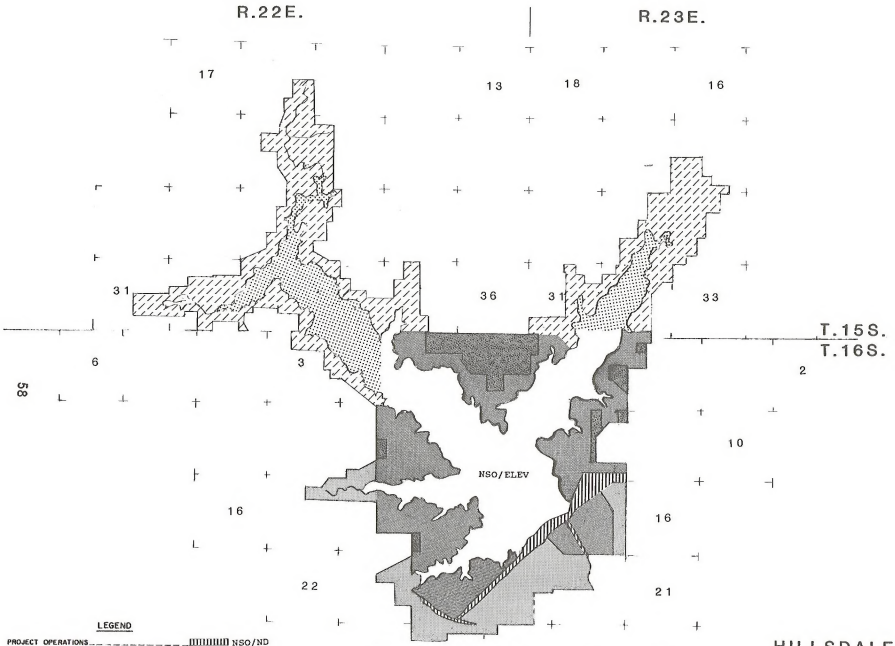
ALTERNATIVE A. Wilson Lake project lands would be available for lease. Stipulations as described for each project would apply.

ALTERNATIVE B. No change from A.

ALTERNATIVE C. COE project lands would not be available for oil and gas lease.

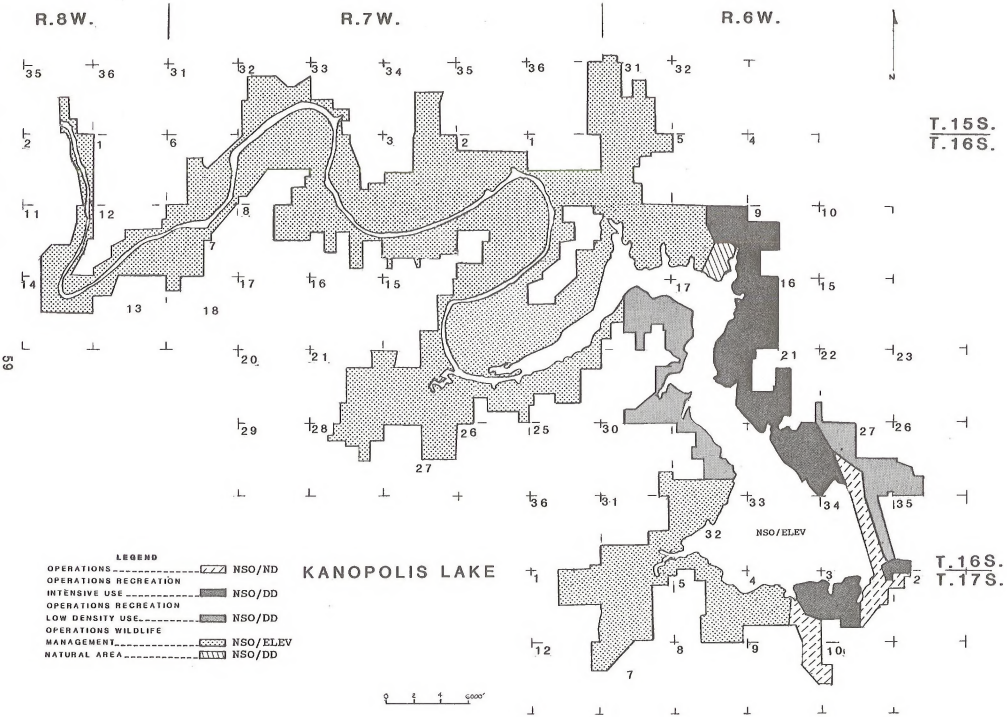


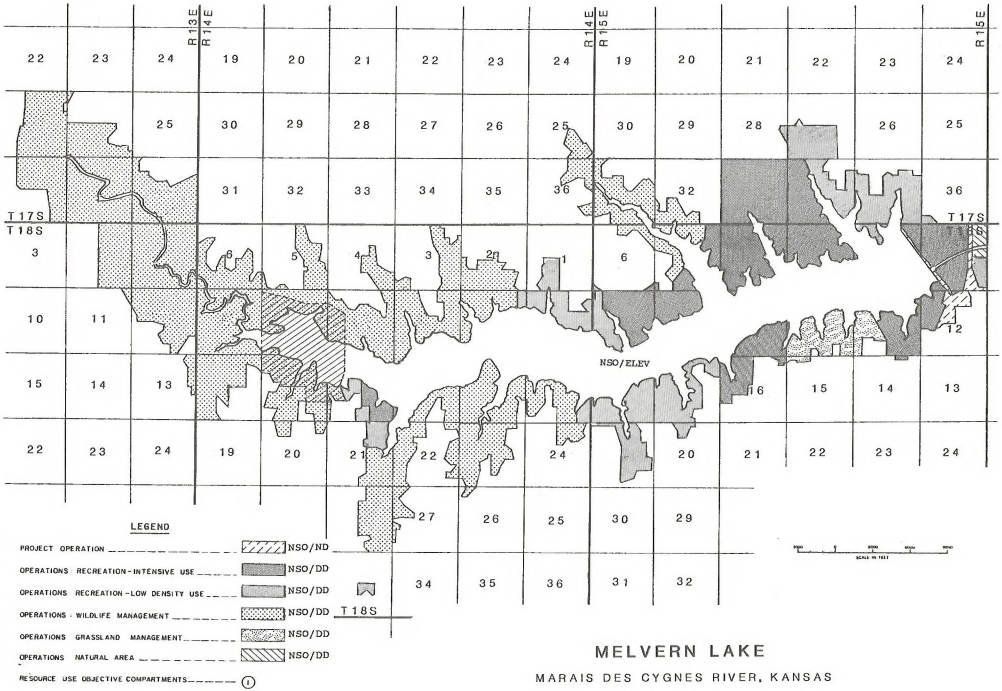

R17E
R18E
R19E
R20E
T12S
T13S
T14S
KANSAS FISH & GAME HEADQUARTERS (EDSTER FAIRMSTEAD)
COYOTE'S HEAD EDUCATIONAL AREA
LICENSED TO KANSAS FISH & GAME COMMISSION
CLINTON STATE PARK
OVERLOOK PARK
OUTLET
LAWRENCE
WATERFOWL REFUGE CLOSED TO HUNTING & FISHING FROM OCT 2 - MAR 1
WOODRIDGE PARK
YOUTH SPORTS AREA
MULTIPURPOSE POOL
EL 875.5
NSO/ELEV
MARINA
SOUTHCOVE PARK
BLOOMINGTON PARK
BROOKHAVEN PARK
FULL POOL
EL 903.4
LICENSED TO KANSAS FISH & GAME COMMISSION
WAKARUSA
WASHINGTON
Lone Star
Lone Star Lake
Pleasant Grove
LEGEND
Concrete or bituminous surface
Gravel surface
Graded surface
Trail
LEGEND OF PROJECT OPERATIONS
Project operations NSO/RO
Operations recreation-intensive NSO/OD
Operations recreation-low density NSO/OD
Operations wildlife management NSO/ELEV
Multipurpose pool NSO/ELEV
Reviews
LOCATION MAP
CLINTON LAKE
SYM DESCRIPTION DATE APPD
REVISIONS
WAKARUSA RIVER, KANSAS
CLINTON LAKE
MASTER PLAN
LAND USE ALLOCATION PLAN
In 1 Sheet
Sheet No. 1
Scale as shown
U S ARMY
MISSOURI RIVER DIVISION
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI
DRAWN DCS
TRACED KEY
DESIGNED DCS
DM-3
A-3-1813



HILLSDALE LAKE

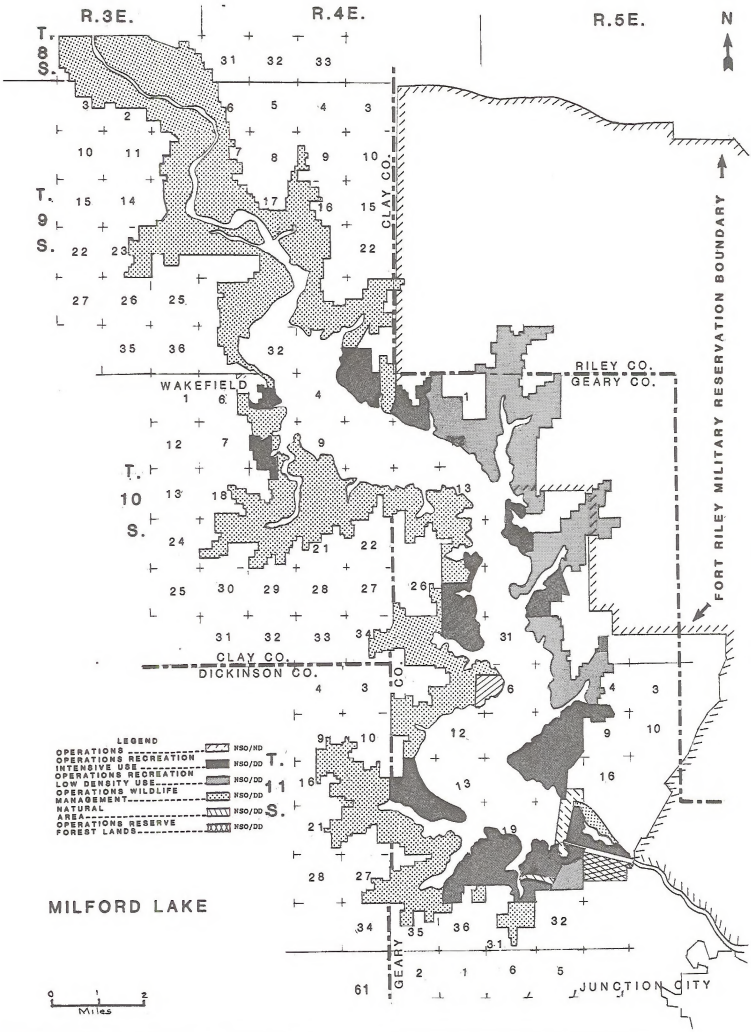
BIG BULL CREEK, KANSAS

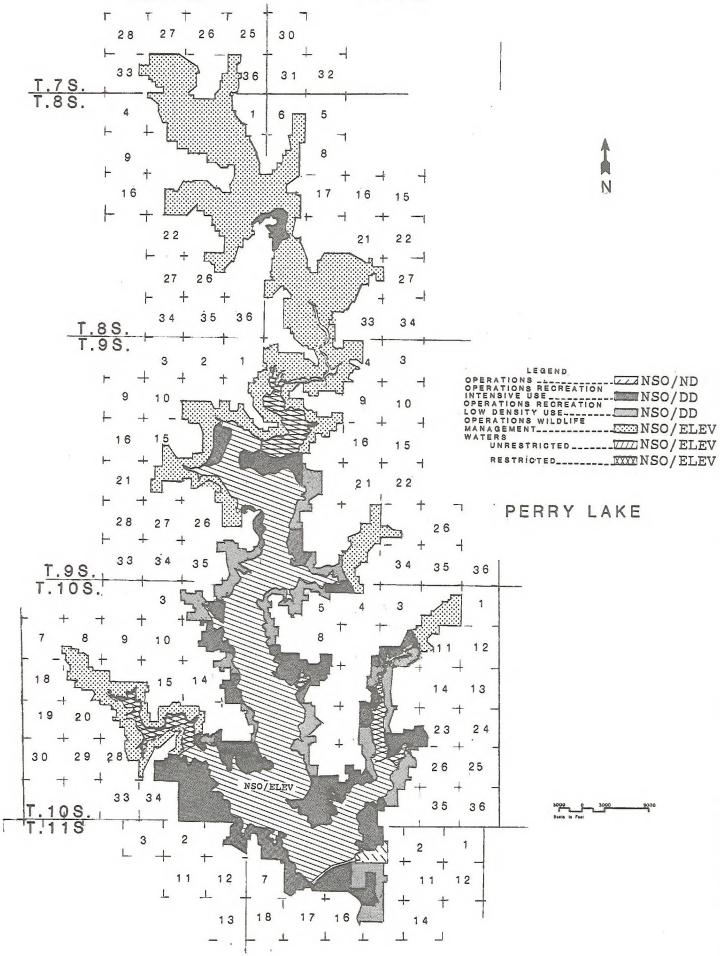

R.8W.
R.7W.
R.6W.
N
T.15S.
T.16S.
T.16S.
T.17S.
KANOPOLIS LAKE
NSO/ELEV
LEGEND
OPERATIONS ---------- NSO/ND
OPERATIONS RECREATION
INTENSIVE USE ---------- NSO/DD
OPERATIONS RECREATION
LOW DENSITY USE ---------- NSO/DD
OPERATIONS WILDLIFE
MANAGEMENT ---------- NSO/ELEV
NATURAL AREA ---------- NSO/DD
0 2 4 6000'

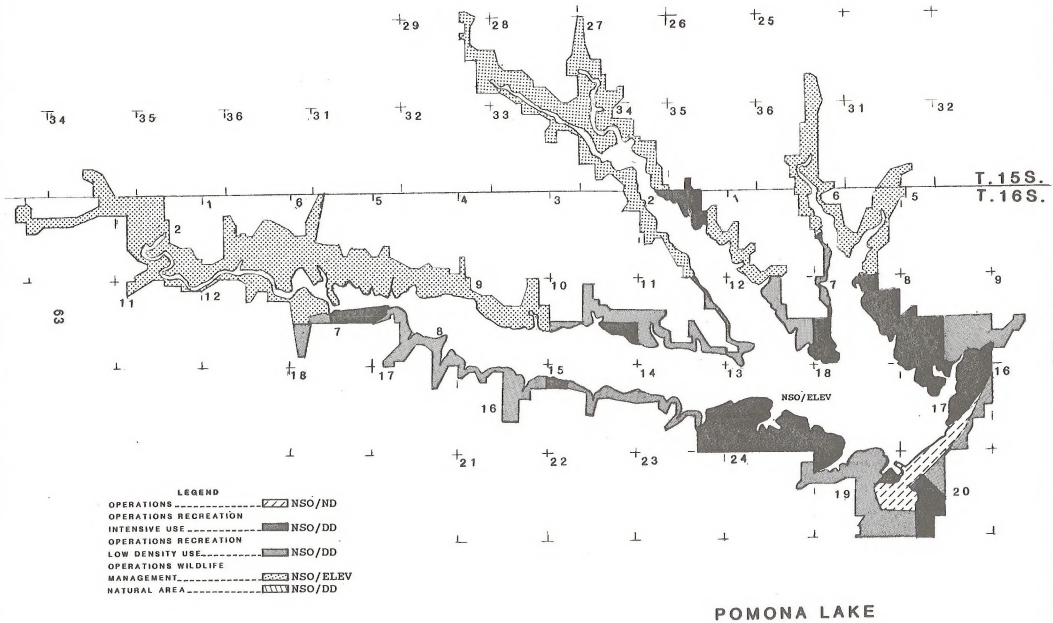


MELVERN LAKE

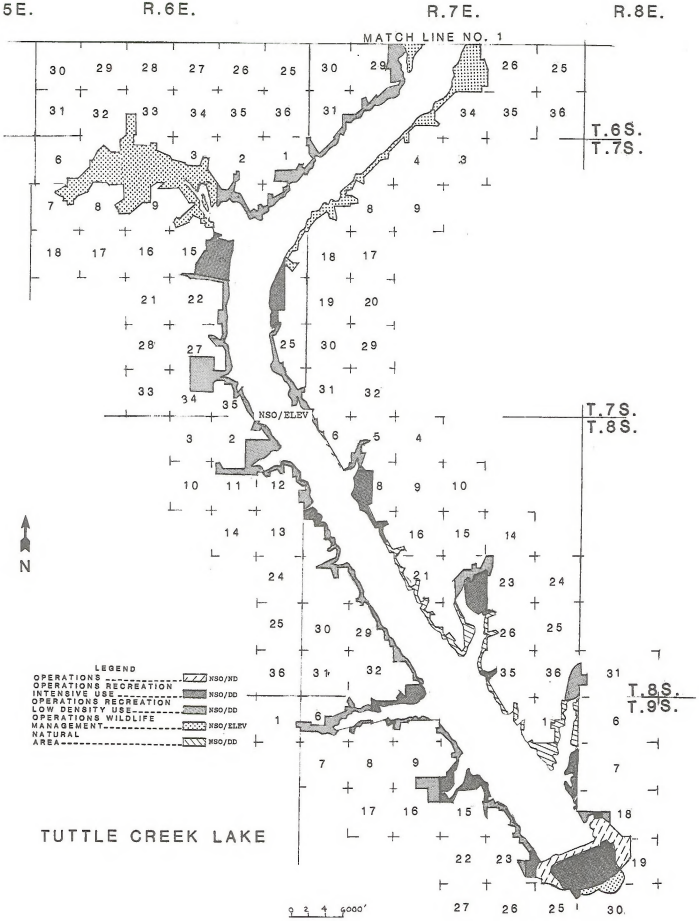
MARAIS DES CYGNES RIVER, KANSAS

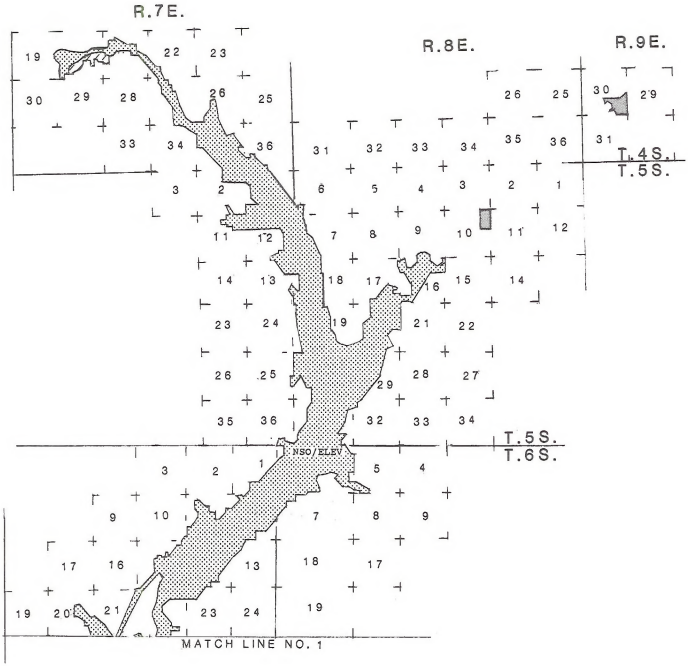

R.3E.
R.4E.
R.5E.
N
T. 8 S.
T. 9 S.
T. 10 S.
T. 11 S.
CLAY CO.
RILEY CO.
GEARY CO.
WAKEFIELD
FORT RILEY MILITARY RESERVATION BOUNDARY
CLAY CO.
DICKINSON CO.
GEARY CO.
JUNCTION CITY
MILFORD LAKE
LEGEND
OPERATIONS RECREATION INTENSIVE USE NSO/DD
OPERATIONS RECREATION LOW DENSITY USE NSO/DD
OPERATIONS WILDLIFE MANAGEMENT NSO/DD
NATURAL AREA NSO/DD
OPERATIONS RESERVE FOREST LANDS NSO/DD
0 1 2
Miles


.R.17E.
R.18E.
T.7S.
T.8S.
T.8S.
T.9S.
T.9S.
T.10S.
T.10S.
T.11S
N
LEGEND
OPERATIONS RECREATION INTENSIVE USE NSO/ND
OPERATIONS RECREATION LOW DENSITY USE NSO/DD
OPERATIONS WILDLIFE MANAGEMENT NSO/DD
WATERS UNRESTRICTED NSO/ELEV
RESTRICTED NSO/ELEV
PERRY LAKE
NSO/ELEV
3000 0 3000 6000
Scale in Feet


R.15E.
R.16E.
R.17E.
T.15S.
T.16S.
NSO/ELEV
LEGEND
OPERATIONS NSO/ND
OPERATIONS RECREATION INTENSIVE USE NSO/DD
OPERATIONS RECREATION LOW DENSITY USE NSO/DD
OPERATIONS WILDLIFE MANAGEMENT NSO/ELEV
NATURAL AREA NSO/DD
0 1/4 1/2 1 1 1/2
N

POMONA LAKE


R.5E.
R.6E.
R.7E.
R.8E.
MATCH LINE NO. 1
T.6S.
T.7S.
T.7S.
T.8S.
T.8S.
T.9S.
NSO/ELEV
N
LEGEND
OPERATIONS RECREATION INTENSIVE USE NSO/ND
OPERATIONS RECREATION LOW DENSITY USE NSO/DD
OPERATIONS WILDLIFE MANAGEMENT NSO/ELEV
NATURAL AREA NSO/DD
TUTTLE CREEK LAKE
0 2 4 6000'

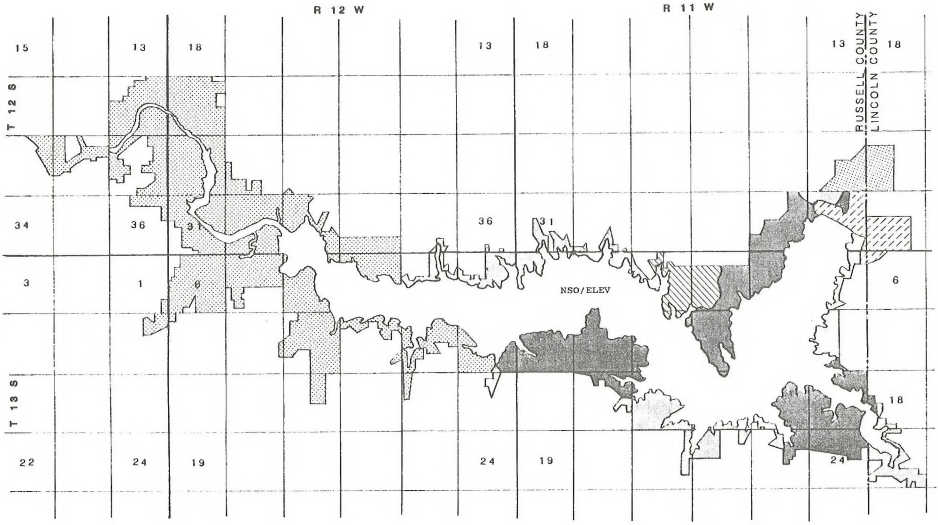


LEGEND

OPERATIONS ---------- NSO/ND
OPERATIONS WILDLIFE
MANAGEMENT---------- NSO/ELEV
OPERATIONS RECREATION
LOW DENSITY USE---------- NSO/DD

0 2 4 6000'

TUTTLE CREEK LAKE



WILSON LAKE

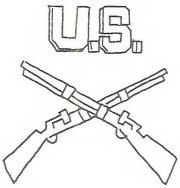
Saline River, Kansas

LEGEND

OPERATIONS	NSO/ND
OPERATIONS RECREATION INTENSIVE USE	NSO/DD
OPERATIONS RECREATION LOW DENSITY USE	NSO/DD
OPERATIONS WILDLIFE MANAGEMENT	NSO/ELEV
NATURAL AREA	NSO/DD

U.S. DEPARTMENT OF DEFENSE MILITARY LANDS

Department of Defense (DOD) lands acquired or withdrawn for military purposes are available for oil and gas leasing subject to DOD leasing stipulations and the particular uses of a specific base or facility. There are two active Army Military Reservations (Forts), two working Army Ammunition plants and two active Air Force facilities located within Kansas. Two of the military facilities, Fort Leavenworth and the Kansas Army Ammunition Plant are closed to oil and gas leasing.



Fort Riley Military Reservation
100,673 acres

Fort Riley, situated in northeast Kansas, encompasses nearly a third of Riley County. The military reservation of over 100,000 acres, includes both Public Domain and acquired lands lying between Milford Lake and Tuttle Creek Lake about three miles west of the city of Manhattan. The entire military reservation is used for military purposes and contains both developed and undeveloped areas. The Base Commander has evaluated Federal oil and gas leasing in relation to the mission of the Fort and has made land use determinations regarding oil and gas leasing.

SMA Lease Stipulations

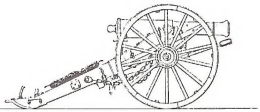
Closed to Leasing	30,700
No Surface Occupancy	68,173
Open W/STC	1,800

The RMP alternative selected would result in:

ALTERNATIVE A. Fort Riley Military Reservation lands identified as open for oil and gas leasing by the Base Commander would be available for lease. NSO would apply to 68,173 acres.
All 1,800 acres subject to STC within Fort Riley are in a floodplain or contain wetlands and/or riparian zones and as such the BLM would apply ORA-1 and ORA-2 stipulations to any leases.

ALTERNATIVE B. No change from A.

ALTERNATIVE C. Lands within Fort Riley would not be available for oil and gas lease.



Sunflower Army Ammunition Plant
10,000 acres

The Sunflower Army Ammunition plant is located in Johnson County, south of the town of Desoto. This 10,000 acre tract of acquired Federal minerals is intensively developed with numerous surface structures and both surface use and access is restricted. The plant is open for oil and gas leasing subject to standard DOD leasing stipulations and any other restrictions required by the Base Commander.

SMA Lease Stipulations
Standard DOD stipulations require NSO within 2,000 feet of structures and

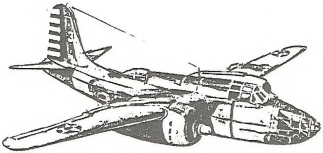
developments. This effectively places the entire 10,000 acres within this category. All oil and gas operations would be subject to approval of the Base Commander.

The RMP alternative selected would result in:

ALTERNATIVE A. Sunflower Army Ammunition Plant would be available for lease. Stipulations as described above would apply.

ALTERNATIVE B. No change from A.

ALTERNATIVE C. Lands within Sunflower would not be available for oil and gas lease.



McConnell Air Force Base
2,554 acres

McConnell AFB is located within Sedgwick County adjacent to the City of Wichita. This is an active base with facilities, structures and runways located over its entirety.

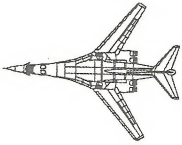
SMA Lease Stipulations
NSO with directional drilling possible with the approval of the Base Commander.

The RMP alternative selected would result in:

ALTERNATIVE A. McConnell AFB lands would be available for lease. Stipulations as described above would apply.

ALTERNATIVE B. No change from A.

ALTERNATIVE C. Lands within McConnell AFB would not be available for oil and gas lease.



Smoky Hill ANG Range	
Range acres	33,873
Land allocations	
Target complex	11,326
Agricultural leases	842
Hay leases	811
Grazing leases	17,358
Kansas Army National Guard	3,536

Description
Smoky Hill Air National Gaurd (ANG) bombing Range is a 50 square mile facility located in central Kansas, 11 miles southwest of Salina. The range is an air to ground bombing and gunnery target range used by 29 air units from the continental United States.

Consisting of approximately 33,873 acres of tall grass prairie and woodlands, with over 120 ponds, reservoirs, and the associated riparian habitats, the range provides a home for numerus wildlife species.

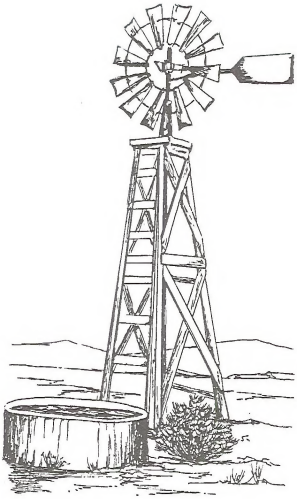
The range is managed to meet its military mission and for natural resources development, wildlife habitat protection and enhancement, livestock grazing, forestry, and recreation. As described in the Integrated Land Use Management Plan prepared for the facility in March of 1989, the goals and objectives of the Kansas Air National Guard (KSANG) are to manage the natural

resources of the Range with a multi-disciplinary approach to sound land use management.

Forest resources on the Smoky Hill Range encompass over 1,500 acres. Commercial species include; black walnut, bur oak, green ash, and cottonwood. Noncommercial trees include American and Siberian elm, willow, cedar, osage-orange, honey locust, black locust, mulberry, and box elder.

Wildlife species include both whitetail and mule deer, as well as every species common to central Kansas.

Recreation resources on the Range consist of hunting and fishing and are open to military personnel, dependents, guests, and retired military personnel on a permit basis.



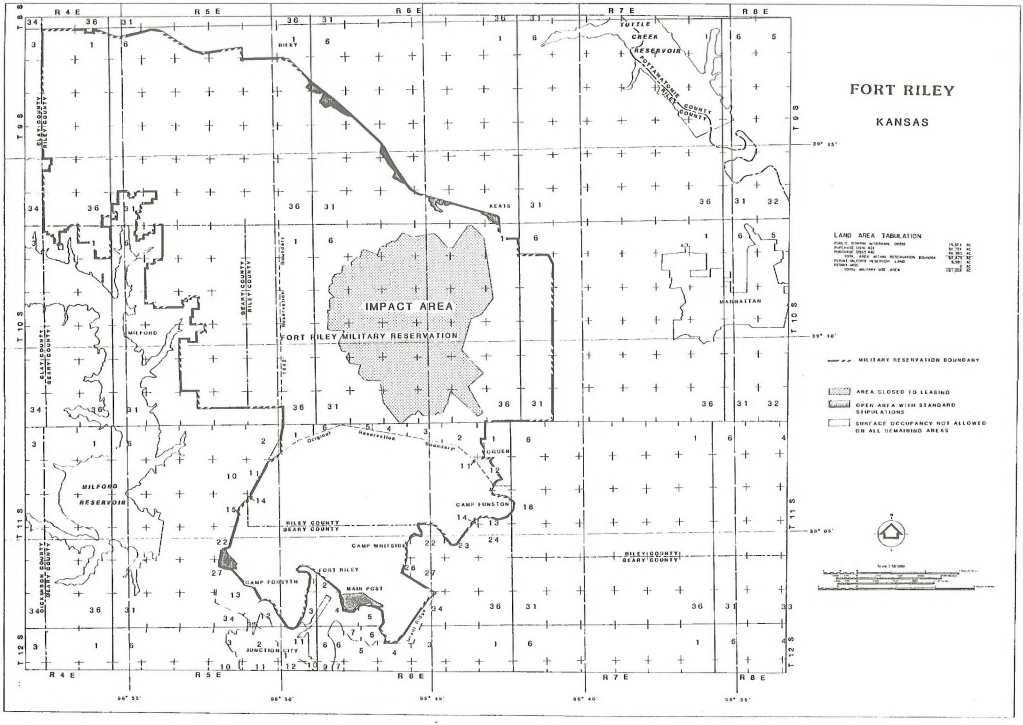
SMA Lease Stipulations
Standard DOD and USAF stipulations would apply. NSO on approximately 11,326 acres associated with the target area as well as an appropriate buffer surrounding facilities and structures would apply.

The RMP alternative selected would result in:

ALTERNATIVE A. Smoky Hill Weapons Range lands identified as open for oil and gas leasing by the Base commander would be available for lease. Stipulations as described would apply.

ALTERNATIVE B. No change from A.

ALTERNATIVE C. Lands within Smoky Hill Weapons Range would not be available for oil and gas lease.


FORT RILEY
KANSAS
IMPACT AREA
FORT RILEY MILITARY RESERVATION
TUTTLE CREEK RESERVOIR
MILFORD RESERVOIR
RILEY
KEATS
MANHATTAN
MILFORD
UGDEN
CAMP FUNSTON
CAMP WHITSIDE
CAMP FORSYTH
FORT RILEY
MAIN POST
JUNCTION CITY
RILEY COUNTY
GEARY COUNTY
CLAY COUNTY
DICKINSON COUNTY
WABAUNSEE COUNTY
POTTAWATOMIE COUNTY
LAND AREA TABULATION
MILITARY RESERVATION BOUNDARY
AREA CLOSED TO LEASING
OPEN AREA WITH STANDARD STIPULATIONS
SURFACE OCCUPANCY NOT ALLOWED ON ALL REMAINING AREAS
Scale 1:50,000
R 4 E
R 5 E
R 6 E
R 7 E
R 8 E
T 8 S
T 9 S
T 10 S
T 11 S
T 12 S
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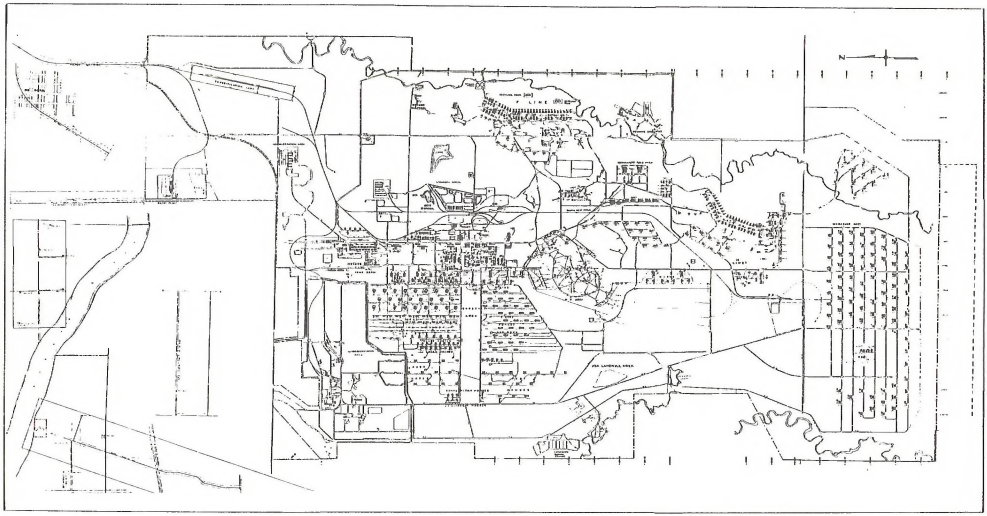
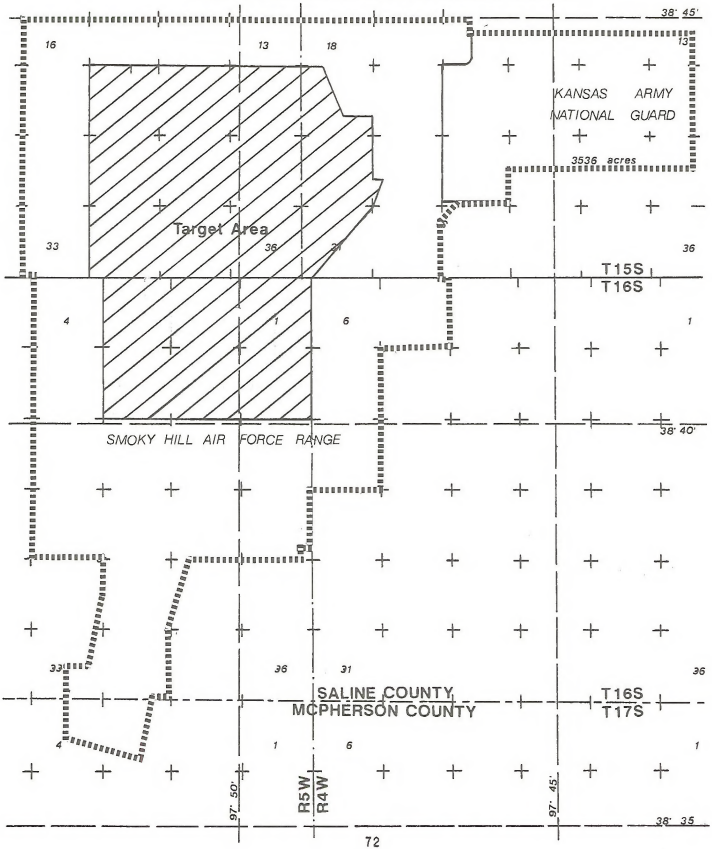
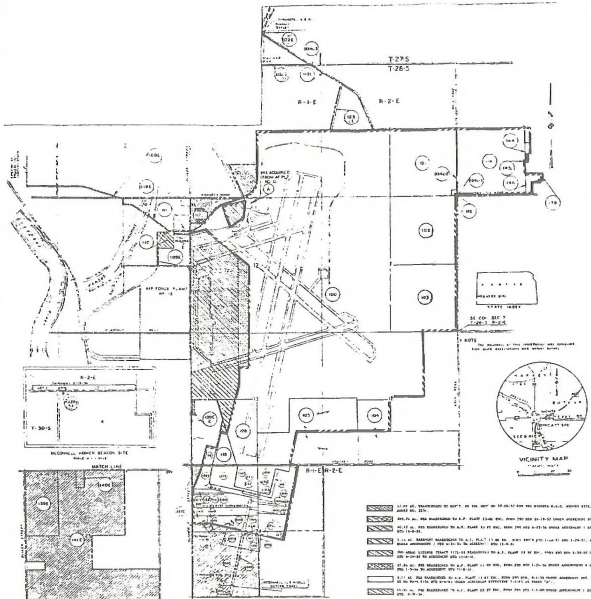
39° 50'
39° 45'
39° 40'
96° 35'
96° 30'
96° 25'
96° 20'
96° 15'


N
PLANT SITE PLAN
HERCULES
056

SMOKY HILL MILITARY RESERVATION

SALINE AND MCPHERSON COUNTIES, KANSAS





NOTE
THE BOUNDARY OF THIS INSTALLATION WAS COMPILED FROM DEED DESCRIPTIONS AND ACTUAL SURVEY.

ACQUISITION AUTHORIZATION

AF-D 5191 ---- DTD. 12 APR 1951
AF-D 5201 ---- DTD. 8 MAY 1951
AF-D 5240 ---- DTD. [illegible] 1951
AF-D 5560 ---- DTD. 5 JUN 1952
AF-D 5615 ---- DTD. 7 APR 1952
DELEGATED AUTHORITY ---- DTD. 17 MAY 1952
1ST IND. O.C.E. TO M.R.D. ---- DTD. 30 JUNE 1952
1ST IND. O.C.E. TO M.R.D. ---- DTD. 31 DEC 1953
AF-D 5902 ---- DTD. 2 NOV 1955
1ST IND. O.C.E. TO M.R.D. ---- DTD. 9 NOV 1956
AF-D 5907B ---- DTD. 4 NOV 1956
AF-D 5907C ---- DTD. 9 DEC 1956
AF-D 6062 ---- DTD. 21 DEC 1956
7TH IND. O.C.E. TO M.R.D. ---- DTD. 25 FEB 1958
4TH USAFIR TO M.R.D. ---- DTD. 22 JUNE 1955
14TH IND. O.C.E. TO M.R.D. ---- DTD. 19 OCT 1955
RE BASIC LETTER ---- DTD. 11 FEB 1955
AF-D 5663A ---- DTD. 2 MAY 1956
AF-D 6815 ---- DTD. 12 MAR 1957
AF-D 6848A ---- DTD. 3 APR 1958
AF-D 6845B ---- DTD. 11 SEP 1960

7TH IND. SAC TO O.C.E. ---- DTD. 4 OCT 1960
M.R.D. AF-D 120 ---- DTD. 19 AUG 1959
M.R.D. AF-D 120-A ---- DTD. 20 MAR 1960
M.R.D. AF-D 120-B ---- DTD. 15 DEC 1960
ACT OF CONGRESS APPROVED
25 JUNE 1948, 62 STAT. 350,
(10 USCA 1151) ---- DTD. 18 JUL 1962
M.R.D. AF-D 180C ---- DTD. 21 FEB 1961
WORKBOOK ---- DTD. 1 JUN 1963
2ND IND O.C.E. TO M.R.D. ---- DTD. 10 FEB 1953
LTR., HQ. TAC TO O.C.E. ---- DTD. 14 FEB 1966
M.R.D. AF-D 123 ---- DTD. 27 MAR 1968
AF-D 1991 ---- DTD. 18 MAR 1970
M.R.D. AF-D 150 ---- DTD. 16 MAY 1975
M.R.D. AF-D 150A ---- DTD. 28 OCT 1975
AF-D 8139 ---- DTD. 20 FEB 1977
LTR., HQ., SAC(DEPP) TO ECD ---- DTD 15 MAR 1979
LTR., HQ., SAC(DEPP) TO ECD ---- DTD 4 JAN 1980
LTR., HQ., SAC(DEPP) TO ECD ---- DTD 13 JAN 1981
AND AF-D 189 ---- DTD 16 JUN 1981

McCONNELL AFB BOUNDARY

▨ 17.77 AC. TRANSFERRED TO DEP'T. OF THE ARMY ON 10-16-52 FOR THE WICHITA O.A.C. ARMY SITE, INSTALLATION [illegible]
▨ 209.74 AC. FEE REASSIGNED TO A.F. PLANT 13 [illegible] ENG. FORM 290 DTD 11-19-57 UNDER AGREEMENT DTD 11-8-51.
▨ 30.72 AC. FEE REASSIGNED TO A.F. PLANT 13 BY ENG. FORM 290 DTD 6-15-56 UNDER AGREEMENT [illegible] DTD 11-8-51.
▨ 5.14 AC. EASEMENT REASSIGNED TO A.F. PLANT 13 BY ENG. FORM 290'S DTD 1-[illegible]-51 AND 1-29-51, [illegible] UNDER AGREEMENT [illegible] DTD 6-24-55 TO AGREEMENT DTD 11-8-51.
▨ [illegible] LICENSE (TRACT 112L-1) REASSIGNED TO A.F. PLANT 13 BY ENG. FORM 290 DTD 1-29-58 UNDER AGREEMENT [illegible] DTD 6-24-58 TO AGREEMENT DTD 11-8-51.
▨ 37.06 AC. FEE REASSIGNED TO A.F. PLANT 13 BY ENG. FORM 290 DTD 1-24-56 UNDER AGREEMENT [illegible] DTD 1-5-56 TO AGREEMENT DTD 11-8-51.
☐ 9.11 AC. FEE REASSIGNED TO A.F. PLANT 13 BY ENG. FORM 290 DTD. 9-1-58 UNDER AGREEMENT DTD. 8-31-58 [illegible] BY DD FORM 1354 DTD [illegible] UNDER AGREEMENT EFFECTIVE 1-4-[illegible] AS TRACT "A".
▨ 15.90 AC. FEE REASSIGNED TO A.F. PLANT 13 BY ENG. FORM 290 DTD 1-2-60 UNDER AGREEMENT [illegible] DTD. [illegible] TO AGREEMENT DTD. 8-31-58.
▨ 24.36 AC. FEE REASSIGNED TO A.F. PLANT 13 BY DD FORM 1354 DTD. 6-25-68, EFFECTIVE 3-28-[illegible], RETAINING THE RIGHT TO USE AND [illegible]
▨ 0.00 AC. [illegible] PORTION OF EASM'T (TRACT 113E) AND ONE NO AREA LICENSE (112L-2) CONVEYED TO THE CITY OF WICHITA BY QUITCLAIM DTD. [illegible], RESERVING SEWER RIGHTS.
▨ 1.08 AC. FEE, REPORTED EXCESS TO GSA [illegible] 5-6-74 WHO CONVEYED 1.08 ACRES TO RICHARD D. [illegible] DTD 7-30-[illegible].
▨ [illegible] (FORMERLY 37) 0.23 AC. TERM. 2-3-60; [illegible] (FORMERLY 36) 0.07 AC. TERM. [illegible]; [illegible] (FORMERLY 41) [illegible] TERM. [illegible]; [illegible] (FORMERLY 35) NO AREA TERM. [illegible] 0.01 AC. TERM [illegible]
▨ 0.29 OF AN ACRE, FEE (TRACT 146, PORTION), CONVEYED TO [illegible] BY QUITCLAIM DEED DTD [illegible]

FINAL

PROJECT MAP

DEPT. OF THE AIR FORCE
USING SERVICE STRATEGIC AIR COMMAND

LOCATION OF PROJECT

STATE KANSAS
COUNTY SEDGWICK
DIVISION MISSOURI RIVER
DISTRICT KANSAS CITY
ARMY AREA FIFTH
1 MILE SOUTH OF WICHITA

TRANSPORTATION FACILITIES

RAILROADS AT & SF RR
STATE ROADS KAN 15
FEDERAL ROADS 54 INTERSTATE 35
AIR LINES BRANIFF, TWA, CONTINENTAL, FRONTIER

ACQUISITION

TOTAL ACRES ACQUIRED 1/ 3703.63
FEE 3019.05
PUBLIC DOMAIN WITHDRAWAL
USE PERMIT
USE PERMIT
TRANSFER FEE 9.71
LEASE 23.13
LESSER INTERESTS EASEMENT 661.45
6-LICENSE NO AREA
1 DOES NOT INCLUDE 9.71 AC FEE REACQUIRED

DISPOSAL

TOTAL ACRES DISPOSED OF 1/ 192.95
SOLD EASM'T (1) 0.20
LICENSE (1) NO AREA
PUBLIC DOMAIN WITHDRAWAL
USE PERMIT
USE PERMIT
TRANSFERRED FEE 17.46
LEASES TERMINATED (3) 1.10
LESSER INTERESTS TERM. 2-LIC. — NO AREA
EASM'T (1) 0.03
REASSIGNED FEE 377.44
EASM'T (4) 5.16
LICENSE (1) NO AREA
OTHER FEE TO GSA 1.08
FEE 0.29
1/ DOES NOT INCLUDE 9.71 AC FEE REACQUIRED

LEGEND

EXCEPT FOR THE SPECIAL SYMBOLS SHOWN BELOW MAP SYMBOLS ARE STANDARD IN ARMY MAP SERVICE TECHNICAL MANUAL NO. 33.

RESERVATION LINE
RESERVATION LINE (Actual Survey)
TRACT BOUNDARY LINE
TRACT NUMBER (100)
CONTOUR LINE
DISPOSAL ▨
CLEARANCE EASEMENTS

COORDINATION

STRATEGIC AIR COMMAND
CIVIL ENGINEERING
McCONNELL AFB — KANSAS

REAL ESTATE
McCONNELL AIR FORCE BASE
McCONNELL ILS OUTER MARKER ANNEX
McCONNELL ILS MIDDLE MARKER ANNEX
McCONNELL HOMER BEACON SITE

RECOMMENDED BASE CIVIL ENG
APPROVED
SCALE 1" = 1000'
DRAWING NUMBER
SHEET 1 OF 2

SPLIT-ESTATE TRACTS

Included within the Kansas RMP/EIS area are over 73,000 acres of split-estate minerals located on over 400 tracts within 66 counties (Morton and Stevens counties tracts are included in FS planning). A complete list of leased and unleased split-estate tracts included in this planning effort is contained in Appendix 1.

The majority (over 57,000 acres) of the split-estate tracts would be leased with STC under alternatives A or B. No surface resource values or special conditions exist on these tracts to warrant additional protective measures. The majority of these tracts occur in croplands, improved pasture lands and native grasslands. Typically, these are uplands with no surface water, riparian vegetation or other unique or special habitat features.

The split-estate tracts described below are those tracts which would require other than STC should oil and gas leasing occur. The protective measures identified for these tracts are described by alternative. The protective stipulations described for Alternative A, (no Action) are required under existing BLM policy. Stipulations or requirements identified for Alternative B, (preferred alternative), would apply as well as those identified for Alternative A. No additional stipulations could be applied under Alternative C, (No Leasing), in that stipulations can not be added to existing leases. A summary of split-estate stipulation application by alternative is presented on the following Table (2-4).

Table 2-4

ACRES OF STIPULATIONS AND LEASE NOTICES ON KANSAS SPLIT-ESTATE LANDS

		STIPULATIONS AND LEASE NOTICES						
		[ALTERNATIVE A]		[ALTERNATIVE B				]
COUNTY	TOTAL ACRES	STC	ORA-1 FLPLN	ORA-2 WET	ORA-3 TIME	ORA-4 NSO	LN-1 T/E	LN-2 BFF
Allen	476		476	476			476	
Atchison	80							
Barber	80			40		40	40	80
Bourbon	300	80	220	220			220	
Brown	160			80				
Cheyenne	11,217	8,330	760	2,887				11,217
Clark	377	279	40	98		40		377
Clay	557	398		159				557
Cloud	161							
Comanche	201	42	40	159		120	40	201
Cowley	1		1	1		1	1	
Decatur	800	640	160	160		40		800
Doniphan	4			4		4		
Douglas	532	532					256	
Edwards	51	11				40		51
Ellis	40			40				40
Finney	9,279	7,999		1,280	320		796	9,279
Franklin	190	190					120	
Geary	339	333	6			6		
Gove	960	800				160		960
Grant	800	800						800
Greeley	1,933	1,321	160	612				1,933
Hamilton	8,041	7,201	46	821		19	446	8,041
Haskell	2,551	1,751		800				2,551
Jackson	195	95		100				
Jefferson	359	125	74	234			74	
Jewell	63			63				63
Johnson	160	160		160				
Kearny	18,854	17,414		1,440		440		18,854
Kingman	16			16				16
Lane	1,160	560	80	600				1,160
Leavenworth	436	288	101	148			241	
Lane	240	240						
Linn	484	29	384	455			145	
Logan	865	705	40	160		65	145	865
Lyon	80	80						
Marshall	160	120	39	40				
Meade	1,513	850		663		79	480	1,513
Miami	160	160						
Mitchell	240	80		160				240
Morris	442		442	442				
Nemaha	195	195						
Ness	160	160						160
Norton	476	158		318				476
Osage	110		110	110				
Pawnee	11	11						11
Phillips	100			100				100
Rawlins	480	480						480
Republic	430	320	110					
Riley	157		157	157		78		
Saline	221			221				221
Scott	540	300	240	240			40	540
Seward	1,064	826	160	238		80	320	1,064
Shawnee	74	74						
Sherman	960	960						960
Smith	160			160				160
Stafford	41	41						41
Stanton	916	876		40				916
Trego	200	200						200
Wabaunsee	15	10	5	5			5	
Wallace	990	430		560			160	990
Washington	193	33		160				
Wichita	480	160		320				480
Wilson	80	80						
Woodson	317	317						
TOTALS	72,927	57,244	3,851	15,147	320	1,212	4,005	66,397

ALLEN COUNTY

T. 24 S., R. 17 E.,
Sec. 2, Lots 1, 2, S1/2NE1/4, SE1/4, 316acres
Sec. 11, NE1/4. 160 acres
Tract Total= 476 acres

This unleased tract of acquired Federal mineral estate is contained in two contiguous portions totaling 476 acres. Located approximately four miles northwest of the town of Iola on the Neosho River, this tract has been classified as both a floodplain and wetland and contains riparian habitat. The Neosho River has been designated critical habitat by the KDWP. The Neosho River provides habitat for the Neosho madtom which is listed as threatened by the State of Kansas and is a category 1 candidate species being reviewed by the USFWS.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-1 and ORA-2 apply.

ALTERNATIVE B. Same as Alternative A, however, the endangered species lease notice (LN-1) would be used to alert all parties involved in leasing, approving, and developing the lease, that site specific field surveys and additional agency coordination and consultation may be necessary due to the greater probability of impacting threatened or endangered species near this tract.

ALTERNATIVE C. This tract would not be available for lease.

BARBER COUNTY

Barber County contains two forty acre tracts of unleased Federal split-estate minerals. Both are located in the southwest quarter of the county. Special resource values have been identified for both tracts which would warrant special stipulations and notices to ensure resource protection.

Tract 1.
T. 33 S., R. 15 W.,
Sec. 8, SE1/4SE1/4. 40 acres

This tract containing a wetland is located approximately 21 miles west southwest of the town of Medicine Lodge. This tract is not leased at this time. The KDWP owns the surface and has identified this tract as valuable habitat that should not be disturbed.

Tract 2.
T. 35 S., R 14 W.,
Sec. 3, SW1/4NW1/4. 40 acres

This tract is located about 22 miles southwest of the town of Medicine Lodge. The Kansas Biological Survey's Natural Heritage Program (KSNHP) has identified this tract as possible habitat for the checkered garter snake, a species listed by the KDWP as threatened in Kansas.

The RMP alternative selected would result in:

ALTERNATIVE A. Tracts 1 and 2 would be available for lease. ORA-2 would apply to Tract 1.

ALTERNATIVE B. Same as Alternative A, however, ORA-4 would also apply to Tract 1. LN-1 would apply to Tract 2.

ALTERNATIVE C. These tracts would not be available for lease.

BOURBON COUNTY

T. 26 S., R. 24 E.,
Sec. 4, NW/14SW1/4, W1/2SW1/4SW1/4; 60acres
Sec. 5, SE1/4. 160 acres
Tract Total= 220 acres

This tract consists of a 200 acre contiguous parcel and a twenty acre

parcel one eighth mile to the east separated by the Missouri, Kansas, Texas (MKT) railroad tracks. This tract is located within the floodplain of the Marmaton River approximately 4 miles southwest of the city of Fort Scott. This unleased tract has also been classified as a wetland by the USFWS. This tract falls within an area which has been designated by the KDWP as critical habitat for the broadhead skink, listed as threatened by KDWP.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-1 and ORA-2 apply.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. This tract would not be available for lease.

BROWN COUNTY

T. 2 S., R. 17 E.,
Sec. 5, S1/2SE1/4. 80 acres

This eighty acre unleased site is located three miles north of the town of Hiawatha on Spring Branch Creek, an intermittent tributary of Walnut Creek, a perennial stream. The tract contains both wetland and riparian habitat.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-2 would apply.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. This tract would not be available for lease.

CHEYENNE COUNTY

Cheyenne County contains over 11,217 acres of split-estate minerals scattered over its northwest half in 37 tracts ranging in size from 40 acres to over 3800 acres. Fifteen of these tracts have been identified as wetlands or floodplain and have been determined to warrant special stipulations for resource protection. These tracts are:

Tract 1.
T. 2 S., R. 42 W.,
Sec. 10, SW1/4NW1/4; 40 acres
Sec. 9, SE1/4NE1/4, N1/2SE1/4. 120 acres
Tract Total= 160 acres

This unleased tract contains both a wetland and floodplain and is located less than one mile from the Colorado state line six miles south of the Nebraska state line.

Tract 2.
T. 4 S., R 42 W.,
Sec. 22, SW1/4; 160 acres
Sec. 27, N1/2NW1/4. 80 acres
Tract Total= 240 acres

Located on Cowge Creek, one mile from the Colorado state line and less than a mile from the creek's confluence with the South Fork of the Republican River, this unleased tract contains areas classified as wetlands and provides riparian habitat.

Tract 3.
T. 4 S., R. 41 W.,
Sec. 35, SE1/4. 160 acres

This unleased tract is located approximately four miles southwest of the town of Saint Francis on an unnamed intermittent tributary of the South Fork of the Republican River and contains a wetland.

Tract 4.
T. 1 S., R 39 W.,
Sec. 5, SW1/4, W1/2SE1/4. 240 acres

This tract, containing a wetland, sits on an unnamed intermittent tributary of the Arikaree River approximately one-half mile from the Nebraska state line. The tract is a part of a larger block containing 360 acres of split-estate minerals.

Tract 5.
T. 1 S., R. 41 W.,
Sec. 9, NE1/4NW1/4, NE1/4; 200 acres

Tract 6.
Sec. 11, N1/2, NE1/4SE1/4. 360 acres

Tracts 5 and 6 are situated on either end of a larger 1200 acre unleased tract of split-estate minerals located one mile south of Nebraska and one quarter mile east of State Highway 27. Both tracts contain wetlands formed by unnamed intermittent tributaries of the Arikaree River.

Tract 7.
T. 1 S., R. 40 W.,
Sec. 34, NE1/4NE1/4. 40 acres

This is an unleased, isolated tract. It contains a wetland formed on an intermittent tributary of Hackberry Creek approximately four miles west of Hackberry Creek's confluence with the South Fork of the Republican River.

Tract 8.
T. 3 S., R. 41 W.,
Sec. 6, E1/2. 320 acres

This tract is under lease at this time. It contains a wetland formed on an intermittent tributary of Cherry Creek and is located approximately eight miles northwest of the town of Saint Francis.

Tract 9.
T. 2 S., R. 38 W.,
Sec. 16, NE1/4. 160 acres

This unleased tract abuts an additional 200 acres of split-estate minerals to the northwest forming a 360 acre unit. A wetland formed by an unnamed intermittent tributary of Timber Creek is situated on Tract 9. This tract is located approximately two miles west of where Kansas State Highway 161 crosses Timber Creek.

Tract 10.
T 1 S., R. 38 W.,
Sec. 18, Lots 2, 3, SE1/4NW1/4,
NE1/4SW1/4. 167 acres

This unleased tract is located approximately two miles south of Nebraska on an unnamed tributary of the South Fork of the Republican River and contains both wetland and riparian habitat.

Tract 11.
T. 2 S., R. 37 W.,
Sec. 5, Lot 2. 40 acres

This unleased isolated tract contains a wetland and is located on an unnamed intermittent tributary of Timber Creek approximately two miles east of Kansas State Highway 161 and six miles south of Nebraska.

Tract 12.
T. 2 S., R. 40 W.,
Sec. 2, SW1/4NE1/4, SW1/4 NW1/4,
W1/2SE1/4. 200 acres

This unleased tract is located on the headwaters of two intermittent tributaries of Hackberry Creek approximately three miles west of the confluence of Hackberry Creek with the South Fork of the Republican River. This tract contains wetlands formed by the unnamed streams.

Tract 13.
T. 4 S., R. 41 W.,
Sec, 21, SE1/4, SE1/4SW1/4; 200 acres
Sec. 28, W1/2NE1/4. 80 acres
Tract Total= 280 acres

This tract is located approximately eight miles southwest of the town of Saint Francis on Crosby Creek, a tributary of the South Fork of the Republican River, within one-half mile of the confluence of Crosby Creek with the river. This unleased tract contains wetland and riparian habitat.

Tract 14.
T. 2 S., R. 38 W.,
Sec. 8, S1/2NW1/4, N1/2SW1/4. 160 acres

Located three miles west of where Kansas State Highway 161 crosses Timber Creek, this unleased tract contains a wetland formed by the headwaters of an unnamed intermittent tributary of Timber Creek.

Tract 15.
T. 2 S., R. 39 W.,
Sec. 16, All. 640 acres

This unleased tract is located in the floodplain of the South Fork of the Republican River eight miles northeast of the town of Saint Francis.

Tract 16.
T. 2 S., R. 41 W.,
Sec. 25, NE1/4. 160 acres

This quarter section of unleased Federal split-estate minerals is located approximately 5 miles northwest of the town of St. Francis on the north side and adjacent to State Highway 27. The headwaters of Fish Creek occur on this tract and there is a wetland associated with this creek.

The RMP alternative selected would result in:

ALTERNATIVE A. These tracts would be available for lease. ORA-1 would apply to Tracts 1 and 15, ORA-2 would apply to Tracts 1 through 14 and Tract 16. Tract 8 would be re-offered with ORA-2.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. These tracts would not be available for lease.

CLARK COUNTY

Clark County contains seven tracts of split-estate minerals totaling approximately 377 acres. There are no leased tracts within the county, however should leasing occur, three of these tracts contain surface resources where ORA-1 or ORA-2 would apply. These tracts are:

Tract 1.
T. 32 S. R. 23 W.,
Sec. 18,, NE1/4NW1/4. 40 acres

This isolated tract contains wetlands and is located approximately six miles northwest of the town of Ashland on an unnamed intermittent tributary of the West Branch of Bear Creek.

Tract 2.
T. 34 S., R. 24 W.,
Sec. 7, SW1/4SE1/4. 40 acres

This isolated tract is located in the floodplain of Big Sandy Creek approximately one-half mile east of the U.S. Highway 283 crossing. This tract contains wetland and riparian habitats on Big Sandy Creek.

Tract 3.
T. 35 S., R. 25 W.,
Sec. 5, Lot 2. 18 acres

This tract is located about three miles west of the town of Englwood and contains a wetland formed by an unnamed intermittent stream.

Tract 4.
T. 31 S., R. 23 W.,
Sec. 27, SW1/4NE1/4. 40 acres

This isolated tract is located about nine miles northwest of Ashland, Kansas. The surface of this public land tract is in the process of being patented to the KDWP. The KDWP has identified this tract as having valuable wildlife resources and has requested that no surface disturbing activities be allowed.

The RMP alternative selected would result in:

ALTERNATIVE A. These tracts would be available for lease. ORA-1 would apply to Tract 1, ORA-2 applies to all.

ALTERNATIVE B. No change from Alternative A for tracts 1 through 3. Tract 4 would be available for lease with ORA-4 applied to protect wildlife resources identified by the KDWP.

ALTERNATIVE C. This tract would not be available for lease.

CLAY COUNTY

T. 7 S., R. 4 E.,
Sec. 7, NE1/4. 159 acres

This unleased tract is located on an unnamed tributary of West Fancy Creek approximately seven miles northeast of the city of Clay Center. Wetlands occur on this tract.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-2 would apply.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. This tract would not be available for lease.

COMANCHE COUNTY

Comanche County contains approximately 160 acres of split-estate minerals within three tracts. Three of these tracts possess surface values requiring greater protection than STC provides.

Tract 1.
T. 31 S., R. 16 W.,
Sec. 1, Lot 4. 39 acres

This leased tract is located on North Elk Creek approximately 18 miles northeast of the town of Coldwater. Wetlands occur on this tract. The surface of this public land tract is in the process of being patented to the KDWP. The KDWP has identified this tract as having valuable wildlife resources and has requested that no surface disturbing activities be allowed.

Tract 2.
T. 34 S., R. 16 W.,
Sec. 8, NW1/4SW1/4, SE1/4SW1/4. 80 acres

This unleased tract is located on an unnamed tributary of the Salt Fork of the Arkansas River approximately 17 miles southeast of the town of Coldwater. Wetlands occur on this tract. The surface of this public land tract is in the process of being patented to the KDWP. The KDWP has identified this tract as having valuable wildlife resources and has requested that no surface disturbing activities be allowed.

Tract 3.
T. 34 S., R. 17 W.,
Sec. 11, SE1/4SE1/4. 40 acres

This unleased tract is located within the floodplain of the South Fork of the Arkansas River approximately 11 miles east of the town of Buttermilk. This tract contains a wetland and provides habitat which may be suitable for the checkered garter snake, a state listed

threatened species.

The RMP alternative selected would result in:

ALTERNATIVE A. Tract 2 and 3 would be available for lease. Special stipulation ORA-2 would apply to Tracts 2 and 3 and ORA-1 would apply to Tract 3. Should Tract 1 become available, ORA-2 applies.

ALTERNATIVE B. Same as Alternative A. However, LN-1 would apply to Tract 3 and ORA-4 would apply to Tract 2 and should Tract 1 become available, ORA-4 would also apply.

ALTERNATIVE C. This tract would not be available for lease.

COWLEY COUNTY

T. 34 S., R. 3 E.,
Sec. 7, Lot 1. 0.38 acre

This tract is located on the Arkansas River at the town of Geuda Springs. The tract falls within both a floodplain and wetland habitats. The Arkansas River has been designated critical habitat by the KDWP for the Arkansas darter (state listed threatened species), the speckled chub (state listed endangered species) and the bald eagle (state and Federal listed endangered species). The surface of this public land tract is in the process of being patented to the KDWP. The KDWP has identified this tract as having valuable wildlife resources and has requested that no surface disturbing activities be allowed.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-1 and ORA-2 apply.

ALTERNATIVE B. This tract would be available for lease. In addition to ORA-1 and 2, a no surface occupancy (ORA-4) restriction would prevent oil and gas drilling activities on this site. LN-1 would also apply.

ALTERNATIVE C. This tract would not be available for lease.

DECATUR COUNTY

Tract 1.
T. 1 S., R. 27 W.,
Sec. 23, E1/2E1/2. 160 acres

This unleased tract is located within the floodplain of Sappa Creek approximately three miles south of Nebraska. This tract contains both wetland and riparian habitat.

Tract 2.
T. 1 S., R. 29 W.,
Sec. 1, SW1/4SE1/4. 40 acres

This unleased tract is located approximately two miles northeast of Cedar Bluffs, Kansas and one mile south of the Kansas/Nebraska state line. The surface of this public land tract is in the process of being patented to the KDWP. The KDWP has identified this tract as having valuable wildlife resources and has requested that no surface disturbing activities be allowed.

The RMP alternative selected would result in:

ALTERNATIVE A. These tracts would be available for lease. ORA-1 and ORA-2 apply to Tract 1.

ALTERNATIVE B. No change from Alternative A for Tract 1. ORA-4 would apply to Tract 2.

ALTERNATIVE C. This tract would not be available for lease.

DONIPHAN COUNTY

T. 2 S., R. 19 E.,
Sec. 24, Lot 7. 3.68 acres

This unleased tract lies one-half mile east of the town of Highland on Mission Creek, a tributary of the Missouri River. This tract contains wetlands. The surface of this public land tract is in the process of being patented to the KDWP. The KDWP has identified this tract as having valuable wildlife resources and has requested that no surface disturbing activities be allowed.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-2 applies.

ALTERNATIVE B. No change from Alternative A except ORA-4 would apply to this tract.

ALTERNATIVE C. This tract would not be available for lease.

DOUGLAS COUNTY

Douglas County contains five tracts of split-estate minerals totalling approximately 472 acres, all unleased. Three of these tracts contain surface resources which would require more than STC. These tracts are:

Tract 1.
T. 13 S., R. 18 E.,
Sec. 1, Lots 1, 2, S1/2NE1/4. 158 acres

This tract is located two miles west of the city of Lawrence and one-half mile north of Clinton Lake. The KSNHP has identified the area of this tract as tallgrass prairie and possible habitat for Mead's milkweed and the western white-fringed prairie orchid. These species are Federally listed as threatened by the USFWS.

Tract 2.
T. 13 S., R. 20 E.,
Sec. 7, M&B. 18 acres

This unleased tract has also been identified as possible habitat for Mead's milkweed. This tract is located within the city of Lawrence adjacent to the Haskell Indian Jr. College and adjacent to KDWP's designated critical habitat identified for the northern crawfish frog (State of Kansas Threatened Species).

Tract 3.
T. 14 S., R. 20 E.,
Sec. 26, E1/2NE1/4. 80 acres

This tract is located approximately two miles northeast of Baldwin City adjacent to State Lake. This tract contains wetlands and riparian habitat along Coal Creek, a tributary of the Wakarusa River. This tract has been identified as potentially providing habitat for a Federal listed threatened species, Mead's milkweed.

The RMP alternative selected would result in:

ALTERNATIVE A. Tract 1 would be available for lease with STC. Tract 2 would not be available for lease. It is located within the city limits of Lawrence. Tract 3 would be available with ORA-2 applied.

ALTERNATIVE B. Tracts 1 and 3 would be available for lease as stated under Alternative A above. However, LN-1 would be applied. Tract 2 would not change.

ALTERNATIVE C. These tracts would not be available for lease.

EDWARDS COUNTY

T. 26 S., R. 20 W.,
Sec. 32, SW1/4SE1/4. 40 acres

This is an unleased upland tract located near the Arkansas River 13 miles southwest of the town of Kinsley. The tract has been identified as valuable habitat by the KDWP, who owns the surface. The KDWP has requested that no surface disturbing activities be allowed.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease with STC.

ALTERNATIVE B. This tract would be available for lease with ORA-4 applied to protect wildlife habitats identified by the KDWP.

ALTERNATIVE C. This tract would not be available for lease.

ELLIS COUNTY

T. 11 S., R. 20 W.,
Sec. 22, SE1/4SW1/4. 40 acres

This tract contains wetlands formed by an unnamed tributary of the Saline River and is located approximately nine miles north of the town of Ellis.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-2 applies.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. This tract would not be available for lease.

FINNEY COUNTY

Finney County has approximately 9,279 acres of split-estate minerals contained in 18 tracts generally located in the southwest portion of the county. All split-estate tracts are situated entirely within a known gas field. All but three tracts are leased. Portions of the leased tracts have been identified as containing wetlands or providing threatened species habitat.

Tract 1.
T. 25 S., R. 34 W.,
Sec. 34, SE1/4; 160 acres
T. 26 S., R. 34 W.,
Sec. 10,; 640 acres
Sec. 3, Lots 3, 4, S1/2NW1/4, S1/2. 601 acres
Tract Total= 1,401 acres

This tract of split-estate is located approximately 13 miles southwest of Garden City. Section 10 contains a wetland. Sections 3 and 34 have been identified as possibly providing habitat for the glossy snake, a state listed threatened species. This section is a part of a tract of 3000 acres of contiguous Federal minerals.

Tract 2.
T. 25 S., R. 33 W.,
Sec. 11, N1/2. 320 acres

Located near Garden City, this is a one-half section upland tract adjacent to a State Game Preserve (KDWP Refuge) which supports a buffalo herd. This state managed area is open to the regular Kansas hunting seasons subject to some firearm restrictions. This portion of Kansas is known for its excellent pheasant and quail hunting.

Tract 3.
T. 24 S., R. 33 W.,
Sec. 18, Lot 4. 35 acres

This tract is located one and one-half miles south of the town of Holcomb and

provides potential habitat for the glossy snake and the longnose snake, a state listed threatened species.

Tract 4.
T. 26 S., R. 34 W.,
Sec. 31, All. 640 acres

This section is located approximately 18 miles southwest of Garden City and contains wetlands. This section is a part of a tract of 2880 acres of contiguous Federal minerals.

The RMP alternative selected would result in:

ALTERNATIVE A. These tracts are currently leased with STC. Should these tracts become available, Tracts 1 and 4 would be leased with ORA-2.

ALTERNATIVE B. In addition to ORA-2 on Tracts 1 and 4, Tract 2 would be re-offered with season of use restrictions (ORA-3) from November 1, through March 1. This would prevent oil and gas drilling activities from disrupting the upland game seasons of the State. Tracts 1 and 3 would also be subject to LN-1.

ALTERNATIVE C. These tracts would not be available for lease.

FRANKLIN COUNTY

T. 17 S., R. 20 E.,
Sec. 4, E1/2SW1/4, SE1/4NE1/4. 120 acres

This tract is located approximately one mile east of the U.S. Interstate Highway 35 crossing of the Marais des Cygnes River outside of the city of Ottawa. The tract has been identified as possible habitat for the northern crawfish frog and the redbelly snake, a state listed threatened species.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. STC apply.

ALTERNATIVE B. This tract would be available for lease. LN-1 would apply.

ALTERNATIVE C. This tract would not be available for lease.

GEARY COUNTY

T. 11 S., R. 5 E.,
Sec. 22, Lot 6. 5.7 acres

This unleased tract is located within the floodplain of the Republican River between Fort Riley and Milford Reservoir. The surface of this public land tract is in the process of being patented to the KDWP. The KDWP has identified this tract as having valuable wildlife resources and has requested that no surface disturbing activities be allowed.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-1 applies.

ALTERNATIVE B. No change from Alternative A except ORA-4 would apply.

ALTERNATIVE C. This tract would not be available for lease.

GOVE COUNTY

T. 15 S., R. 26 W.,
Sec. 20, NE1/4SE1/4; 40 acres
Sec. 21, W1/2NW1/4, NW1/4SW1/4. 120 acres
Tract Total= 160 acres

This tract located on Sand Creek, a tributary of the Smoky Hill River, is composed of an unleased 40 acre portion and a leased 120 acre portion. The KDWP is the surface owner and has identified both portions as containing valuable habitat. The KDWP has requested that no surface disturbing activities be

allowed.

The RMP alternative selected would result in:

ALTERNATIVE A. Section 20 would be available for lease with STC.

ALTERNATIVE B. Section 20 would be available for lease with ORA-4 applied. Should Section 21 become available, ORA-4 would also apply.

ALTERNATIVE C. This tract would not be available for lease.

GREELEY COUNTY

Greeley County contains over 1,932 acres of split-estate minerals in 10 tracts. Four of the unleased tracts contain surface values which would require surface protection measures greater than STC.

Tract 1.
T. 18 S., R. 41 W.,
Sec. 11, NE1/4. 160 acres

This tract is located in the floodplain of White Woman Creek approximately two miles northwest of the town of Horace. This unleased tract contains wetlands formed by the creek.

Tract 2.
T. 20 S., R. 42 W.,
Sec. 23, NE1/4. 160 acres

This tract is located approximately 14 miles southwest of the town of Tribune. This unleased tract has been identified as containing wetlands by the USFWS's National Wetland Inventory (NWI).

Tract 3.
T. 20 S., R 42 S.,
Sec. 31, SE1/4. 160 acres

This unleased tract is located approximately 19 miles southwest of the town of Tribune on an unnamed intermittent stream. Wetlands are formed by the stream.

Tract 4.
T. 20 S., R. 43 W.,
Sec. 11, Lot 2, E1/2SW1/4. 132 acres

This tract located on the Colorado state line 18 miles southwest of the town of Tribune, contains wetlands formed by an intermittent stream.

The RMP alternative selected would result in:

ALTERNATIVE A. These tracts would be available for lease. ORA-1 applies to Tract 1, and ORA-2 applies to all tracts.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. This tract would not be available for lease.

HAMILTON COUNTY

Hamilton County contains over 8,041 acres of split-estate minerals in 27 tracts generally scattered across the south-central portion of the county.

Tract 1.
T. 23 S., R. 42 W.,
Sec. 28, Lot 5. 8.1 acres

Tract 2.
T. 23 S., R. 42 W.,
Sec. 34, Lot 1. 27.3 acres

Both tracts are located in the Arkansas River floodplain about four miles east of the town of Coolidge. The Arkansas River forms a wetland on these tracts and the river has been identified as state designated critical habitat for the flathead chub, listed by the KDWP as a threatened species. The USFWS recognizes the significance of the Arkansas River and its tributaries for numerous listed and candidate species.

The surface of these public land tracts are in the process of being patented to the KDWP. The KDWP has identified these tracts as having valuable wildlife resources and has requested that no surface disturbing activities be allowed.

Tract 3.
T. 24 S., R. 42 W.,
Sec. 14, NE1/4, N1/2NW1/4,N1/2NE1/4.
320 acres

This unleased tract is located approximately seven miles west of the town of Syracuse on an unnamed intermittent tributary of the Arkansas River about two miles above the confluence with the river. The tract contains wetlands formed by the stream and identified by the USFWS NWI.

Tract 4.
T. 24 S., R. 40 W.,
Sec. 20, Lot 1. 11 acres

This leased tract is located in the Arkansas River floodplain approximately one mile downstream of the town of Syracuse. The river has been identified as state designated critical habitat for the flathead chub, listed as threatened by the KDWP. The surrounding area is considered potential habitat for the longnose snake, also listed as threatened by the KDWP. The surface of this public land tract is in the process of being patented to the KDWP. The KDWP has identified this tract as having valuable wildlife resources and has requested that no surface disturbing activities be allowed.

Tract 5.
T. 24 S., R. 40 W.,
Sec. 20, S1/2NW1/4. 80 acres

This leased upland tract is located approximately one mile south of the town of Syracuse. The tract has been identified by the KSNHP as possible habitat for the longnose snake, a state listed threatened species.

Tract 6.
T. 26 S., R. 41 W.,
Sec. 2, Lots 3 and 4. 137 acres

Tract 6 is unleased split-estate minerals located on the headwaters of an unnamed tributary of North Bear Creek approximately 10 miles south of the town of Syracuse one-half mile west of U.S. Highway 270. The tract has been identified as a wetland by the USFWS's NWI.

Tract 7.
T. 24 S., R. 41 W.,
Sec. 22, N1/2. 320 acres

This tract is located approximately two miles south of the town of Syracuse and one mile east of U.S. Highway 270. This upland tract provides possible habitat for the longnose snake, a state listed threatened species.

Tract 8.
T. 21 S., R. 42 W.,
Sec. 4, Lots 1 to 4, inclusive,
S1/2NE1/4, S1/2NW1/4. 329 acres

This unleased tract identified as a wetland by the USFWS NWI is located approximately five miles east of the Colorado state line on the Greeley county line. The wetland is formed by the headwaters of an unnamed intermittent stream.

<u>The RMP alternative selected would result in:</u>

<u>ALTERNATIVE A.</u> Unleased tracts would be available for lease. ORA-1 would apply to Tracts 1, 2 and Tract 4 should it become available for lease, ORA-2 applies to Tracts 1, 2, 3, 6 and 8.

ALTERNATIVE B. No change from Alternative A except in addition to previous stipulations, LN-1 would apply to Tracts 1, 2, 4, 5 and 7. ORA-4 would apply to Tracts 1 and 2 and should Tract 4 become available ORA-4 would also apply.

ALTERNATIVE C. These tracts would not be available for lease.

HASKELL COUNTY

All 3,288 acres of split-estate minerals within Haskell County are currently under lease. These Federal minerals are generally contained in five tracts located in the northwest corner of the county. Two of these tracts have been identified as containing wetlands.

Tract 1.
T. 27 S., R. 34 W.,
Sec. 12, All. 640 acres

This tract located six miles west of U.S. Highway 83 approximately 22 miles north of the town of Sublet contains a playa lake identified as a wetland by the USFWS NWI.

Tract 2.
T. 27 S., R. 34 W.,
Sec. 15, NE1/4. 160 acres

Located approximately eight miles west of U.S. Highway 83 and about 28 miles north of the town of Satanta, this tract contains a playa lake identified as a wetland by the USFWS NWI.

The RMP alternative selected would result in:

ALTERNATIVE A. These tracts would be available for lease, ORA-2 applies to both tracts should they become available for lease.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. These tracts would not be available for lease.

JACKSON COUNTY

Jackson County contains two tracts of split-estate minerals both unleased and containing wetlands.

Tract 1.
T. 7 S., R. 14 E.,
Sec. 14, SW1/4NE1/4,S1/2SE1/4NE1/4.
60 acres

This tract is located on an unnamed tributary of Banner Creek approximately three miles southwest of the town of Holton. Tract 1 contains wetlands formed by the creek.

Tract 2.
T. 6 S., R. 14 E.,
Sec. 12, SE1/4SW1/4. 40 acres

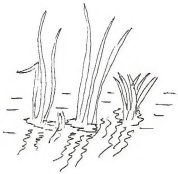
This tract is located on the unnamed south fork of Straight Creek about five miles northwest of the town of Holton three miles west of U.S. Highway 75. A wetland and riparian area occur at this site.

The RMP alternative selected would result in:

ALTERNATIVE A. These tracts would be available for lease. ORA-2 applies..

ALTERNATIVE B. No change from A.

ALTERNATIVE C. These tracts would not be available for lease.



JEFFERSON COUNTY

Tract 1.
T. 11 S., R. 19 E.,
Sec. 2, S1/2SE1/4; 80 acres
Sec. 11, N1/2NE1/4. 80 acres
Tract Total= 160 acres

This 160 acre tract of unleased split-estate minerals is located on Plum Creek approximately one and one-half miles above its confluence with Mud Creek, a tributary of the Kansas River. This tract contains a wetland formed by Plum Creek as well as riparian habitat.

Tract 2.
T. 11 S., R. 16 E.,
Sec. 25, M&B; 34 acres
Sec. 24, M&B. 40 acres
Tract Total= 74 acres

This wetland tract located in the Kansas River floodplain is one-half mile south of the city of Shawnee. The Kansas River has been designated by the KDWP as critical habitat for the flathead chub, a state listed threatened species.

The RMP alternative selected would result in:

ALTERNATIVE A. These tracts would be available for lease. ORA-2 applies to Tract 1. ORA-1 and 2 apply to Tract 2.

ALTERNATIVE B. No change from Alternative A, except that ESLN-ORA-1 would apply to Tract 2.

ALTERNATIVE C. This tract would not be available for lease.

JEWELL COUNTY

T. 3 S., R. 6 W.,
Sec. 14, W1/2NE1/4NW1/4,NW1/4NW1/4.
62 acres

This tract of unleased minerals is located on Marsh Creek along U.S. Highway 36 approximately one mile east of the town of Formoso. This tract contains a wetland formed along Marsh Creek.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-2 applies.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. This tract would not be available for lease.

JOHNSON COUNTY

T. 12 S., R. 22 E.,
Sec. 35, W1/2W1/2SW1/4, SE1/4NE1/4, E1/2SW1/4. 160 acres

This tract is located along unnamed, intermittent tributaries of the Kansas River about 1 mile south of the town of Cedar and along the north side of Kansas State Highway 10. Wetlands are present on this tract.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-2 would apply.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. This tract would not be available for lease.

KEARNY COUNTY

Located in the southwest part of the State, Kearny County contains over 18,853 acres of split-estate minerals within 37 tracts. Four of the tracts have been identified as possessing values requiring special considerations. The currently leased tracts and/or portions of tracts would require application of the necessary stipulations and notices should they terminate and be re-offered.

Tract 1.
T. 22 S., R. 35 W.,
Sec. 36, SE1/4. 160 acres

This leased tract of minerals is located on the Amazon Ditch approximately seven miles north of the town of Deerfield. The USFWS NWI has identified this tract as containing a wetland.

Tract 2.
T. 25 S., R. 38 W.,
Sec. 31, NE1/4. 160 acres

Located approximately six miles due south of the town of Kendall, this unleased tract contains the headwaters of an unnamed intermittent stream identified by the USFWS NWI as being a wetland.

Tract 3.
T. 22 S., R. 36 W.,
Sec. 10, SE1/4 (unleased); 160 acres
Sec. 14, NW1/4 (leased); 160 acres
Sec. 15, SE1/4 (leased). 160 acres
Tract Total= 480 acres

These three quarter sections form a contiguous tract of split-estate minerals located on James Draw, approximately 13 miles north of the town of Lakin and one mile east of Kansas State Highway 25. Each portion contains a wetland associated with James Draw.

Tract 4.
T. 26 S., R. 37 W.,
Sec. 10, All. 640 acres

This section of leased split-estate minerals is a portion of a 1600 acre tract located on State Highway 25 about 10 miles south of the town of Lakin. This section contains a portion of Bear Creek which forms a wetland.

Tract 5.
T. 25 S, R. 37 W.,
Sec. 30, Lots 3, 4, S1/2NE1/4,
E1/2SW1/4 and SE1/4. 400 acres

This leased tract of minerals lies about six miles southeast of Kendall, Kansas. The surface of this public land tract is in the process of being patented to the KDWP. The KDWP has identified this tract as having valuable wildlife resources and has requested that no surface disturbing activities be allowed.

Tract 6.
T. 24 S., R. 38 W.,
Sec. 28, SE1/4NW1/4. 40 acres

This leased tract of minerals lies about 2.5 miles east of Kendall, Kansas, south of US Highway 50. The surface of this public land tract is in the process of being patented to the KDWP. The KDWP has identified this tract as having valuable wildlife resources and has requested that no surface disturbing activities be allowed.

The RMP alternative selected would result in:

ALTERNATIVE A. All unleased tracts or unleased portions of tracts would be available for lease, ORA-2 applies. ORA-2 would be applied to currently leased tracts or leased portions of tracts should those leases terminate and the lands be re-offered for lease.

ALTERNATIVE B. No change from Alternative A except ORA-4 would apply to Tracts 5 and 6 should they become available.

ALTERNATIVE C. These tracts would not be available for lease.

KINGMAN COUNTY

T. 30 S., R. 5 W.,
Sec. 6, Lot 2. 16.9 acres

This tract is located approximately three miles west of the town of Norwich and contains the headwaters of an unnamed intermittent stream.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-2 applies.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. This tract would not be available for lease.

LANE COUNTY

Lane County, situated in a region of the state with many playa lakes, contains approximately 1160 acres of split-estate minerals within ten tracts. Half of these have been identified as possessing values warranting protection greater than afforded by STC.

Tract 1.
T. 16 S., R. 29 W.,
Sec. 3, SE1/4SE1/4; 40 acres
Sec. 10, NE1/4NE1/4. 40 acres
Tract Total= 80 acres

This unleased tract lies along the west side of Kansas State Highway 23 approximately five miles north of its junction with Kansas State Highway 4. This tract contains wetlands formed by an unnamed intermittent tributary of Cheyenne Creek.

Tract 2.
T. 16 S., R. 28 W.,
Sec. 12, E1/2SE1/4. 80 acres

Tract 2, located approximately two miles northwest of the town of Pendennis, contains a perennial wetland associated with a reservoir constructed on an unnamed intermittent tributary of the Smoky Hill River.

Tract 3.
T. 16 S., R. 27 W.,
Sec. 4, S1/2SW1/4. 80 acres

This tract is located approximately three miles north of the town of Pendennis and contains wetlands formed by the headwaters of an unnamed intermittent tributary of the Smoky Hill River.

Tract 4.
T. 16 S., R. 28 W.,
Sec. 11, SE1/4NW1/4, E1/2SW1/4.
120 acres

This tract located approximately three miles northwest of the town of Pendennis, contains wetlands formed by the headwaters of two intermittent unnamed tributaries of the Smoky Hill River.

Tract 5.
T. 16 S., R. 27 W.,
Sec. 12, W1/2NE1/4, NW1/4, 240 acres

This leased tract located approximately four miles northeast of the town of Pendennis contains wetlands formed by an unnamed tributary of the Smoky Hill River.

The RMP alternative selected would result in:

ALTERNATIVE A. Tracts 1-4 would be available for lease. ORA-2 applies. Should Tract 5 become available, ORA-2 would apply.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. These tracts would not be available for lease.

LEAVENWORTH COUNTY

Leavenworth County contains 446 acres of split-estate minerals in ten tracts scattered throughout the county. All split-estate tracts are unleased.

Tract 1.
T. 8 S., R, 21 E.,
Sec. 29, M&B. 47.6 acres

This tract is located approximately two miles southeast of the town of Easton, and contains wetlands formed by an unnamed tributary of Stranger Creek, a tributary of the Kansas River.

Tract 2.
T. 9 S., R. 21 E.,
Sec. 33, M&B. 58 acres

This tract is located in the floodplain of Stranger Creek approximately seven miles north of the town of Tonganoxie. This tract contains wetlands associated with the creek.

Tract 3.
T. 8 S., R. 24 E.,
Sec. 24, PARCEL "1"; 9.4 acres
Sec. 24, M&B. 33.4 acres
Tract Total= 42.8 acres

This tract is located on the Missouri River within the City of Leavenworth north of U.S. Highway 73. The Missouri River has been identified as endangered species habitat for the pallid sturgeon by both the KDWP and the USFWS. The pallid sturgeon is listed by the State of Kansas as endangered and is a Category 2 Candidate Species under review by the USFWS.

Tract 4.
T. 12 S., R. 20 E.,
Sec. 15, M&B, NE1/4SW1/4,NE1/4SE1/4.
120 acres

Tract 4 lies between Union Pacific Railroad (U.S. Highway 40/24) and Interstate Highway 70, 8 miles west of the town of Linwood. The KSNHP has identified the area near this tract as having potential habitats for the western white-fringed prairie orchid and Mead's milkweed, both Federally listed as threatened species. A southeastern tallgrass prairie area known as Big Springs occurs within 3 miles of this tract.

Tract 5.
T. 9 S., R. 20 E.,
Sec. 2, N1/2SE1/4. 78 acres

This tract is approximately 2.5 miles north-northwest of the town of Springdale, adjacent to a paved county road. The KSNHP has identified this area as possible habitat for the redbelly snake, a species listed as threatened by the KDWP.

The RMP alternative selected would result in:

ALTERNATIVE A. Tracts 1, 2, 4, and 5 would be available for lease. ORA-2 applies to Tracts 1 and 2; ORA-1 applies to Tract 2. Tract 3 would not be available for lease due to its location within the Leavenworth city limits.

ALTERNATIVE B. Same as Alternative A, except that the LN-1 would apply to Tracts 4 and 5.

ALTERNATIVE C. These tracts would not be available for lease.

LINN COUNTY

Linn County contains approximately 484 acres of split-estate minerals within three tracts.

Tract 1.
T. 19 S., R. 24 E.,
Sec. 19, Lot 4; 29 acres
Sec. 30, Lots 1 and 3. 115 acres
Tract Total= 144 acres

Tract 1 lies within the floodplain of the Marais des Cygnes River near its confluence with Middle Creek. A wetland occurs on this tract. The KSNHP has identified potential habitats for three state listed threatened species on and in the vicinity of Tract 1. The broadhead skink, eastern newt, and redbelly snake have all been listed as state threatened species by the KDWP.

Tract 2.
T. 22 S., R. 23 E.,
Sec. 8, M&B; 60 acres
Sec. 17, Lots 1, 2, E1/2NW1/4, W1/2NE1/4. 240 acres
Tract Total= 300 acres

Tract 2 lies within the floodplain created by the confluence of Little Sugar Creek and the South Fork of Little Sugar Creek approximately four miles west of Mound City. The creeks form wetlands which provide riparian habitat.

Tract 3.
T. 23 S., R. 23 E.,
Sec. 15, NW1/4NE1/4. 40 acres

This tract located on Lost Creek approximately six miles south-southwest of Mound City contains wetlands formed by the creek.

The RMP alternative selected would result in:

ALTERNATIVE A. All tracts would be available for lease. ORA-1 applies to Tracts 1 and 2; ORA-2 applies to all.

ALTERNATIVE B. Same as A, plus the LN-1 would apply to Tract 1.

ALTERNATIVE C. These tracts would not be available for lease.

LOGAN COUNTY

Logan County contains eleven tracts of split-estate minerals totalling approximately 865 acres. Several of these tracts provide threatened species habitat or wetlands.

Tract 1.
T. 15 S., R. 32 W.,
Sec. 1, NE1/4SW1/4. 40 acres

Tract 2.
T. 15 S., R. 32 W.,
Sec. 11, S1/2SW1/4, W1/2SE1/4. 160 acres

These two tracts are located within one mile of each other on the same unnamed tributary of the Smoky Hill River approximately 24 miles due south of the town of Oakley. Tract 1 lies within the floodplain of the river and Tract 2 contains a wetland at the headwaters of the tributary.

Tract 3.
T. 13 S., R. 37 W.,
Sec. 30, Lot 9; 1.1 acre
Sec. 31, Lots 6 and 7. 23.8 acres
T. 14 S., R. 37 W.,
Sec. 26, SE1/4NE1/4. 40 acres
T. 15 S., R. 37 W.,
Sec. 8, N1/2NE1/4. 80 acres

These tracts are all located within the southwest corner of the county, an area designated by the KDWP as critical habitat for the western green toad, a state listed threatened species. The portions of this tract described in Sections 30 and 31 are public land surface which is in the process of being patented to the KDWP. The KDWP has identified these lands in Sections 30 and 31 as having valuable wildlife resources and has requested that no

surface disturbing activities be allowed.

Tract 4.
T. 14 S., R. 32 W.,
Sec. 14, SW1/4NW1/4. 40 acres

This tract is located about 19 miles south of Oakley, Kansas adjacent to U.S. Highway 83. The surface of this public land tract is in the process of being patented to the KDWP. The KDWP has identified this tract as having valuable wildlife resources and has requested that no surface disturbing activities be allowed.

The RMP alternative selected would result in:

ALTERNATIVE A. All tracts would be available for lease, ORA-1 applies to Tract 1, ORA-2 applies to Tract 2.

ALTERNATIVE B. Same as Alternative A, plus LN-1 would apply to Tract 3 and ORA-4 would apply to Tract 4 and lands in Sections 30 and 31 of Tract 3.

ALTERNATIVE C. These tracts would not be available for lease.

MARSHALL COUNTY

Marshall County contains approximately 160 acres of split-estate minerals located in three unleased tracts, two of which possess surface resource values in need of greater than STC should they be leased.

Tract 1.
T. 2 S., R. 6 E.,
Sec. 1, Lot 1. 39 acres

This tract is located in the floodplain of an unnamed tributary of Horseshoe Creek about four miles northwest of the town of Marysville.

Tract 2.
T. 3 S., R. 10 E.,
Sec. 11, NW1/4SW1/4. 40 acres

This tract is located on an unnamed tributary of the North Fork of the Black Vermillion River, five miles north of the town of Vermillion, and contains wetlands.

The RMP alternative selected would result in:

ALTERNATIVE A. All tracts would be available for lease, ORA-1 applies to Tract 1, ORA-2 applies to Tract 2.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. These tracts would not be available for lease.

MEADE COUNTY

Meade County contains fifteen tracts with over 1,512 acres of split-estate minerals scattered over the southern half of the county.

Tract 1.
T. 31 S., R. 26 W.,
Sec. 25, Lots 5 and 6. 17.4 acres

Tract 1 lies on Gyp Creek approximately 12 miles east of the town of Meade and two miles north of U.S. Highway 160. Gyp Creek forms a wetland at this location.

Tract 2.
T. 33 S., R. 29 W.,
Sec. 3, E1/2SW1/4; 80 acres
Sec. 10, W1/2NE1/4, E1/2NW1/4. 160 acres
Tract Total= 240 acres

Tract 2 consists of a leased portion in section 3 and an unleased portion in section 10. This tract is located eight miles southwest of the town of Meade on an unnamed tributary of a state lake. Both parcels contain wetlands formed by

the stream. Section 10 has been identified by the KSNHP as possible habitat for two state listed threatened species, the longnose snake and the Texas blind snake.

Tract 3.
T. 34 S., R. 27 W.,
Sec. 15, S1/2SE1/4; 80 acres
Sec. 22, NE1/4, N1/2SE1/4. 240 acres
Tract Total= 320 acres

This unleased tract is located on an unnamed tributary of Crooked Creek approximately 14 miles south of the town of Meade. Wetlands occur on this tract in association with the tributary.

Tract 4.
T. 34 S., R. 26 W.,
Sec. 13, Lots 5 and 6; 3.5 acres
Sec. 25, Lots 5 and 6. 2.4 acres
Tract Total= 5.9 acres

This is a narrow strip tract five miles long located approximately 16 miles southeast of the town of Meade. The two sections listed contain wetlands formed by two different intermittent streams.

Tract 5.
T. 35 S., R. 29 W.,
Sec. 6, Lot 2, SE1/4NW1/4 (unleased). 80 acres
T. 35 S., R. 30 W.,
Sec. 1, NE1/4 (leased). 160 acres
Tract Total= 240 acres

This tract containing both leased and unleased sections is located two miles north of the Cimarron River and one mile west of Kansas State Highway 23. The area in Section 6 contains wetlands formed by an unnamed tributary of the river while the leased tract has been identified as possessing habitat favorable for the occurrence of a state listed threatened species, the Texas blind snake.

Tract 6.
T. 34 S., R. 30 W.,
Sec. 32, N1/2S1/2. 160 acres

This unleased tract located approximately one mile north of the Cimarron River and six miles west of Kansas State Highway 23, has been identified as possessing habitat possibly favorable for the occurrence of the Texas blind snake, a state listed threatened species.

Tract 7.
T. 33 S., R. 28 W.,
Sec. 28, SW1/4SE1/4. 40 acres

Tract 7 lies 10 miles south and 1.5 miles west of Meade, Kansas. The surface of this public land tract is in the process of being patented to the KDWP. The KDWP has identified this tract as having valuable wildlife resources and has requested that no surface disturbing activities be allowed.

Tract 8.
T. 34 S., R. 30 W.,
Sec. 19, Lot 3. 38.78 acres

Tract 8 lies on the Seward/Meade County line about 14 miles south of Plains, Kansas. The surface of this public land tract is in the process of being patented to the KDWP. The KDWP has identified this tract as having valuable wildlife resources and has requested that no surface disturbing activities be allowed.

<u>The RMP alternative selected would result in:</u>

<u>ALTERNATIVE A</u>. All tracts would be available for lease; ORA-2 applies to Tracts 1-5, should leased section of Tract 2 become available ORA-2 would apply.

ALTERNATIVE B. Same as Alternative A, plus LN-1 would apply to Tracts 2, 5, and 6 and ORA-4 would apply to Tracts 7 and 8.

ALTERNATIVE C. These tracts would not be available for lease.

MITCHELL COUNTY

T. 7 S., R. 7 W.,
Sec. 32, SW1/4. 160 acres

This unleased tract is located on Leban Creek a tributary of the Solomon River approximately three miles south of the creek's confluence near the town of Beloit. Wetlands occur on this tract as well as riparian habitat.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-2 applies.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. This tract would not be available for lease.

MORRIS COUNTY

T. 14 S., R. 6 E.,
Sec. 4, W1/2SW1/4; 80 acres
Sec. 5, Lots 3, 4, SW1/4NE1/4, S1/2NW1/4, W1/2SE1/4, SE1/4SE1/4. 362 acres
Tract Total= 442 acres

This tract lies in the floodplain of Clarks Creek in the community of Skiddy approximately three miles east of U.S. Highway 77. Wetlands are formed by the creek on this tract.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-1 and 2 apply.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. This tract would not be available for lease.

NORTON COUNTY

T. 4 S., R. 21 W.,
Sec. 7, W1/2SW1/4; 160 acres
Sec. 18, N1/2N1/2. 158 acres
Tract Total= 318 acres

These tracts together with an adjoining 80 acres are an unleased tract located on an unnamed tributary to Big Dutchman Lake. Wetlands occur on this tract formed by the stream.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-2 applies.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. This tract would not be available.

OSAGE

T. 16 S., R. 15 E.,
Sec. 11, Lot 1, E1/2NW1/4. 110 acres

This tract is adjacent to and may be partially contained within the boundary of Pomona Lake (5 miles east and 3 miles north of Osage City). Pomona Lake and an unnamed tributary of Coyote Creek have contributed to the presence of a floodplain and wetland habitats on this tract.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-1 and ORA-2 would apply.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. This tract would not be available for lease.

PHILLIPS COUNTY

T. 1 S., R. 17 W.,
Sec. 8, N1/2E1/4, S1/2SW1/4NE1/4.
100 acres

Located one mile south of Nebraska and three miles east of U.S. Highway 183, this tract sits on an unnamed tributary of Crystal Creek. Wetlands occur on this tract.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-2 applies.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. This tract would not be available for lease.

REPUBLIC COUNTY

T. 2 S., R. 5 W.,
Sec. 12, W1/2SE1/4, SE1/4SE1/4.
110 acres

This unleased tract lies in the floodplain of the Republican River two miles south of the town of Republic.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-1 applies.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. This tract would not be available for lease.

RILEY COUNTY

Tract 1.
T. 10 S., R. 7 E.,
Sec. 15, N1/2SW1/4. 80 acres

This unleased tract lies on the head waters of an unnamed tributary of Wildcat Creek one mile west of the City of Manhattan. The tract is located in the floodplain of the creek and wetlands occur at this site.

Tract 2.
T. 11 S., R. 6 E.,
Sec. 13, M&B; 50 acres
T. 11 S., R. 7 E.,
Sec. 18, M&B. 27 acres
Tract Total= 77 acres

This unleased tract is located in the floodplain of the Republican River one mile south of the town of Ogden and is adjacent to Fort Riley. The river forms a wetland at this location. The surface of this public land tract is in the process of being patented to the KDWP. The KDWP has identified this tract as having valuable wildlife resources and has requested that no surface disturbing

activities be allowed.

The RMP alternative selected would result in:

ALTERNATIVE A. These tracts would be available for lease. ORA-1 and ORA-2 applies.

ALTERNATIVE B. No change from Alternative A except ORA-4 would apply to Tract 2.

ALTERNATIVE C. This tract would not be available for lease.

SALINE COUNTY

T. 15 S., R. 3 W.,
Sec. 19, M&B (Leased). 121 acres

T. 15 S., R. 4 W.,
Sec. 24, M&B (Unleased). 100 acres
Tract Total= 221 acres

These adjoining tracts are located on the Missouri Pacific Railroad right-of-way along an unnamed creek near the town of Smolan. The creek forms wetlands which encompass both tracts.

The RMP alternative selected would result in:

ALTERNATIVE A. The unleased parcel would be available for lease. Should the leased parcel become available, ORA-2 would apply to both.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. This tract would not be available for lease.

SCOTT COUNTY

Scott County contains 540 acres of split-estate minerals within five tracts, two of which posses surface values needing protection greater than provided by STC.

Tract 1.
T. 20 S., R. 31 W.,
Sec. 20, NE1/4, N1/2SW1/4. 240 acres

This tract lies approximately 14 miles south-southeast of Scott City, and seven miles east of U.S. Highway 83. This area of Kansas contains numerous intermittent (playa) lakes which are important for migrating waterfowl during the fall and spring. This tract lies within a playa lake. A portion of the NWNE is upland. This tract is unleased.

Tract 2.
T. 16 S., R. 33 W.,
Sec. 24, NW1/4NW1/4. 40 acres

Located 12 miles north of Scott City, Tract 2 is adjacent to state designated critical habitat for the Scott riffle beetle, a species classified as threatened by the KDWP.

The RMP alternative selected would result in:

ALTERNATIVE A. These tracts would be available for lease. ORA-1 and ORA-2 apply to Tract 1.

ALTERNATIVE B. Same as Alternative A. In addition, ORA-3 would apply to Tract 1. A season of use restriction from October 15, through March 1, on Tract 1 would minimize oil and gas drilling activities on the uplands from harassing migrating birds. LN-1 would apply to Tract 2.

ALTERNATIVE C. These tracts would not be available for lease.

SEWARD COUNTY

Seward County contains over 1,063 acres in 20 tracts over half of which are leased. Several tracts within the county provide habitat or contain surface resources worthy of additional protection.

Tract 1.
T. 33 S., R. 32 W.,
Sec. 25, SW1/4SW1/4; 40 acres
Sec. 26, SE1/4SE1/4. 40 acres
Tract Total= 80 acres

This tract is located 10 miles northeast of the city of Liberal on U.S. Highway 54, and adjacent to the Cimarron River which has been designated by the KDWP as critical habitat for the Arkansas darter, a state listed threatened species.

Tract 2.
T, 34 S., R. 31 W.,
Sec. 7, Lot 2, SE1/4NW1/4. 78 acres

This leased tract of split-estate minerals is located on the headwaters of an unnamed tributary of the Cimarron River about nine miles northeast of the city of Liberal. A wetland formed by the tributary occurs at this location.

Tract 3.
T. 33 S., R. 32 W.,
Sec. 35, SE1/4SW1/4, SW1/4SE1/4;
NW1/4NW1/4. 120 acres

These unleased tracts within the same section possibly contain habitat for the longnose snake, a state listed threatened species. This section is located six miles southwest of the town of Kismet on U.S. Highway 54.

Tract 4.
T. 31 S., R. 34 W.,
Sec. 21, NE1/4NW1/4. 40 acres

This leased tract located in the Cimarron River floodplain three miles south of the point where U.S. Highway 56 crosses the river, contains a wetland. The river has been designated critical habitat by the state of Kansas for the Arkansas darter, a state listed threatened species.

Tract 5.
T. 33 S., R. 31 W.,
Sec. 32, NE1/4NE1/4, SE1/4SE1/4.
80 acres

These leased tracts are located four miles south of the town of Kismet and are situated on the headwaters of an unnamed intermittent tributary of the Cimarron River. Both parcels have been classified as floodplains and contain wetlands.

Tract 6.
T. 35 S., R. 31 W.,
Sec. 9, W1/2NE1/4. 80 acres

Tract 6 lies 11.5 miles east of Liberal, Kansas. The surface of this public land tract is in the process of being patented to the KDWP. The KDWP has identified this tract as having valuable wildlife resources and has requested that no surface disturbing activities be allowed.

<u>The RMP alternative selected would result in:</u>

<u>ALTERNATIVE A.</u> These tracts would be available for lease. ORA-1 would apply to Tracts 3, 4, and 5. ORA-2 would apply to Tracts 2-5.

<u>ALTERNATIVE B.</u> Same as Alternative A. In addition, LN-1 would apply to Tracts 1, 3, and 4 and ORA-4 would apply to Tract 6.

<u>ALTERNATIVE C.</u> These tracts would not be available for lease.

SMITH COUNTY

T. 2 S., R. 11 W.,
Sec. 14, SW1/4. 160 acres

This unleased tract is located on White Rock Creek and along U.S. Highway 281 approximately four miles north of the town of Lebanon. Wetlands and riparian areas occur on this tract.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-2 would apply.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. This tract would not be available for lease.

STANTON COUNTY

T. 29 S., R. 43 W.,
Sec. 15, SE1/4SW1/4. 40 acres

Located six miles west of the town of Manter and three miles north of U.S. Highway 160, this unleased tract contains wetlands formed by Bear Creek, an intermittent stream.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-2 would apply.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. This tract would not be available for lease.

WABAUNSEE COUNTY

T. 10 S., R. 10 E.,
Sec. 10, Lot 11; 1.3 acres
Sec. 15, Lot 13. 3.7 acres
Tract Total= 5.0 acres

This tract is located in the floodplain of the Kansas River about one-half mile east of the point where Kansas State Highway 99 crosses the river. The Kansas River, in the area of this tract, has been identified as providing habitat for the bald eagle, a Federally listed threatened species. This tract contains wetland areas.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-1 and ORA-2 would apply.

ALTERNATIVE B. Same as Alternative A. In addition, LN-1 would apply,

ALTERNATIVE C. This tract would not be available for lease.

WALLACE COUNTY

Wallace County contains over 989 acres of split-estate minerals in six unleased tracts. Half of these tracts possess surface values or resources which would require protection greater than provided by STC should they be leased.

Tract 1.
T. 11 S., R. 40 W.,
Sec. 20, E1/2NE1/4, W1/2. 400 acres

Located approximately two miles west of Kansas State Highway 27 and 13 miles north of the town of Sharon Springs, this tract contains wetlands formed by an unnamed intermittent tributary of Turkey Creek.

Tract 2.
T. 15 S., R. 38 W.,
Sec. 32, SE1/4. 160 acres

Tract 2, located approximately 16 miles southeast of the town of Sharon Springs, lies in the southeast quarter of the county, an area designated by the KDWP as critical habitat for the western green toad a state listed threatened species.

Tract 3.
T. 11 S., R. 43 W.,
Sec. 12, NE1/4. 160 acres

Located approximately 21 miles northwest of the town of Sharon Springs, nearly on the Colorado state line, Tract 3 contains a wetland formed by an unnamed intermittent tributary of the North Fork of the Smoky Hill River.

The RMP alternative selected would result in:

ALTERNATIVE A. These tracts would be available for lease. ORA-2 would apply to Tracts 1 and 3.

ALTERNATIVE B. Same as Alternative A. In addition, LN-1 would apply to Tract 1.

ALTERNATIVE C. These tracts would not be available for lease.

WASHINGTON COUNTY

T. 1 S., R. 1 E.,
Sec. 11, SE1/4. 160 acres

This unleased tract is located on the headwaters of an unnamed tributary of Bowman Creek, approximately three miles east of the town of Manhaska one and one-half miles south of Nebraska. Wetlands occur on this tract.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-2 would apply.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. This tract would not be available for lease.

WICHITA COUNTY

T. 16 S., R. 37 W.,
Sec. 24, S1/2. 320 acres

This unleased tract is located along Kansas State Highway 25 ten miles north of the town of Leoti, on an unnamed intermittent tributary of Ladder Creek. Wetlands have been identified as occurring on this tract.

The RMP alternative selected would result in:

ALTERNATIVE A. This tract would be available for lease. ORA-2 would apply.

ALTERNATIVE B. No change from Alternative A.

ALTERNATIVE C. This tract would not be available for lease.

CHAPTER THREE
AFFECTED ENVIRONMENT

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AFFECTED ENVIRONMENT

INTRODUCTION

This chapter presents a description of the physical features of the planning area as well as descriptions of the environmental components that could be impacted by implementing the alternatives.

Physical Features

The physical features of the state of Kansas include its location, size, topography, and climate. These features influence and help form the environmental components which may be influenced by human actions. The physical features themselves are not subject to significant influence by mankind.

Location & Size

Kansas is situated in the center of the contiguous forty-eight states. In fact, the geographic center of the country is located near the town of Lebanon in Smith County. The state is the 14th largest and covers a rectangular area 208 miles north and south by 411 miles east and west of approximately 82,264 square miles or roughly 52,648,980 acres. Kansas is bordered on the south by Oklahoma, the west by Colorado, the north by Nebraska, and the east by Missouri. Generally speaking, the state lies in the region known as the Great Plains, and has a rich variation of climate, terrain, soil, native plants and animals.

Topography

While Kansas is characterized as entirely flat, nothing could be further from the truth. The state rises from 700 feet above sea level in the east to over 4000 feet in the extreme west. The surface changes from the wooded, rolling hills of eastern Kansas to the high plains in the west. Almost all of Kansas lies within two large geographic regions of the U.S. Eastern Kansas is part of the region known as the Central Lowlands while western Kansas is part of the Great Plains. A third small area in the southeast is included in the Ozark Plateau, which extends into Kansas from Missouri and Oklahoma.

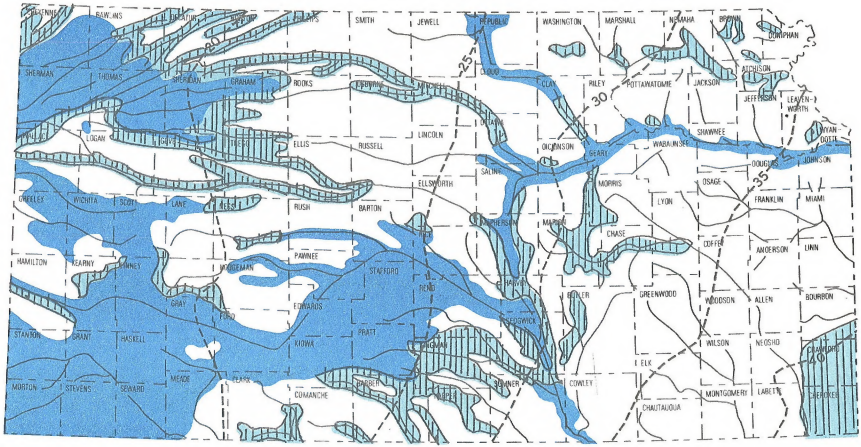
The Central Lowlands are divided into two regions. The region north of the Kansas River and east of the Blue River is made up of rolling hills and valleys, while the area south of the Kansas River is carved into a series of escarpments. These long cliffs or hills range in height from 50 feet to more than 400 feet. The most well known and highest series of these hills are known as the Flint Hills, and are situated in the western part of this region.

The Great Plains region is the flatter portion of Kansas and the most widely known. There the relief is much less than in the Central Lowland. However, in some areas, larger streams have carved valleys that are as deep as 300 feet.

Climate

Kansas averages 27 inches of precipitation each year. The southeastern area of Kansas receives approximately 40 inches while the western portions experience less than 20 (Precipitation Map page 102). More than 70 percent of the states annual precipitation occurs as rain between April 1 and September 30. Snowfall in the state averages about 17 inches each year. Kansas has a reputation as a windy state and the reputation is justified. Dodge City is the windiest city in the U.S. with average wind speeds of 14 mph.

General Availability of Ground Water and Normal Annual Precipitation in Kansas



Kansas has cold winters and warm summers. January temperatures average 30 degrees F., while July temperatures average 74 degrees F.

Environmental Components

The environmental components that could be affected include air quality, water, soils, vegetation, wildlife, cultural resources, paleontological resources, mineral resources, social and economic conditions.

1. Air Quality

This discussion of existing air quality conditions for the entire state of Kansas is extremely general.

Ambient air pollutant levels would normally be expected to be below the measurable limits in the undeveloped rural areas of the state. Areas thought to be subject to decreasing air quality would include the immediate vicinities of industrial developments (power plants, factories etc.) and within towns and cities (automobile exhaust, wood smoke etc.).

Particulate matter concentrations are expected to be higher near industrial areas, towns and along unpaved roads. During periods of drought, dust storms are common and would also contribute to the total suspended particulate levels.

2. Water Resources

Water resources descriptions are divided into surface waters and subsurface or ground waters. All water resources information has been extrapolated from various COE, US Geological Survey (USGS), Kansas Geological Survey (KGS) and BOR documents (listed in References).

Surface Water

Kansas has five river systems and more than 50,000 streams large enough to be named. The Missouri, Kansas (commonly known as the Kaw) and Arkansas rivers were considered navigable in the past. However, only the Missouri river is officially classified as navigable. All the rivers and streams within the state are included in two distinct river basins, the Missouri River Basin and the Arkansas River Basin. The river basins form the administrative areas of the U.S. Army COE Districts for civil works. There are twenty-five federal reservoirs in Kansas and 48 state administered lakes.

All of the Federal reservoirs are under the jurisdiction of either the Army COE, or the BOR. The majority (over 80 percent) are located in central and eastern Kansas, and were built by the COE for flood control. Those in the west were built by BOR for irrigation and flood control. Recreation is an important use of all these reservoirs, but most especially those in the east. Some of the east Kansas reservoirs built by the COE have a unique management situation. During construction, the state of Kansas contributed funds to build extra storage capacity beyond flood control needs. Flood waters stored in these "extra capacity pool" reservoirs are then sold to private irrigators by the Kansas Water Office, a state agency.

Surface water in Kansas can be further divided into two categories: (1) water that flows into the state from outside, and (2) water that originates within the state boundaries.

The major river in Kansas that flows into the state is the Arkansas, which originates in the Colorado Rockies. Within Kansas, its tributaries are the Pawnee, Ninnescah, and Walnut Rivers. The major "in state" river is the

Kansas, whose main tributaries are the Republican, Big Blue, Smoky Hill, Solomon, and Saline Rivers. The Smoky Hill River has some watershed in eastern Colorado, while the Republican and Big Blue have watersheds in Colorado and Nebraska. Important streams in the southeast corner of the state include the Neosho, Marias de Cygnes, and Verdigris Rivers. Average annual runoff in Kansas varies from about 0.2 inches in the west to almost 10 inches in the southeastern corner.

Flooding does occur throughout the state. Frequency of flooding varies widely, but generally increases from west to east. Flood damages vary according to floodplain use and extent of development. Many towns and cities are located on floodplains and have historically experienced flood damages. Floodplains in the eastern half of the state are mostly prime farmland, and often suffer severe agricultural flood damage.

Surface water quality is generally acceptable for recreation, irrigation, and raw municipal or industrial supplies.

Groundwater

Groundwater, developed from large subterranean sand and gravel deposits, can be found throughout most of the state (map page 102). This water source is responsible for the economic importance of agriculture to a significant portion of Kansas. Groundwater yields of greater than 500 gallons per minute cover a large area and, considered in combination with center pivot irrigation practices, help explain Kansas' ranking among the top 10 or 15 of the states in national agricultural production.

There are nine significant developed aquifers in the state: The Ogallala, the Dakota, the Great Bend Prairie alluvium, and the "Equus Beds" alluvium, which are located in the west and central parts of the state; the Glacial Drift, Chase-Council Grove, Douglas, and the Arbuckle Group (Ozark), located in the east. Statewide, water is found in alluvium along the major river valleys. The Ogallala, Great Bend Prairie, and "Equus Beds" are important for irrigation. The other aquifers are used mostly for domestic, municipal, and stockwater supplies.

By far the most important aquifer in Kansas is the Ogallala. It underlies, roughly, the western one-third of Kansas and is being used to irrigate over 2 million acres of land in 24 western counties. These acres represent about 84 percent of the total irrigated land in the state. Unfortunately, water extraction from the Ogallala is far greater than the rate of recharge; the water table is declining. As water levels fall in the Ogallala, some irrigators have sought water in underlying aquifers. Although these aquifers show some promise, their yields are small compared to the Ogallala, and in some cases, the quality is so poor as to be unusable. The quality of ground water in Kansas varies greatly.

The Wellington formation, which underlies much of central Kansas, contains a brine producing aquifer. This aquifer introduces salt into streams where their valleys intercept the outcrop. North of Wichita, brine from the Wellington (as well as water from the Arkansas River) is leaking into the "Equus Beds" aquifer and causing a deterioration of water quality. In the western part of the state, Permian and Pennsylvanian rocks underlay the Ogallala and could contain some water of very poor quality. Where these aquifers are under artesian pressure, wells drilled into them have the potential for bringing this water to the surface or leaking it into overlying fresh water aquifers.

3. Soils

Kansas' varied climate and topography have combined to produce loamy fertile soils suitable for agricultural use. Generally, the soils of the state can be described by color. The black or dark brown soils of the northeastern part of the state are recognized as the most productive while a gradual shading change to light brown and reddish brown are found in the southwest. Soil depths vary throughout the state but generally correspond to the color with the darker soils generally being the deepest.

The soils of the Flint Hills are very thin and are considered to be only suitable for grass production.

Soils data is furnished by the USDA, Soil Conservation Service (SCS), Kansas State Office. They have published soil survey information by counties which provides site specific soils information for all locations in the county.

Over 95 percent of the soils in the state of Kansas were developed under native grass prairies. The prairies helped develop rich soils for almost 28.8 million acres of cropland, 2.7 million acres of improved pasture, and most of the Kansas urban land. The remaining 16.3 million acres remaining as prairies in Kansas is used as rangeland.

The three major rangeland areas remaining in Kansas are: (1) The Flint Hills extending from Washington County in the north to Cowley and Chautauqua Counties in the south; (2) The Gyp Hills (Red Hills or Cedar Hills) located mostly in Barber, Clark, and Comanche Counties; and (3) the Smoky Hills which include the Dakota sandstone, Greenhorn limestone, and Chalk Bluff areas which extend from north central Kansas west along the major rivers.

Erosion susceptibility of Kansas soils varies throughout the state, with susceptibility to water erosion highest in the east, and susceptibility to wind erosion highest in the west. Areas of special erosion concern would be slopes exceeding 40 percent, and the fine light soils found in the mid-west and western part of the state, particularly sand dune areas. These areas would be most susceptible to erosion, and hardest to stabilize. They would be particularly sensitive to soil disturbing activities such as oil and gas development. Soil erosion and sediment yield rates will be greater as the area of disturbance increases.

4. Vegetation

A.W. Kuchler (1964) has assigned approximately eight categories of potential vegetation to Kansas. Kansas is dominated by Kuchler's bluestem-grama prairie but also contains elements of the sandsage-bluestem prairie, grama-buffalo grassland, bluestem prairie, wheatgrass-bluestem-needlegrass prairie, cross timbers, northern floodplain forest, and oak-hickory forest.

Nearly 200 kinds of grasses and over 114 species of trees and shrubs grow in Kansas. Tall grasses such as bluestem grow in the eastern portions of the state. Shorter grasses such as blue grama and buffalo grass are found in the west. Diverse deciduous forests occur in eastern Kansas while wooded areas are restricted to riparian zones in the west.

The southwest region of Kansas is predominated by Kuchler's gramma-buffalo grass potential vegetation association with elements of the bluestem-grama prairie, sandsage-bluestem prairie and northern floodplain forest.

Kuchler's vegetation associations represent ecological potential.

However, the ecosystems that were once found in Kansas have been altered drastically during the last 100 years due to the large scale private agriculture industry. The agriculture industry in Kansas and in particular in western Kansas, has developed intensive areas of cultivation and livestock grazing. Irrigation systems, both ditch and center pivot, have become common.

Approximately 76 percent of the land area of southwest Kansas is currently under cultivation for the production of crops (USDA 1961, 1961a, 1963, 1965, 1965a, 1968, 1969 and 1990).
The remaining lands are being utilized extensively by the livestock industry (22 percent).

Table 3-1 presents a comparison of the vegetation types occurring on the Cimarron National Grasslands (CNG) and those projected for southwest Kansas.

TABLE 3-1
TYPICAL VEGETATION OF SOUTHWEST KANSAS

Vegetation/ Habitat Type	Percent Present CNG	SW KS
Agricultural Crops	-0-	76
Short/Mid-grass	74	20
Sand Sage, Yucca	7	2
Cottonwood-willow	7	1
Stream bed (dry)	2	1

(Source USDA 1990, USDA 1990a)

Wetlands or riparian areas occur on approximately 112 of the over 400 split-estate tracts. Wetlands were identified according to Classification of Wetlands and Deepwater Habitats of the United States (U.S. Department of the Interior, Fish and Wildlife Service, 1979). These wetlands are discussed in the split-estate tract descriptions contained in Chapter Two.

5. Wildlife

The fish and wildlife species composition is as diverse as are the habitats in Kansas. Fish and wildlife species are typical of those one would expect to find in BLM's Rocky Mountain Piedmont and Great Plains physiographic regions and the above mentioned eight types of potential natural vegetation assigned by A. W. Kuchler to Kansas.

Those animal species that thrive in present day Kansas are those that have been able to adapt to changes in their habitat. Some species have even been able to extend their range as a result of the intensive agricultural activity in Kansas.

Information in Tables 3-1 and 3-2 provide an indication of the total number of species and the habitats present on the CNG and therefore in southwest Kansas (USDA, 1990). Wildlife species information from the CNG should be indicative of wildlife species which occur in the non-cropland habitats in southwest Kansas.

TABLE 3-2
WILDLIFE SPECIES OF SOUTHWEST KANSAS

Species Class	Number Species
Amphibians	10
Birds	284
Fish	16
Mammals	50
Reptiles	33
Total	393

(Source USDA 1990)

No information was found to indicate the number of species present in most southwest habitats including cropland habitats. Cropland habitats comprise approximately 76 percent of the land area present in southwest Kansas. This type of land use/habitat is not present on the CNG. Some wildlife species which

utilize the temporary habitats afforded by agricultural fields would be transients or migrants. However, there is information in the literature (Fleharty and Navo, 1983) that indicates for some species of wildlife, agricultural fields represent important sources of winter food in the form of waste grains and planted/sprouting crops such as winter wheat.

Checklist information (USDA, undated) indicates that approximately 154 species of birds utilize the various grassland habitats in southwest Kansas. This represents about 54 percent of all the bird species present in southwest Kansas (Refer to Table 3-2).

Kansas is in the Central Flyway for waterfowl migration. Approximately 27 species of ducks and 3 species of geese frequent Kansas (KDWP, 1985-1990). This is but a small percentage of the total number of migratory birds which occur in Kansas as winter transients or winter residents. Migratory bird species common to Kansas include hawks, owls, doves, shore birds, warblers and many other non-game and game species.

The split-estate tracts which encompass over 400 tracts and contain more than 73,500 acres of federal minerals underlying private surface were analyzed using information provided by KDWP (May 1987 and Aug. 1989), the USFWS (Oct. 1989 and May 1990) and the KSNHP, a division of the Kansas Biological Survey (KBS) (Aug.1989). This analysis revealed that SSS have been known to occur within one to three miles, and/or that suitable habitat possibly existed on 39 of the 400 tracts.

There are approximately 68 SSS listed for Kansas: 48 species of vertebrates, 11 invertebrates and 9 plants. These numbers are constantly changing as new species are listed or considered for listing. These SSS include those that are either state or Federally listed, candidates for listing, proposed for listing, or under investigation for listing in Kansas.

The KDWP has listing authority for state threatened and endangered animals and carries on an active program of identifying SSS, designating critical habitats and maintaining a data base for these resources. The Environmental Services Section of the KDWP processes hundreds of requests for special status species information from state and federal agencies and from private companies whose projects can fall within the purview of the KDWP's Threatened and Endangered Species Permit Program. There is no state agency currently listing plants pursuant to state laws or regulations.

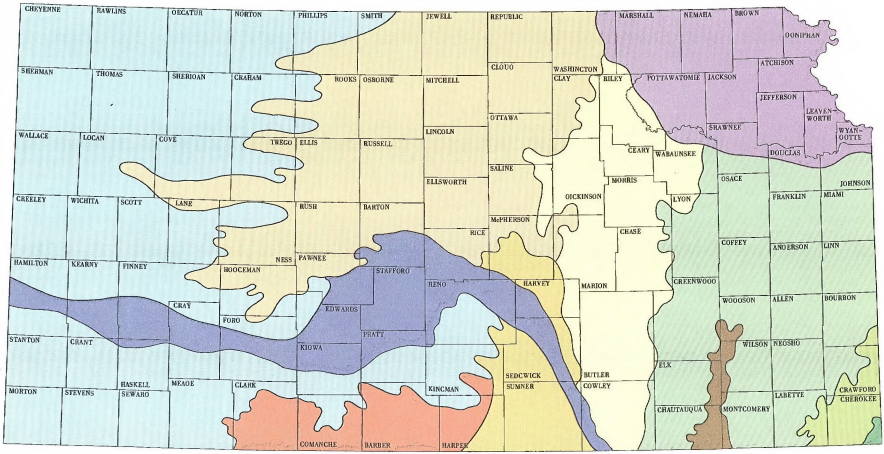
6. Cultural Resources

The cultural resources of Kansas include sites from all main cultural periods found in North America: Paleo-Indian, Archaic, Early Ceramic (Plains Woodland), Middle Ceramic (Plains Village), Late Ceramic (Proto-Historic), and Historic. These resources represent history in Kansas from modern times back through 12,000 years of human occupation. Sites from each of these cultural periods could be found on lands in Kansas with Federal mineral estate.

As of April 7, 1989 there were 8,202 cultural resource properties recorded in all 105 counties of Kansas. Most of these sites will not be affected by BLM management. Of the 66 counties containing the over 400 split-estate tracts, 35 counties have recorded 103 tracts with sites or a high probability of having sites.

For reference purposes Kansas has been divided into eleven physiographic regions or divisions, the following map shows these divisions.

Generalized Physiographic Map of Kansas



EXPLANATION

- HIGH PLAINS
- SMOKY HILLS
- ARKANSAS RIVER LOWLANDS
- WELLINGTON-MC PHERSON LOWLANDS
- GLACIATED REGION
- OSAGE CUESTAS
- FLINT HILLS UPLANDS
- RED HILLS
- OZARK PLATEAU
- CHEROKEE LOWLANDS
- CHAUTAUQUA HILLS

0 — 100 mi

Kansas Geological Survey
The University of Kansas
1930 Constant Avenue
Lawrence, Kansas 66046

The number of archeological sites found within each physiographic division as a percentage of total sites is presented on Table 3-3.

TABLE 3-3.
ARCHEOLOGICAL SITES BY PHYSIOGRAPHIC REGION OF KANSAS (PERCENTAGES)

Physiographic Region	Sites Found
1.High Plains	66.7 %
2.Smoky Hills	8.4 %
3.Arkansas River Lowlands	5.7 %
4.Wellington-McPherson Lowlands	0.0 %
5.Glaciated Region	4.5 %
6.Osage Cuestas	7.3 %
7.Flint Hills Uplands	7.4 %
8.Red Hills	0.0 %
9.Chautauqua Hills	0.0 %
10.Cherokee Lowlands	0.0 %
11.Ozark Plateau	0.0 %

(Source KS-SHPO)

Although several archeological sites are recorded or expected on Federal mineral estate, as of January 5, 1990, there are no sites listed on the National Register of Historic Places or any sites considered eligible for the National Register which are located on lands with Federal mineral estate in Kansas. A list of known archeological sites occurring on lands with Federal mineral estate is maintained by the ORA. Added to this list are land tracts of Federal mineral estate which have a high probability of having cultural resource properties.

7. Paleontological Resources

Several significant fossil beds are known in the state of Kansas. At present, there is no organization, or publication that gives a list of legal locations or locality descriptions of all the important fossil areas in the state.

Approximately 650 occurrences of megafauna locations had been recorded in Kansas by the end of 1987. Over 82 percent of the counties in Kansas have recorded extinct animal fossils, including but not limited to: bison, camel, deer, elk, horse, mastodon, mammoth, mosasaur, plesiosaur, rhinocerous, sloth, and many species of amphibians, reptiles, and plants (Kost 1987)(Williams 1975)(Willard 1948).

8. Minerals

Minerals occurring in commercial quantities in Kansas include oil, gas, coal, gypsum, salt, zinc, lead, chalk, commercial quality clays, helium, building stone, limestone and sand and gravel.

Petroleum and natural gas are the state's most economically important minerals. Oil and gas occur widely over the southwestern two thirds of the state. Coal beds are found in the southeast.

Geologically, Kansas is located on the buried southern extension of the Canadian Shield which composes the interior of North America. During geologic time, both marine and nonmarine strata were deposited to a maximum thickness of approximately 9500 feet as a veneer covering the Precambrian basement complex.

The sedimentary rocks deposited in Kansas are typical of shallow-shelf environment and consist mostly of clastics, carbonates, and evaporites that range in age from Precambrian (oldest) to Quaternary. Although all rock systems, younger than the Precambrian, are represented in the state, not all are present at any one location. The land surface slopes eastward and is discordant with the underlying regional geologic structure of pre-Tertiary formations, which dip westward except for local structures.

Although there are many smaller significant structures, the major post-Precambrian, geologic structures of Kansas are considered to be: the Hugoton Embayment-Las Animas Arch, Cambridge Arch, Central Kansas Uplift, Pratt Anticline, Salina Basin, Sedgwick Basin, Nemaha Anticline, Forest City Basin, Bourbon Arch, and Cherokee Basin. Surface expression of these features is rather limited in most instances.

The Hugoton Embankment is a northward extension of the Anadarko Basin of western Oklahoma, being a shelf-like area occupying approximately 28,600 square miles on the western one-third of the state. The northern part of the Hugoton Embayment is influenced by the Las Animas Arch, a structure in eastern Colorado that plunges to the northeast and separates the Hugoton Basin from the Denver Basin. Sedimentary rocks are about 9,500 feet thick, making the Hugoton the deepest basin in the state. The structure is obscured on the surface by rocks of Cretaceous, Tertiary, and Pleistocene ages. Most of the geologic systems are represented by strata in this basin.

The Cambridge Arch is a large, anticlinal structure, which extends from Nebraska in a northwest-southeast direction, across the border and occupies about 1000 square miles in northwest Kansas. Surface rocks are of Cretaceous and Tertiary age, and in the subsurface Precambrian is overlain by Pennsylvanian.

The Central Kansas Uplift, the largest uplift within the state, covers approximate 5,700 square miles. In most places on the structure, sedimentary rocks are less than 5,000 feet thick. In the subsurface, Pennsylvanian sediments overlie the Precambrian on the crest of the feature; and Cretaceous, Tertiary, and Quaternary occupy the surface masking the underlying structure. The Central Kansas Uplift is often referred to as a major pre-Desmoinesian post-Mississippian structure, and the name Ancestral Central Kansas Uplift is used for the early Paleozoic movement.

The Pratt Anticline extends from about central Kansas southward to Oklahoma and is known as the smallest major structure in Kansas, occupying only 1000 square miles. This anticline separates the Hugoton Embayment on the west from the Sedgwick Basin to the east. Surface rocks are of Tertiary and Pleistocene age mostly. On the crest of the structure, Pennsylvanian rocks overlie rocks of Ordovician age. Post-Precambrian sediments are about 5000 feet in maximum thickness and includes the Cambrian, Ordovician, Mississippian, Pennsylvanian, and Permian rocks.

The Salina Basin, located in north-central Kansas, is the second largest structure in Kansas, occupying 12,700 square miles. It lies east of the Cambridge Arch-Central Kansas Uplift, west of the Nemaha Anticline, and north of the Sedgwick Basin. Approximately 4,500 feet of Post-Precambrian sediments were deposited in this basin. Rock units of Cambro-Ordovician, Siluro-Devonian, Mississippian, Pennsylvanian, Permian, Jurassic, Cretaceous, and Tertiary age are present in the basin. Cretaceous rocks cover the western part of the basin surface and Permian beds cover the eastern part. The basin is expressed in the Cretaceous formations.

The Sedgwick Basin, south of the Salina Basin, is a shelf-like area which is bounded on the west by the Pratt Anticline, on the east by the Nemaha Anticline, and separated by a saddle from the Salina Basin on the north. There are about 8000 square miles in the Sedgwick basin which consists of Cambro-Ordovician, Siluro-Devonian, Mississippian, Pennsylvanian, and

Permian age rocks. The basin plunges to the north and post-Precambrian sediments are about 5,500 feet thick. Surface beds are Permian and Tertiary for the most part however; the Pleistocene covers much of the northern part.

The Nemaha Anticline, another pre-Desmoinesian, post-Mississippian structure is a rather narrow feature which is associated with faulting along the east side and trends in a north-south direction across Kansas into Oklahoma on the south, and Nebraska on the north; and separates the Salina and Sedgwick Basins on the west from the Forest City and Cherokee Basins on the east. There is structural expression along the surface that is covered by Permian and Pennsylvanian strata. On the crest, a series of Precambrian granite hills extend along the trend and are overlain by Pennsylvanian sediments. However, as with most of the other structural uplifts, the pre-Pennsylvanian formations on the flanks, are upturned and truncated. Near the Kansas-Nebraska boundary line, the granite is within 600 feet of the surface; but near the Oklahoma line, to the south, the granite is approximately 4000 feet below the land surface.

Occupying the northeast corner of Kansas, the Forest City Basin, covers about 9500 square miles. The axis of the Forest City Basin is near the Nemaha Anticline, forming a steep west dip into the basin and a gentle east dip on the east with Pennsylvanian and Permian rocks covering the surface on the southern part of the basin. Unconsolidated glacial sediments are present to the north. The subsurface strata, above the Precambrian, are about 4000 feet thick. The maximum stratigraphic section is near the western flank and consists of Cambro-Ordovician, Siluro-Devonian, Mississippian, Pennsylvanian, and Permian systems.

The Bourbon Arch is an indistinct, pre-Desmoinesian, post-Mississippian structure that trends in an east-westward direction and separates the Forest City and Cherokee Basins. Aerial extent is approximately 3000 square miles. Surface rocks are of Pennsylvanian and Permian age. Subsurface strata are about the same as the Forest City Basin.

The Cherokee Basin, located south of the Bourbon Arch and east of the Nemaha Anticline, is a shallow sedimentary basin which developed on the old Chautauqua Arch (an extension of the Ozark Uplift), and covers nearly 8,400 square miles.

The feature was formed during Pennsylvanian time and has approximately 3,500 feet of post-Precambrian rocks at the thickest locality. In the extreme southeast part, Mississippian rocks are exposed on the surface with Pennsylvanian and Permian sediments present on the remaining surface area. In the subsurface, Pennsylvanian strata overlie the Cambrian.

The Midcontinent Rift System is a major Precambrian structure in Kansas which is estimated to have developed 1100 million years ago and preceded the formation of the above discussed features. The rift is rather wide and extends from central Kansas (near Abilene, Kansas) northeastward for 800 miles across Nebraska, Iowa, Minnesota, and Wisconsin to Lake Superior. There is evidence that it continues on in a southeast direction through the Michigan Basin and possibly further. Due to the fact that the rift is a deep basement feature, there is rather limited information available.

9. Socio-Economics

Kansas population of approximately 2.4 million is mostly urban, with seventy percent of the states' population residing in cities and towns. While over 90 percent of the states land is in farms, the large size of typical Kansas farms and modern mechanized farming methods have resulted in relatively few people residing in rural areas.

The states' economy is based upon a combination of agricultural production, manufacturing, service industries, and mineral extraction. Kansas has ranked among the top 10 or 15 states in agricultural production and minerals extraction annually. Kansas is the leading wheat producing state; over one sixth of the Nations wheat is produced on Kansas farms.

The oil and gas industry is a major contributor to the Kansas economy. Over 350,000 oil and gas wells have been drilled within the state since 1873. During that time approximately 5 billion barrels of oil and over 28,658,805 MMCF of gas have been extracted within Kansas.

On January 01, 1988, there were 45,801 oil wells and 13,091 gas wells reported operating within Kansas. The oil wells extracted approximately 59,177,361 barrels with an approximate well head value of $12.66 per barrel and the gas wells provided approximately 450,000 MMCF with an average value of $1.68 per MCF for a combined oil and gas well head value exceeding $ 1.5 billion.

The oil and gas industry directly employs over 11,000 persons within Kansas. These people work at jobs in oil and gas exploration, development, and refining. A comparison of recent historical trends in oil and gas employment for Kansas in relation to the surrounding states and the U.S. as a whole is presented on Table 3-4.

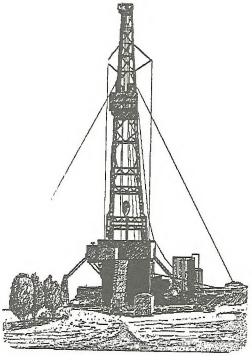


Table 3-4

Comparative Direct Oil and Gas Industry Employment

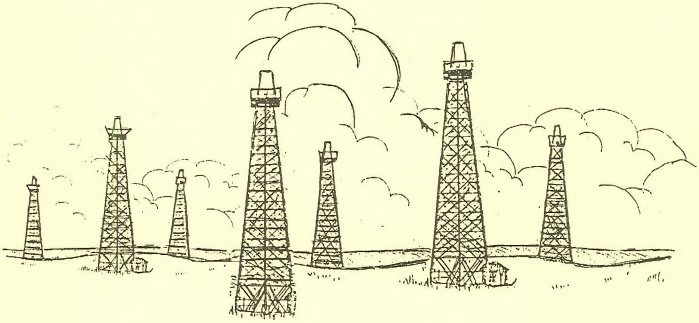
	Kansas		Surrounding States		U.S. Total	
	Thousands of Jobs	Percent Change	Thousands of Jobs	Percent Change	Thousands of Jobs	Percent Change
Exploration and Production						
1973	7.8	--	154.8	--	276.0	--
1981	17.3	+122	429.0	+177	673.9	+144
1988	9.0	- 48	247.0	- 42	401.7	- 40
Refining						
1973	3.2	--	57.4	--	136.1	--
1981	4.6	+ 45	61.6	+ 7	172.3	+ 27
1988	2.1	- 55	42.4	- 31	121.8	- 29

(Source, Strategic Analysis of the Oil and Gas Industry in Kansas, Arthur D. Little. 1990)

As can be seen from the table, Kansas has lost over 10,000 oil and gas jobs during the recent ebb in the oil and gas market. The majority of these lost jobs were associated with the exploration and development end of the industry. This portion of the oil and gas industry normally consists of non-Kansas based drilling, exploration and pipeline companies who do not generally hire from the local community.

Additionally, thousands of retail and service jobs within Kansas are dependent on a supply of oil and/or gas. These jobs will not be subject to our analysis, in that direct retail and service industry employment would necessarily utilize oil and gas regardless of the source of the oil and gas, and thus would not be influenced by our alternatives.

CHAPTER FOUR
ENVIRONMENTAL CONSEQUENCES



CHAPTER FOUR
ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This chapter analyzes the impacts which would result from implementing any of the three alternative Resource Management Plans (RMP). The alternatives under consideration are Alternative A, in which there would be no change from the present management; Alternative B, which would provide management additional surface protection measures; and Alternative C, which would eliminate oil and gas leasing.

This chapter also analyzes the cumulative impacts resulting from Continuing Management Guidance which are common to all alternatives, and would likely occur no matter which alternative is selected. This chapter further analyzes the anticipated impacts of the issue as it relates to each of the alternatives.

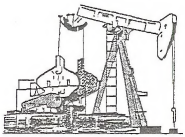
Knowledge of the area and professional judgement, based upon observation and analysis of similar conditions and responses in similar areas, have been used to infer environmental impacts where data are limited. The "long-term" for purposes of the analysis in this document is 15 years and the "short-term" is 5 years.

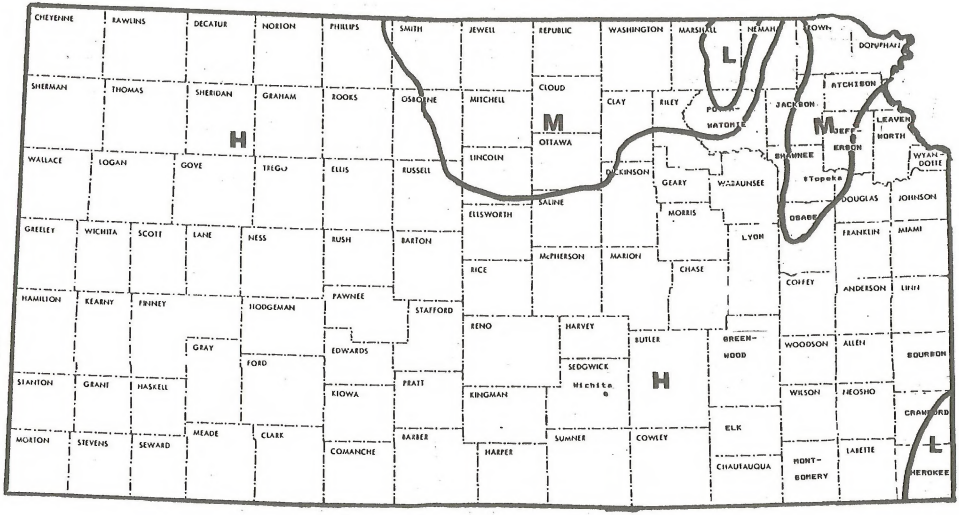
The analysis of unavoidable adverse impacts, short-term versus long-term productivity, and irreversible and irretrievable impacts is discussed, by alternative, in the impact analysis for each resource rather than under a separate heading. If irreversible and irretrievable impacts or short versus long-term productivity are not discussed in a given section, there are none.

In order to accomplish an analysis of the cumulative impacts of Federal oil and gas leasing and development within Kansas, it was necessary to develop certain assumptions concerning the level of activity that may occur over the life of the RMP (15 years).

BLM prepared an evaluation of the potential for the occurrence and development of Federal oil and gas within the state of Kansas. This evaluation, called the Fluid Minerals Assessment (FMA), available for review at both the Tulsa District and the ORA offices, contains the Baseline Reasonable Foreseeable Development (RFD) scenario. The RFD scenario evaluates historic oil and gas activity and presents this as trends and projections. The RFD assumptions specifically dealing with the number of Federal wells which could be expected to be drilled, area of disturbance and well distribution were used in developing the impact analysis of each alternative.

Another product of this evaluation is the Oil and Gas Occurrence and Potential Map (Page 115), which displays the areas in the state where this oil and gas activity will likely take place. A summary of lands available for leasing under the Preferred Alternative (Alternative B) based upon development potential and differentiated by management category, is presented on Table 4-1.





OIL AND GAS

OCCURENCE AND DEVELOPMENT POTENTIAL

H High Potential for Occurence and Development

M Moderate Potential for Occurence and Development

L Low Potential for Occurence and Development

TABLE 4-1

ACRES OF LAND AVAILABLE FOR LEASING AND DEVELOPMENT BY MANAGEMENT AND DEVELOPMENT POTENTIAL CATEGORY FOR KANSAS (Excluding Morton and Stevens counties) AS OF 1990 FOR THE PREFERRED ALTERNATIVE (B)

MANAGEMENT CATEGORY	LOW POTENTIAL	MODERATE POTENTIAL	HIGH POTENTIAL	TOTAL
OPEN:	48	2,381	112,238	114,667
OPEN: NSO, ND,DD,ELEV.	-0-	114,671	366,665	481,336
CLOSED: Discretionary	-0-	-0-	-0-	-0-
CLOSED: Non-discretionary	-0-	-0-	101,400	101,400

(Source:BLM)

OIL AND GAS LEASING AND DEVELOPMENT

The following assumptions were used to analyze each alternative:

1. Oil and gas drilling activity will slowly increase in Kansas over the next 15 years. As reserves are depleted, a stable demand will result in a need for more discoveries.

2. The percentage of new oil and gas well starts on Federal minerals will continue to be less than one percent of total wells drilled in Kansas. Federal minerals make up less than 1.5 percent of mineral ownership within the state and do not always occur in productive areas.

3. Drilling activity on Federal minerals will occur within existing fields or as an extension (within 2 miles) of these fields. The majority (more than 50%) of wells projected for Alternatives A and B will be drilled on lands already under lease (as of 1990). Tracts in or near the large western gas fields would continue to be where the majority (90%) of new wells will occur.

4. If leased, isolated tracts of Federal minerals of less than 40 acres in size would not be drilled except as a last resort by a prudent operator (small tracts are normally grouped with other developed tracts into a communitization agreement).

5. The laws and regulations pertaining to Federal minerals management as well as BLM policies and procedures will not change substantially over the next 15 years.

6. All lease terms, conditions and stipulations will be adhered to and will be effective in mitigating potential impacts.

7. Reclamation procedures will be completed and will be successful.

The baseline RFD scenario would apply to Alternative A and Alternative B. Therefore, this development scenario would be expected with no change in current management as well as with an increase in environmental protection at the lease stage. As the preceding assumptions would indicate, the differences between the RFDs for the three alternatives are minor.

As presented on Table 4-2, the Alternative A (Baseline) RFD estimated that approximately 134,000 acres of Federal minerals would be under lease by the year 2005. Alternative B is expected not to change the number of acres leased but may result in inconveniences and additional costs to operators in conducting lease operations and may reduce bonus bids received on parcels offered for lease. At the current lease expiration rate of approximately 1000 acres per year, Alternative C will result in a reduction of approximately 15,000 acres of Federal leases for the same period.

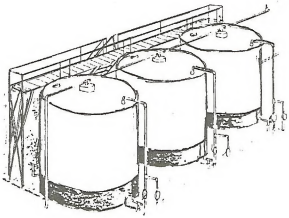
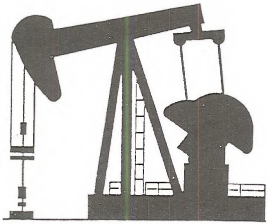


TABLE 4-2
ESTIMATED FEDERAL OIL AND GAS UNDER LEASE IN KANSAS (Excluding Morton and Stevens Counties) BY ALTERNATIVE THROUGH THE YEAR 2005 IN ACRES

Alternative	Leased in 1990	Leased in 2005
Alt. A. Continuation of Present Management	70,000	134,000
Alt. B. Intensive Surface Management	70,000	134,000
Alt. C. No Leasing	70,000	55,000

(Source: BLM)



The baseline RFD estimates that an average of 20 Federal oil and gas wells will be completed per year in the planning unit over the next 15 years (Table 4-3). This projection is based upon drilling trends established over the past decade.

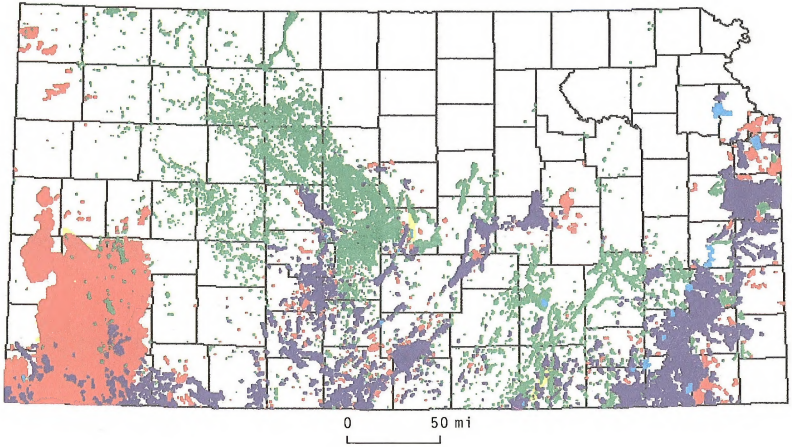
TABLE 4-3.
OIL AND GAS DRILLING TRENDS IN KANSAS (Excluding Morton and Stevens Counties) PROJECTED THROUGH THE YEAR 2005

YEAR	TOTAL O&G WELLS	FED.* O&G WELLS	AVE. $ PER BBL. OIL	AVE. $ PER MCF GAS
1979	3,937	19	12.64	1.18
1980	5,327	24	21.59	1.59
1981	6,865	25	31.77	1.98
1982	9,166	25	28.52	2.46
1983	7,406	25	26.19	2.59
1984	7,451	25	25.88	2.66
1985	7,219	25	24.09	2.51
1986	4,185	21	12.51	1.94
1987	3,161	15	15.41	1.71
1988	3,098	15	12.64	1.68
PROJECTIONS				
1990	3,000	15	15.00	1.70
1995	4,000	20	20.00	?
2000	4,500	25	20.00	?
2005	5,000	29	20.00	?

(Source:BLM)

Federal wells are most likely to be drilled in western Kansas in the area of current active gas fields as displayed on the following map. Federal oil and gas in this part of the state (outside of the Cimarron National Grasslands in Morton and Stevens counties) underlies split-estate tracts, the majority of which are currently under lease. It is expected that existing leases in the western Kansas gas fields, as well as unleased tracts of split-estate in these same fields, would be the site of future well developments. These split-estate tracts have been evaluated and discussed

Oil and Gas Fields in Kansas



in Chapter 2 by alternative. The number and location of anticipated wells will be the same for both Alternative A and B. The additional stipulations applied under Alternative B would not reduce anticipated activity but would control timing of lease operations and could prove costly to operators on over 53,000 acres. As oil and gas fields are depleted, oil and gas drilling activity would decrease under Alternative C. As existing leased acreage is reduced by non-production, fewer wells would be drilled to hold depleted fields.

Land surface needed for an oil and gas well site varies somewhat with the well location, depth, and type of equipment used to drill the well. Drill sites usually range from one to three acres in size, with deeper wells requiring more area for pipe racks, reserve pits, etc. The estimated average size of a drill pad in Kansas for the purpose of this planning effort is two acres.

Deep wells may require a year or more to drill, whereas, shallow wells take only a few days. Based upon the information presented in the RFD, the assumption is made for planning purposes that most Federal wells will be completed in a short time (3-4 weeks) with adequate time for re-vegetation or rehabilitation during the first year.

Producing oil wells, particularly flowing wells, require a smaller area than drilling sites and pumping wells; gas wells need even less surface area, due to less production equipment. Completed wells with tank batteries for separating liquids and storage of product occupy a half acre or less. For the purpose of this planning effort, the assumption is made that one and one-half acres of a two acre drill pad will be re-vegetated or rehabilitated during the following year. Normally, this land is returned to agricultural crop production.

Temporary access roads, 16 to 40 feet wide, are built to well locations in such a manner so that reclamation will be easier and less costly in the event of a dry hole. Usually the most direct or less costly route to a well site, is from an existing section line road. This will normally not exceed one-half mile in length. Approximately two and one-quarter acres of surface disturbance for roads are used for the purpose of this planning effort.

Gas operations involve the installation of a pipeline for collection of the gas, while oil is normally trucked from the well head. Typically, gas collection lines are placed in or along the access road, marked for safety reasons, and the road rehabilitated to as narrow a thoroughfare as possible. For planning analysis purposes, the assumption is made that rehabilitation would be completed on approximately one-half acre of the disturbed access route by the following year.

The anticipated short-term surface acres disturbed by Federal oil and gas wells in Kansas is presented on Table 4-4. The surface disturbance anticipated to be remaining following rehabilitation or re-vegetation after the first year is presented on Table 4-5. Specific rehabilitation or re-vegetation requirements will be established by the BLM at APD stage.

TABLE 4-4.
ESTIMATED SHORT-TERM SURFACE DISTURBANCE CAUSED BY FEDERAL OIL AND GAS ACTIVITIES IN KANSAS (Excluding Morton and Stevens Counties) BY ALTERNATIVE

ALT.	AVG.# WELLS PER YEAR	ACRES DISTURBED PER *WELL	TOTAL PER YEAR
Alt. A. Continuation of Present Management	20	4.25	85
Alt. B. Intensive Surface Management	20	4.25	85
Alt. C. No Leasing	10	4.25	42.5

(Source:BLM)
* Drill Pad & Access Road

TABLE 4-5
ESTIMATED SURFACE DISTURBANCE CAUSED BY FEDERAL OIL AND GAS ACTIVITY IN KANSAS (Excluding Morton and Stevens Counties) BY ALTERNATIVE FOLLOWING REHABILITATION AFTER ONE YEAR

ALT.	AVG.# WELLS PER YEAR	ACRES DISTURBED PER *WELL	TOTAL PER YEAR
Alt. A. Continuation of Present Management	20	2.25	45
Alt. B. Intensive Surface Management	20	2.25	45
Alt. C. No Leasing	10	2.25	22.5

(Source:BLM)
* Drill Pad & Access Road

Oil wells are usually drilled on 40-acre spacing and initially, gas wells are drilled on 640-acre spacing per well. Forty-acre spacing results in 16 wells per section (640 acres) and are located 1320 feet apart. Gas wells are normally drilled one per section, such as in the Hugoton Field, but poor drainage characteristics or other considerations can result in 320 or 160-acre spacing. Most oil and gas fields range in size from less than 1,000 acres to a few thousand acres, but giant fields such as the Hugoton involve many townships. On 40-acre spacing, 576 wells could be drilled in a township and have over 200 miles of roads and 200 to 300 miles of flow lines. Normally, several oil wells produce into a central tank battery. Gas wells drilled on 160-acre spacing would be 4 wells per section with approximately 2 miles of pipelines and roads.

Cumulative land use requirements associated with the above described actions are difficult to quantify. All estimates of cumulative impacts in Table 4-6 are based upon an average of 20 Federal wells drilled in Kansas per year (Excluding Morton and Stevens counties), extrapolated to the year 2005.
The estimates of cumulative surface disturbance following rehabilitation or re-vegetation occurring after the first year are presented on Table 4-7.

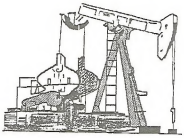


Table 4-6

ESTIMATED CUMULATIVE SHORT-TERM SURFACE DISTURBANCE CAUSED BY FEDERAL OIL AND GAS ACTIVITIES IN KANSAS (Excluding Morton and Stevens Counties) BY ALTERNATIVE THROUGH THE YEAR 2005

ALT.	TOTAL # WELLS	AVG. PAD ACRES	AVG. ROAD ACRES	TOTAL ACRES DISTURBED
A.	300	600	675	1,275
B.	300	600	675	1,275
C.	150	300	338	638

(Source:BLM)

Table 4-7

ESTIMATED CUMULATIVE SURFACE DISTURBANCE CAUSED BY FEDERAL OIL AND GAS ACTIVITIES IN KANSAS (Excluding Morton and Stevens Counties) BY ALTERNATIVE FOLLOWING REHABILITATION THROUGH THE YEAR 2005

ALT.	TOTAL # WELLS	AVG. PAD ACRES	AVG. ROAD ACRES	TOTAL ACRES DISTURBED
A.	300	150	525	675
B.	300	150	525	675
C.	150	75	262.5	337.5

(Source:BLM)

Based upon the projections of total oil and gas development in Kansas from Table 4-3, the total acreage disturbed by all oil and gas activities in Kansas will average 17,000 acres annually. The small amount of total surface disturbance attributed to Federal oil and gas development is due to 1) the small number of Federal wells expected to be drilled (less than 0.5% of the total wells drilled in Kansas each year), and 2) the fact that many Federal mineral tracts are leased for pooling purposes and are never drilled.

CONTINUING MANAGEMENT GUIDANCE

Alternative A is the application of Continuing Management Guidance. The application of leasing and development guidelines and policy to each tract of Federal mineral estate in Kansas is displayed in Chapter 2, as well as site specific application of alternatives. Continuing Management Guidance would be applicable to all alternatives and reflected in the analysis of the impacts of the alternatives on the affected environmental components.

ENVIRONMENTAL COMPONENTS

The environmental components are those that could be impacted by implementation of one or more of the alternatives.

The environmental concerns or components that are known to be affected by oil and gas development include air quality, water, soils, vegetation, wildlife, cultural resources, paleontological resources, minerals, and social and economic conditions .

IMPACTS OF ALTERNATIVE A. CONTINUATION OF PRESENT MANAGEMENT (NO ACTION)

Under Alternative A, approximately 20 Federal oil and gas wells would be drilled per year in Kansas.

1. Air Quality

Impacts to air quality will be minor, short-term, and very localized. Road and pad development would result in small amounts of fugitive dust production, vehicle exhaust emissions and associated release of carbon monoxide.

2. Water Resources

Activities associated with oil and gas development could have adverse impacts on surface and subsurface waters.

Surface Waters

Detrimental impacts could occur to surface waters such as lakes and perennial streams from increased soil erosion resulting from pad and road development within watersheds. Increased sediment and salinity loads in streams and sedimentation of reservoirs leads to lowered productivity and loss of fisheries habitats.

Waste fluids associated with oil and gas operations would present another potentially adverse impact to surface waters. Reserve pit and/or produced waters could percolate from unlined pits into nearby surface waters , possibly degrading water quality. Reserve pit fluids may contain small amounts of toxic elements used in drilling mud, such as chromium (hexavalent) and other heavy metals. Drilling fluids may also have high salt concentrations. Produced waters may also contain high concentrations of salts (particularly sodium and chloride), heavy metals, and aromatic hydrocarbons such as benzene and toluene.

Subsurface Waters

Oil and gas operators are required to protect freshwater zones by the placement of casing, cement, packers and/or other downhole devices. Improper or inadequate placement could result in adverse impacts to fresh water aquifers.

3. Soils

Oil and gas development will have a direct adverse impact on soils physically disturbed. This impact would be limited to the areas where the vegetation is removed, destroyed, or damaged by vehicular traffic. The impacts would be of two types: (1) physical removal, mixing, or burying of the surface soils, or (2) damage or destruction of soil properties in place.

The first impact would be caused by site preparation for well pads, related structures, roads, erosion, and slope failures. This would destroy the soil texture, mix the soil horizons, and cause a short-term reduction in the potential productivity of the soils.

Re-vegetation of these disturbed areas would initiate the process of creating new soil structure and soil horizons. The re-vegetation rate would vary depending on soil moisture, rainfall, and time of year of the rehabilitation effort. The initial soil productivity would be influenced by organic matter incorporated into the soil by the rehabilitation method used. Soil productivity should not be significantly different from undisturbed areas following rehabilitation.

Soil compaction, the second impact, would be caused by vehicle or machinery operation. Wide variations in the amount of compaction would be expected due to the wide weight ranges of different equipment. Soil compaction would decrease water and air infiltration into the soil profile, and thus reduce soil productivity. Where soil compaction is severe, soil vegetation productivity would be virtually eliminated in the short-term without mechanical treatment to reduce compaction.

The small amount of soil disturbance anticipated from developing 20 wells (85 acres) on Federal leases at a given year, or cumulatively for 300 wells (1275 acres) for the life of the RMP, would result in no measurable effect on total vegetative productivity within a particular soil or vegetative type.

4. Vegetation

Construction of access roads and drill pads would result in the loss of approximately 4.25 acres of vegetation per well site. With proper reclamation following drilling, this loss of vegetation would be short-term, assuming that reclamation success would take approximately two years for native grasses or one year for crops.

Although as much as 3/4 of the two-acre drill pad may be reclaimed at the time of developing a well site, additional road widening to accommodate a pipeline or power line could offset this reclamation success. Approximately 85 acres of vegetation could be expected to be lost annually due to Federal oil and gas lease development under Alternative A. Cumulative vegetation loss regardless of rehabilitation success would be approximately 1,275 acres under this alternative.

Impacts to riparian and wetland vegetation would be minimized. Under Alternative A, no oil and gas development would be allowed to result in a net loss of these vegetation types. Pursuant to 43 CFR 3101.1-1, proposed operations can be relocated up to 200 meters in the absence of a stipulation. Under Alternative A, stipulation ORA-2 could result in relocation of proposed operations in excess of 200 meters.

Executive Order 11990 and the BLM's policies regarding wetland and riparian area management and protection, govern the types of surface disturbing activities permitted in these high value resource areas.

The Hugoton Gas Field, in southwest Kansas, is where 90 percent of the BLM Federal oil and gas leasing and development is expected to occur over the next 15 years (refer to Introduction to this chapter where mineral activity is projected). This means that 18 of the projected 20 oil and gas wells to be drilled each year on Federal minerals somewhere in Kansas (other than Stevens and Morton Counties) will be drilled in the Hugoton Gas Field in southwest Kansas.

The location of the other two Federal wells cannot be predicted with any reasonable accuracy. These two wells will result in 8.5 acres of disturbance each year in unknown vegetation types. Over the 15 year life of this plan, 30 of these wells will result in 127.5 acres of impacts to the vegetation statewide in Kansas.

The Federal split estate wells projected to be drilled can be assigned to vegetation types by proportion of that type present in southwest Kansas. Proportionally, 76 percent, or 14 of the 18 Federal split estate wells drilled annually in southwest Kansas, can be projected to be drilled in cropland vegetation types. This would result in approximately 60 acres of surface disturbance. The grassland (rangeland/pastureland) vegetation type will receive 17 acres of disturbance annually from 22 percent or 4 of the 18 Federal split estate wells projected for southwest Kansas.

To comply with the requirements of the Endangered Species Act, all oil and gas surface disturbance sites would be inventoried for SSS occurrence at the operational stage on a case-by-case basis rather than at the leasing stage. This ensures that each site having the potential for threatened and endangered (T/E) plant species would be inventoried and site locations changed to avoid any discovered species.

5. Wildlife

Oil and gas leasing and subsequent development impacts wildlife both directly and indirectly. Direct impacts consist of actions that result in immediate mortality to an individual or several members of a group, such as collision with vehicles and soil compaction by machinery. Indirect impacts include actions that affect animal behavior or habitat quality or quantity.

The direct loss of habitat as a result of surface disturbance of approximately 1,275 acres due to Federal oil and gas leasing over the next 15 years would not be a significant impact to the wildlife of the state of Kansas. If oil and gas activities were concentrated in a small area over an extended period, detectable impacts may occur. The major concern would be the impact of human activity associated with the surface disturbance. The severity of impacts would depend on factors such as time of year, duration of activity, and sensitivity of species involved.

Oil and gas extraction may have an additional impact upon wildlife populations causing a particular species or population to expend more energy due to disruptions in seasonal activity patterns, habitat avoidance due to surface activities, or flight to escape. These effects are more significant during critical seasons when the animals are already under stress.

Impacts to wildlife species in the agricultural croplands would be minimal due to the temporary nature of these habitats and the seasons of availability. Seventy six percent of the habitats impacted would be agricultural fields.

The greatest number of wildlife species impacted would be in the grassland (rangeland/pastureland) habitat type. Approximately 54 percent of the bird species which occur in southwest Kansas utilize the various grassland habitats. Some wildlife species utilizing the grassland habitats would be displaced permanently from small areas even after reclamation of unneeded operating space. This is due to the long term occupancy of approximately 17 acres annually (or 255 acres over a 15 year period) by oil and gas extraction, storage, and transportation facilities. About 4 Federal wells (22 percent of the 18 Federal wells projected for southwest Kansas annually) would impact wildlife species in grassland habitats annually.

Deaths of migratory birds in uncovered oil and gas well pits and tanks have received much attention in Oklahoma and surrounding states. The USFWS is enforcing the Migratory Bird Treaty Act with respect to accidental deaths of migratory birds in oil field pits and tanks. A conservative estimate used by the USFWS is that 100,000 ducks die annually due to contact with oil or gas or its by-products in the panhandle and high plains of Texas, eastern New Mexico, western Oklahoma, southwest Kansas, and southeast Colorado. Through extrapolation it is estimated that oil field deaths of ducks alone far exceeds the legal harvest of ducks during the designated waterfowl seasons in this five state area. In addition to ducks the USFWS has documented the death of hawks, owls, eagles, shorebirds, herons, kingfishers, sparrows, meadow-larks, songbirds and other birds protected under this and other acts. These and other migratory birds have been found dead in oil field pits and tanks.

No significant impact to wildlife is anticipated under this alternative after application of appropriate mitigating measures.

The protection of SSS is a requirement of operating on a Federal oil and gas lease.

The normal sequence of events upon receiving an APD includes writing the KDWP and the USFWS for their regulatory involvement comments regarding SSS, wetlands and other significant wildlife resources they may be aware of in the vicinity of the site specific project. These two agencies provide their analyses of the likalihood of SSS occurring in the vicinity of the project, their recommendations whether site specific SSS surveys are necessary, and a list of biologists/botanists they consider qualified to perform any necessary SSS surveys. The operator/applicant is responsible for hiring a qualified biologist/botanist from the list(s), as provided and approved by the KDWP and the USFWS. The operator/applicant is also responsible for completion of the surveys and subsequent reports in a manner acceptable to BLM, KDWP, and the USFWS.

The KDWP administers a permit program for projects affecting threatened or endangered species. Their permit requirements, SSS, and the state's designated critical habitat areas are updated periodically (KDWP, 1987 and 1989). However, the SSS and their critical habitats are subject to change at a moments notice. As each APD is received, the KDWP is afforded an opportunity to provide the BLM and/or the operator/applicant with updated information on a case by case basis. The applicant/operator is responsible for satisfying the most current KDWP permit requirements at the time that an APD or equivalent mineral development application is submitted to the BLM. APD's and similar applications will not be approved by the BLM until the KDWP permit requirements have been met.

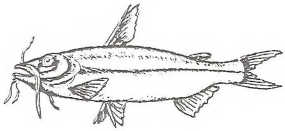
The KSNHP also receives a request from BLM for information. They query their data base for any occurrences of SSS or special areas which may be known to occur within 3 miles of the APD or other site specific BLM project.

Memoranda of Understanding (MOUs) are being developed with the KSNHP and the KDWP. These MOUs will more specifically address the above described coordination.

In the absence of pre-leasing SSS information and T/E lease notices the information and recommendations received through post-leasing agency coordination can be imposed on the applicant through Section 6 of the BLM Lease Terms. These terms appear on the back of every BLM oil and gas lease (Offer to Lease and Lease for Oil and Gas, Form 3100-11). Pursuant to Section 6 of these lease terms the company submitting the APD can be required to perform studies and/or surveys for T/E species. The need for, and results of, such surveys are coordinated with the above mentioned agencies and culminates in imposing the necessary requirements to comply with the Endangered Species Act and state of Kansas Endangered Species Laws.

Impacts to SSS or other species of wildlife will not be significant due to the measures discussed above and the relatively small number of total acres (1,275 acres) to be disturbed over 15 years of Federal oil and gas lease development.

Alternative A is not likely to affect Federal or State listed threatened or endangered plant or animal species, designated critical habitat, species proposed for listing or category one or two species under review by the USFWS.



6. Cultural Resources

There are both positive and adverse cumulative impacts upon cultural resources under Alternative A. Development of Federal oil and gas resources would mean that more areas would have undergone Class III survey inventory. This would provide more information related to past human activities in the planning area.

The cultural resources that could be impacted by oil and gas development are protected by a group of federal laws, particularly Section 106 of the National Historic Preservation Act (NHPA) of 1966. Procedures and responsibilities in this law are based on the directives outlined in the Antiquities Act of 1906, the NHPA as amended, Executive Order 11593, the Archeological and Historic Preservation Act of 1974, the Federal Land Policy and Management Act of 1976, the American Indian Religious Freedom Act of 1978, and the Archeological Resources Protection Act of 1979. Policy and management for Kansas cultural resources are drawn from these laws using BLM's 8100 manual for cultural resources.

A majority of the workload in cultural resources involves compliance with Section 106 of the NHPA. Section 106 requires the BLM to take into account the effects of oil and gas development on all cultural resources. The BLM's policy is to avoid impacts to significant cultural resources, but if impacts cannot be avoided, then mitigation may be required before approval of the undertaking. When it is determined that oil and gas development will have an effect on cultural resources, consultation is initiated with the State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation to resolve the matter on a case by case basis.

7. Paleontology

Oil and gas development could disturb surface exposure of geologic formations bearing fossils. This disturbance would be in the form of a direct impact, such as drill pad excavation or from road building. In most cases within Kansas, preservation of individual outcrops is unimportant, either because of lack of significance, or the total absence of fossils.

Under Alternative A, there would be no significant impact to the paleontological resources of Kansas after application of appropriate mitigating measures.

8. Minerals

Federal oil and gas leasing and development would occur under Alternative A.

Under Alternative A, approximately 20 wells per year will be drilled on Federal oil and gas leases.

As has been stated under the proceeding section, approximately 60,000 oil and gas wells will be drilled in Kansas over the next 15 years. The impact of total drilling operations on the mineral resources of the state would be significant, the wells would be extracting the mineral resource. The low amount of Federal oil and gas activity that results from the Federal mineral estate would not be a significant impact on the states mineral resources, however, the extraction of Federal oil and gas could be termed significant on a local level.

Extraction of oil and gas would result in an irreversible and irretrievable loss of the resources.

9. Social And Economic

Projected oil and gas development in Kansas indicates that regardless of which Federal oil and gas leasing alternative is selected as the RMP, approximately 60,000 oil and gas wells will be drilled in the state over the next 15 years.

Under Alternative A approximately 300 Federal oil and gas wells would be drilled in the same period. The relative small percentage of Federal oil and gas activity results in insignificant impacts to the economy and social structure of the state of Kansas. However, the economic and social structure of the small communities of western Kansas could be expected to be impacted by local operations on Federal minerals.

Federal oil and gas leasing and development within the RMP area would not have a significant impact on state-wide oil and gas based economics under Alternative A.

IMPACTS OF ALTERNATIVE B, INTENSIVE SURFACE PROTECTION (PREFERRED ALTERNATIVE)

1.Air Quality

Impacts to air quality under Alternative B would be the same as described for Alternative A.

2. Water Resources

Impacts to both surface and subsurface waters under Alternative B would be the same as described for Alternative A.

3. Soils

Impacts to soils under Alternative B would be the same as described for Alternative A.

4. Vegetation

Impacts to vegetation under Alternative B would be the same as described for Alternative A.

5. Wildlife

Impacts to wildlife under Alternative B would be less than those described for Alternative A. Additional stipulations (ORA-3 and ORA-4) would be included to provide both species and habitat protection. The described impact to seasonal wildlife use areas caused by human presence would be mitigated under Alternative B by application of ORA-3.

For example, a season of use stipulation, ORA-3, would protect wintering waterfowl from disturbance in areas adjacent to wetlands.

A no surface occupancy stipulation, ORA-4, would be used to protect endangered species from disturbance.

Two lease notices dealing with threatened and endangered (T/E) species have been prepared and recommended for use on mineral leases and other types of BLM leases and permits. The two lease notices recommended here involve preliminary information on T/E species in general and black-footed ferrets specifically. The KSNHP, USFWS and the KDWP provided the information used to develop these notices. A lease notice is merely an advisory tool and does not require any mandatory action.

Lease notices (LN-1, LN-2) alert the prospective bidder, applicant, and BLM personnel involved, of preliminary information indicating that additional site specific environmental analysis and agency coordination work may be necessary prior to authorizing any surface disturbing activities. However, there was not sufficient site specific information available prior to leasing to mandatorily restrict the manner in

which the lease was to be offered or developed.

6. Cultural Resources

Impacts to cultural resources under Alternative B would be the same as described for Alternative A.

7. Paleontology

Impacts to paleontological resources under Alternative B would be the same as described for Alternative A.

8. Minerals

Impacts to mineral resources under Alternative B would be the same as described for Alternative A.

9. Social and Economic

Impacts to the states' social and economic structure under Alternative B would be the same as described for Alternative A, except that;

Lease development under Alternative B could be more costly to operators due to restrictions on the location and timing of operations.

Under Alternative B, bonus bids could be less, thus less revenue would be generated to the Federal government.

IMPACTS OF ALTERNATIVE C, NO LEASING

Under Alternative C, approximately 10 Federal oil and gas wells would be drilled per year in Kansas. These wells would be drilled on existing leases.

1.Air Quality

Impacts to air quality under Alternative C would be approximately half the described impacts for Alternative A.

2. Water Resources

Impacts to both surface and subsurface waters under Alternative C would be approximately half those described for Alternative A.

3. Soils

Impacts to soils under Alternative C would be approximately half the described impacts for Alternative A.

4.Vegetation

Impacts to vegetation under Alternative C would be approximately half those described for Alternative A.

5. Wildlife

Impacts to wildlife under Alternative C would be approximately half those described for Alternative A. None of the additional stipulations or lease notices applicable to Alternative B would apply to leased tracts.

6. Cultural Resources

Impacts to cultural resources under Alternative C would be approximately half those described for Alternative A.

7. Paleontology

Impacts to paleontological resources under Alternative C would be approximately half those described for Alternative A.

8. Minerals

Impacts to mineral resources under Alternative C would be approximately half those described for Alternative A.

Under Alternative C, no Federal oil and gas would be leased, existing leases would continue to be developed.

9. Social and Economic

Impacts to the states social and economic structure under Alternative C would be approximately half those described for Alternative A, except that;

Alternative C would result in a loss of Federal lease revenues to the State and Federal Governments from lease sale bonus bids, lease rentals and fees, royalties and taxes.

CHAPTER FIVE
CONSULTATION AND COORDINATION

CHAPTER FIVE
CONSULTATION AND COORDINATION

INTRODUCTION

This chapter summarizes the consultation and coordination conducted in preparation of the Draft Kansas RMP/EIS. During preparation of this document, both formal and informal efforts have been made to involve the public, other Federal agencies, State agencies, and local Governments in the planning process. Several points of public involvement are mandated by regulations and were complied with.

Prior to the preparation of this document, the process of data collection and other preliminary activities occurred. This process included inventory, public participation, interagency coordination, and preparation of a Management Situation Analysis (MSA). The MSA, as well as documentation of consultation and coordination efforts, are on file in the ORA office. Consultation and coordination with other Federal agencies, state agencies, organizations and individuals occurred in a variety of ways throughout the planning process.

The Kansas RMP/EIS was prepared by an interdisciplinary team of resource specialists from the ORA and the Tulsa District Offices. Table 5-1 lists the names and qualifications of each team member.

PUBLIC PARTICIPATION

Public involvement in the preparation of a land use plan is a dynamic process occurring throughout the development and implementation of an RMP. In addition to the formal public participation steps, informal contacts occur frequently with Federal oil and gas operators, lessees, and interested persons through meetings, telephone calls or letters. All applicable public participation is documented in the planning process.

Public participatory input for the Kansas RMP/EIS was solicited through the following methods:

1. A Notice of Intent to conduct land use planning, call for coal, other mineral, and resource information, and an announcement of dates, locations, and times of the public meetings/open houses provided to receive oral comments, was published in the Federal Register, 54 FR 25,348 (1989).

2. A News Release announcing initiation of the Land-use-planning effort, and repeating the information contained in the Federal Register notice, was sent to the 45 groups, individuals, corporations and agencies contained on the Kansas RMP/EIS Mailing List on June 14, 1989.

3. A duplicate News Release of the one sent to the Mailing List, was sent to 85 newspapers throughout the state on June 14, 1989.

4. Public meetings/open houses were held in Kansas at: Overland Park, July 18, Salina, July 19, and Pratt, July 20, 1989. The meetings were a means to provide the public with the opportunity to provide comments and identify potential issues orally.

PUBLIC REVIEW OF THE DRAFT RMP/EIS

Table 5-2 is a partial listing of various Federal, state and local agencies, organizations, groups and individuals to which the Draft RMP/EIS is being sent for review and comment.

TABLE 5-1
LIST OF PREPARERS

NAME/RMP RESPONSIBILITY	EDUCATION/ EXPERIENCE
Brian Mills Team Leader	B.S., Wildlife Ecology, Oklahoma State University. BLM 16 years (Wildlife Biologist, 11 years, Natural Resource Specialist, 2 years, and Planning Team Leader, 3 years). Experience with DOD and the private sector (Amoco Production Inc., Research Division) prior to BLM service.
Jacqueline Gratton Writer/Editor	A.A., College of San Mateo. BLM 12 years (Realty Specialist, 10 years, and Secretary 2 years). Experience with DOD and in the private sector prior to BLM service.
Philip Keasling Wildlife, Vegetation	B.S., Zoology, Oklahoma State University. BLM 13 years as a Wildlife Biologist. Experience with both Oklahoma State University and the University of Wisconsin, Madison, prior to BLM service.
John Ledbetter Lands	B.S., Industrial Arts Educ., Southwestern Oklahoma State University. BLM 6 years (Realty Specialist, 2 years, and Petroleum Engineering Technician, 4 years). Experience with DOD and private sector (Dresser Magcobar) prior to BLM service.
John Northcutt Cultural Resources, Paleontology	B.A., English and Educ., Phillips University; M.A., Anthropology, Oklahoma University; A.A.S., Data Processing, Cameron University. BLM 2 years as an Archeologist. Experience as a contract Archeologist 15 years (7 years with the Museum of the Great Plains).
Jamie Querry (Retired) Minerals	B.A., Psychology, B.S., M.S., Geology, Oklahoma University. BLM 16 years as a Geologist. Experience with the Atomic Energy Commission, DOD and in the private sector (Atlantic Richfield Company) prior to BLM service.

TABLE 5-2
LISTING OF DOCUMENT RECIPIENTS

U.S. SENATORS & CONGRESSMEN

Senator Bob Dole
Senator Nancy Landon Kassebaum
Congressman Dan Glickman
Congressman Jan Meyers
Congressman Pat Roberts
Congressman Jim Slattery
Congressman Bob Whittaker

FEDERAL GOVERNMENT

Department of Agriculture
- U.S. Forest Service
- Soil Conservation Service

Department of Defense
- U.S. Air Force
  - McConnell Air Force Base
  - Smoky Hill Air National Guard Range
- U.S. Army
  - Ft. Riley Military Reservation
  - Ft. Leavenworth Military Reservation
  - Corps of Engineers
  - Kansas Army Ammunition Plant
  - Sunflower Army Ammunition Plant
- U.S. Navy

Department of Energy
- Federal Energy Regulatory Commission

Department of the Interior
- Bureau of Indian Affairs
- Bureau of Reclamation
- U.S. Fish & Wildlife Service
  - Flint Hills National Wildlife Refuge
  - Kirwin National Wildlife Refuge
  - Quivera National Wildlife Refuge
- National Park Service

STATE GOVERNMENT

Corporation Commission
Department of Wildlife and Parks
Geological Survey
- Oil and Gas Conservation Division

Governor of Kansas
Intergovernmental Coordinator/Technical Director
Natural Heritage Program
State Historical Society
State Historic Preservation Officer
- Center for Historical Research
- Museum of History

INDUSTRY, UNIVERSITIES & SPECIAL INTEREST GROUPS

Kansas Audubon Council
Kansas Wildlife Federation
Kansas Chapter of The Wildlife Society
Mobil Oil Corp.
New Mexico Land Use Alliance
Savage Oil Company, Inc.
University of Kansas
- Museum of Natural History

University of Michigan
- School of Natural Resources

CITY, COUNTY & TRIBAL ORGANIZATIONS/GOVERNMENT

Ashland Public Library
Coldwater-Willmore Regional Library
Geary County Fish and Game Assoc., Inc.
Horton Agency
Kickapoo of Kansas Tribal Office
Leavenworth Public Library
Liberal Memorial Library
Manhattan Public Library
Oakley Public Library
Oberlin Public Library
St. Francis Public Library
Stevens County Library
Syracuse Public Library
Troy Public Library
Winfield Public Library

APPENDICES

APPENDIX 1
KANSAS SPLIT ESTATE

KANSAS SPLIT ESTATE (UNLEASED)

COUNTY	TOWN SHIP	RNG	SN	SUBDIVISION	ACREAGE	MINRL
** COUNTY ALLEN						
ALLEN	25S	18E	10	SE1/4	160.000	ACQ
** Subtotal **					160.000	
** COUNTY ATCHISON						
ATCHISON	6S	17E	36	NW1/4	80.000	ACQ
** Subtotal **					80.000	
** COUNTY BARBER						
BARBER	33S	15W	8	SESE	40.000	ALL
BARBER	35S	14W	3	SWNW	40.000	OG
** Subtotal **					80.000	
** COUNTY BOURBON						
BOURBON	24S	24E	30	E1/2SE1/4	80.000	ACQ
BOURBON	26S	24E	4	NWSW, W1/2SW1/4SW1/4	60.000	ACQ
BOURBON	26S	24E	5	SE1/4	160.000	ACQ
** Subtotal **					300.000	
** COUNTY BROWN						
BROWN	2S	17E	5	S1/2NW1/4	80.000	ACQ
BROWN	4S	16E	19	W1/2NW1/4	80.000	ALL
** Subtotal **					160.000	
** COUNTY CHAUTAUQUA						
CHAUTAUQUA	35S	12E	7	S1/2NE1/4	80.000	ACQ
** Subtotal **					80.000	
** COUNTY CHEYENNE						
CHEYENNE	1S	37W	16	NE1/4,E1/2SE1/4	240.000	ACQ
CHEYENNE	1S	37W	4	NESE	40.000	ALL
CHEYENNE	1S	38W	18	LOT 2,3,SENW,NESW	167.720	ACQ
CHEYENNE	1S	38W	28	N1/2SW1/4	80.000	ALL
CHEYENNE	1S	39W	30	LOTS1,2,E1/2NW1/4	157.580	ACQ
CHEYENNE	1S	39W	4	SENW,NESW	80.000	ALL
CHEYENNE	1S	39W	5	SW1/4,W1/2SE1/4	240.000	ALL
CHEYENNE	1S	39W	6	NESE,E1/2SE1/4	120.000	ALL
CHEYENNE	1S	39W	7	LOT 2	36.050	ALL
CHEYENNE	1S	40W	1	E1/2SESWSE	120.000	ALL
CHEYENNE	1S	40W	10	SW,W1/2NE1/4	240.000	ALL
CHEYENNE	1S	40W	11	NE1/4,E1/2NWSW	360.000	ALL
CHEYENNE	1S	40W	12	NE1/4,W1/2NW1/4,SENW	280.000	ALL
CHEYENNE	1S	40W	2	SESW,SE1/4	200.000	ALL
CHEYENNE	1S	40W	3	LOT1,2,SWSE,E1/2SW,W1/2SE	287.300	ALL
CHEYENNE	1S	40W	30	E1/2NE1/4,NWSE	120.000	ALL
CHEYENNE	1S	40W	34	NENE	40.000	ALL
CHEYENNE	1S	40W	4	E1/2	322.630	ALL
CHEYENNE	1S	40W	5	LOT1-4,S1/2S1/2,N1/2W1/2,SWSW, S1/2SE	604.760	ALL
CHEYENNE	1S	40W	6	ALL	610.880	ALL
CHEYENNE	1S	40W	7	LOT1,2,NE1/4,SENW,E1/2SW,SE1/4	465.100	ALL
CHEYENNE	1S	40W	8	W1/2NW1/4,NWSW	120.000	ALL
CHEYENNE	1S	40W	9	S1/2NE,E1/2NW,SE1/4	320.000	ALL
CHEYENNE	1S	41W	1	SW1/4	160.000	ALL
CHEYENNE	1S	41W	11	N1/2,NESE	360.000	ALL
CHEYENNE	1S	41W	12	NWNW	40.000	ALL
CHEYENNE	1S	41W	14	NENW	40.000	ALL
CHEYENNE	1S	41W	4	S1/2SW1/4	80.000	ALL
CHEYENNE	1S	41W	5	LOT 2	41.430	ALL
CHEYENNE	1S	41W	9	NENW	40.000	OG
CHEYENNE	1S	41W	9	NE1/4	160.000	ALL
CHEYENNE	1S	42W	22	SW1/4	160.000	ALL
CHEYENNE	1S	42W	26	SW1/4,W1/2SE1/4	240.000	ALL
CHEYENNE	1S	42W	27	W1/2NW,SWSW,SENE,E1/2SE	240.000	ALL
CHEYENNE	1S	42W	28	E1/2NE,S1/2SE,NESE	200.000	ALL
CHEYENNE	1S	42W	29	LOT 1	44.400	ALL
CHEYENNE	1S	42W	34	E1/2NE,SWNE,NWNW	160.000	ALL
CHEYENNE	2S	37W	5	LOT 2, NESE	80.270	ALL
CHEYENNE	2S	38W	16	NE1/4	160.000	ACQ
CHEYENNE	2S	38W	4	S1/2SW1/4,E1/2SE1/4	160.090	ALL
CHEYENNE	2S	38W	8	S1/2NW,N1/2SW	160.000	ACQ
CHEYENNE	2S	38W	9	S1/2NW1/4,SW1/4	240.000	ACQ
CHEYENNE	2S	39W	10	NW1/4	160.000	ACQ
CHEYENNE	2S	39W	16	ALL	640.000	ACQ
CHEYENNE	2S	39W	27	N1/2,SE/14	480.000	ACQ
CHEYENNE	2S	40W	2	SWNE,SENW,SESW,W1/2SE	200.000	ALL
CHEYENNE	2S	40W	34	SE1/4	160.000	ALL
CHEYENNE	2S	41W	11	SESE	40.000	ALL
CHEYENNE	2S	41W	25	NE1/4	160.000	ACQ
CHEYENNE	2S	42W	10	SWNW	40.000	ALL
CHEYENNE	2S	42W	9	SENE,N1/2SE	120.000	ALL
CHEYENNE	4S	41W	21	SE1/4,SESW	200.000	ALL
CHEYENNE	4S	41W	28	W1/2NE1/4	80.000	ALL
CHEYENNE	4S	41W	35	SE1/4	160.000	ALL
CHEYENNE	4S	42W	16	LOT 2	12.120	ALL
CHEYENNE	4S	42W	21	LOTS 1,2	22.240	ALL
CHEYENNE	4S	42W	22	SW1/4	160.000	ACQ
CHEYENNE	4S	42W	27	N1/2NW1/4	80.000	ACQ
CHEYENNE	5S	42W	5	LOTS 5,6	9.100	ALLPO
** Subtotal **					10,737.780	
** COUNTY CLARK						
CLARK	31S	23W	27	SWNE	40.000	ALLPO
CLARK	32S	23W	18	NENW	40.000	OG
CLARK	32S	24W	11	NWSE	40.000	OG
CLARK	32S	24W	23	SWSE	40.000	OG
CLARK	33S	21W	2	LOTS 3,4,S1/2NW1/4	158.630	ACQ
CLARK	34S	24W	7	SWSE	40.000	OG

KANSAS SPLIT ESTATE (UNLEASED)

COUNTY	TOWN SHIP	RNG	SN	SUBDIVISION	ACREAGE	MINRL
CLARK	35S	25W	5	LOT 2	18.300	OAG
** Subtotal **					376.930	
** COUNTY CLAY						
CLAY	6S	4E	17	E1/2	218.000	ACQ
CLAY	7S	4E	10	W1/2NW1/4	80.000	ACQ
CLAY	7S	4E	7	NE1/4	159.000	ACQ
** Subtotal **					557.000	
** COUNTY CLOUD						
CLOUD	8S	4W	2	NW1/4	161.040	ACQ
** Subtotal **					161.040	
** COUNTY COMANCHE						
COMANCHE	34S	16W	8	NWSW	40.000	ALLPD
COMANCHE	34S	16W	8	SENW	40.000	ALLPD
COMANCHE	34S	17W	11	SESE	40.000	OAG
** Subtotal **					120.000	
** COUNTY COWLEY						
COWLEY	34S	3E	7	LOT 1	0.380	ALLPD
** Subtotal **					0.380	
** COUNTY DECATUR						
DECATUR	1S	27W	23	E1/2E1/2	160.000	ACQ
DECATUR	1S	29W	1	SWSE	40.000	ALLPD
DECATUR	2S	28W	9	W1/2SW1/4	80.000	ALL
DECATUR	2S	28W	8	SW1/4	160.000	ALL
DECATUR	4S	27W	31	SENE	40.000	ALL
DECATUR	4S	30W	33	NE1/4,E1/2SE,E1/2NW	320.000	ACQ
** Subtotal **					800.000	
** COUNTY DONIPHAN						
DONIPHAN	2S	19E	24	LOT 7	3.680	ALLPD
** Subtotal **					3.680	
** COUNTY DOUGLAS						
DOUGLAS	13S	18E	1	LOTS 1,2,S1/2NE1/4	158.490	ACQ
DOUGLAS	13S	18E	23	S1/2S1/2NW1/4,E1/2SW1/4	70.000	ACQ
DOUGLAS	13S	18E	26	METES AND BOUNDS	145.000	ACQ
DOUGLAS	13S	19E	6	METES AND BOUNDS	60.000	ACQ
DOUGLAS	13S	20E	7	METES AND BOUNDS	18.610	ALL
DOUGLAS	14S	20E	26	E1/2NE1/4	80.000	ACQ
** Subtotal **					532.100	

COUNTY	TOWN SHIP	RNG	SN	SUBDIVISION	ACREAGE	MINRL
** COUNTY EDWARDS						
EDWARDS	26S	16W	28	LOTS 5,6	11.240	OAG
EDWARDS	26S	20W	32	SWSE	40.000	ALL
** Subtotal **					51.240	
** COUNTY ELLIS						
ELLIS	11S	20W	22	SESW	40.000	OAG
** Subtotal **					40.000	
** COUNTY FINNEY						
FINNEY	25S	34W	6	LOTS 6,7,N1/2SW,SE1/4	320.520	ALL
FINNEY	25S	34W	18	ALL	641.280	ALL
FINNEY	26S	33W	5	LOTS2,3,NESW,NWSE	281.330	ALL
** Subtotal **					1,243.130	
** COUNTY FRANKLIN						
FRANKLIN	17S	20E	4	E1/2SW1/4, SENW	120.000	ACQ
FRANKLIN	19S	23E	24	SESE	40.000	ACQ
FRANKLIN	19S	23E	25	METES AND BOUNDS	30.000	ACQ
** Subtotal **					190.000	
** COUNTY GEARY						
GEARY	11S	5E	22	LOT 6	5.700	ALLPD
GEARY	11S	6E	34	TRACT38	212.850	ALL
GEARY	12S	4E	12	S1/2SW1/4,NESW	120.000	ACQ
** Subtotal **					338.550	
** COUNTY GOVE						
GOVE	14S	26W	24	SWNW,NWSW	80.000	ALL
GOVE	15S	26W	13	SESW	40.000	OAG
GOVE	15S	26W	20	NESE	40.000	ALL
GOVE	15S	27W	34	W1/2SW	80.000	ALL
GOVE	15S	28W	10	SWSW	40.000	ALL
GOVE	15S	28W	21	SWNE,SWSE	80.000	ALL
GOVE	15S	28W	32	NWNE,SESW	80.000	OAG
GOVE	15S	30W	19	E1/2SW,W1/2SE	160.000	ALL
GOVE	15S	30W	30	NWNE,NENW	80.000	ALL
GOVE	15S	30W	6	W1/2SW1/4	80.000	ALL
** Subtotal **					760.000	
** COUNTY GRANT						
GRANT	30S	37W	19	NE1/4	160.000	ACQ
** Subtotal **					160.000	

KANSAS SPLIT ESTATE (UNLEASED)

COUNTY	TOWN SHIP	RNG	SM	SUBDIVISION	ACREAGE	MINRL
** COUNTY GREELEY						
GREELEY	18S	41W	11	NE1/4	160.000	ACQ
GREELEY	18S	41W	2	SE1/4	160.000	ACQ
GREELEY	19S	43W	2	LOT 4	40.1500	&G
GREELEY	20S	40W	19	SE1/4	160.000	ALL
GREELEY	20S	40W	35	NE1/4	160.000	ALL
GREELEY	20S	42W	23	NE1/4	160.000	ALL
GREELEY	20S	42W	31	SE1/4	160.000	ALL
GREELEY	20S	42W	34	NW1/4	160.000	ALL
GREELEY	20S	43W	11	LOT 2,E1/2SW1/4	132.630	ALL
GREELEY	20S	43W	12	SW1/4	160.000	ALL
** Subtotal **					1,452.780	
** COUNTY HAMILTON						
HAMILTON	21S	42W	4	LOTS 1-4,S1/2NE,S1/2NW	329.660	ACQ
HAMILTON	22S	39W	7	NE1/4	160.000	ALL
HAMILTON	22S	42W	30	LOTS 1-4,NE1/4,E1/2E1/2	459.080	ALL
HAMILTON	23S	42W	28	LOT 5	8.100	ALLPD
HAMILTON	23S	42W	34	LOT 1	27.320	&G
HAMILTON	24S	41W	22	W1/2	320.000	ALL
HAMILTON	24S	42W	10	W1/2	320.000	ALL
HAMILTON	24S	42W	12	ALL	640.000	ALL
HAMILTON	24S	42W	14	NE1/4,W1/2NW,W1/2NE	320.000	ALL
HAMILTON	24S	42W	18	S1/2SE1/4	80.000	ALL
HAMILTON	24S	42W	4	W1/2,SE1/4	479.680	ALL
HAMILTON	24S	43W	2	LOTS 1,2,S1/2NE	179.200	ALL
HAMILTON	25S	39W	12	S1/2	320.000	ALL
HAMILTON	25S	39W	8	S1/2	320.000	ALL
HAMILTON	25S	40W	2	W1/2	318.960	ALL
HAMILTON	25S	41W	20	SW1/4	160.000	ALL
HAMILTON	26S	41W	2	LOTS 3,4,	137.980	ALL
HAMILTON	26S	41W	6	LOT 5	33.800	ALL
HAMILTON	26S	42W	2	SWNW	40.000	ALL
HAMILTON	26S	42W	3	LOT 2	59.410	&G
HAMILTON	26S	43W	3	SWNE	40.000	ALL
** Subtotal **					4,753.190	
** COUNTY JACKSON						
JACKSON	6S	14E	12	SESW	40.000	ACQ
JACKSON	7S	14E	14	SWNE,S1/2SENE	60.000	ACQ
JACKSON	7S	15E	27	METES AND BOUNDS	95.000	ACQ
** Subtotal **					195.000	
** COUNTY JEFFERSON						
JEFFERSON	11S	17E	36	W1/2SE1/4	80.000	ACQ
JEFFERSON	11S	19E	11	W1/2NE1/4	80.000	ACQ
JEFFERSON	11S	19E	2	S1/2SE1/4	80.000	ACQ
JEFFERSON	12S	17E	1	NWNE	39.460	ACQ
JEFFERSON	12S	20E	15	SE1/2SENW,NESW,NESE	110.000	ACQ
JEFFERSON	8S	18E	10	W1/2NW1/4	80.000	ACQ
JEFFERSON	8S	20E	24	N1/2SE1/4	80.000	ACQ
JEFFERSON	9S	20E	2	N1/2SE1/4	78.000	ACQ
** Subtotal **					627.460	
** COUNTY JEWELL						
JEWELL	3S	6W	14	W1/2NENW,NWNW	62.500	ACQ
** Subtotal **					62.500	
** COUNTY KEARNY						
KEARNY	22S	36W	10	SE1/4	160.000	ACQ
KEARNY	22S	36W	9	SW1/4	160.000	ACQ
KEARNY	25S	35W	17	S1/2	320.000	ALL
KEARNY	25S	35W	18	E1/2SW1/4, SE1/4	200.000	ALL
KEARNY	25S	35W	34	W1/2	320.000	ALL
KEARNY	25S	38W	31	NE1/4	160.000	ACQ
KEARNY	26S	35W	27	SE1/4	160.000	ALL
KEARNY	26S	35W	5	LOTS 1,2	193.160	ALL
KEARNY	26S	36W	18	ALL	658.000	ALL
KEARNY	26S	36W	20	S1/2	320.000	ALL
KEARNY	26S	36W	21	S1/2	320.000	ALL
KEARNY	26S	36W	27	N1/2	320.000	ALL
KEARNY	26S	37W	11	ALL	640.000	ALL
** Subtotal **					3,931.160	
** COUNTY KINGMAN						
KINGMAN	30S	5W	6	LOT 2	16.190	&G
** Subtotal **					16.190	
** COUNTY LANE						
LANE	16S	27W	1	S1/2SW1/4	80.000	ALL
LANE	16S	27W	4	S1/2SW1/4	80.000	ALL
LANE	16S	27W	5	W1/2SW1/4	80.000	ALL
LANE	16S	28W	11	SENW,E1/2SW1/4	120.000	ALL
LANE	16S	28W	12	E1/2SE1/4	80.000	ALL
LANE	16S	28W	14	NENE,S1/2SW1/4	120.000	ALL
LANE	16S	28W	27	E1/2NE,NW1/4	240.000	ALL
LANE	16S	29W	10	NENE	40.000	ALL
LANE	16S	29W	3	SESE	40.000	ALL
LANE	19S	27W	2	LOT 2	40.080	&G
** Subtotal **					920.080	
** COUNTY LEAVENWORTH						
LEAVENWORTH	11S	22E	9	E1/2E1/2SW1/4	19.790	ACQ
LEAVENWORTH	12S	22E	35	W1/2W1/2SW,SENW,E1/2SW1/4	160.000	ACQ
LEAVENWORTH	8S	21E	29	METES AND BOUNDS	47.680	ACQ
LEAVENWORTH	8S	22E	24	PARCEL "1"	9.440	ALL
LEAVENWORTH	8S	22E	24	METES AND BOUNDS	33.400	ALLPO

KANSAS SPLIT ESTATE (UNLEASED)

COUNTY	TOWN SHIP	RNG	SN	SUBDIVISION	ACREAGE	MINRL
LEAVENWORTH	9S	21E	33	NETES AND BOUNDS	58.000	ACQ
** Subtotal **					328.310	
** COUNTY LINN						
LINN	19S	24E	19	LOT 4	29.000	ACQ
LINN	19S	24E	30	LOTS 1,3	115.300	ACQ
LINN	22S	23E	17	LOT 1,2,E1/2NW,W1/2NE	240.000	ACQ
LINN	22S	23E	8	NETES AND BOUNDS	60.000	ACQ
LINN	23S	23E	15	NWNE	40.000	ACQ
** Subtotal **					484.300	
** COUNTY LOGAN						
LOGAN	13S	37W	30	LOT 9	1.150	ALLPD
LOGAN	13S	37W	31	LOT 7,8	23.800	ALLPD
LOGAN	14S	32W	14	SWNW	40.000	ALLPD
LOGAN	14S	37W	26	SENE	40.000	AG
LOGAN	15S	32W	1	NESW	40.000	AG
LOGAN	15S	32W	10	SENW	40.000	ALL
LOGAN	15S	32W	11	S1/2SW1/4,W1/2SE1/4	160.000	ALL
LOGAN	15S	32W	17	E1/2SW1/4	80.000	ALL
LOGAN	15S	32W	9	NESE	40.000	ALL
LOGAN	15S	35W	13	NW1/4	160.000	AG
LOGAN	15S	35W	14	NW1/4	160.000	AG
LOGAN	15S	37W	8	N1/2NE1/4	80.000	ALL
** Subtotal **					964.950	
** COUNTY LYON						
LYON	16S	13E	13	E1/2NW1/4	80.000	ACQ
** Subtotal **					80.000	
** COUNTY MARSHALL						
MARSHALL	2S	6E	1	LOT 1	39.880	ALL
MARSHALL	3S	10E	10	E1/2SE1/4	80.000	ACQ
MARSHALL	3S	10E	11	NWSW	40.000	ACQ
** Subtotal **					159.880	
** COUNTY MEADE						
MEADE	31S	26W	25	LOTS 5,6	17.440	AG
MEADE	33S	27W	1	LOT 1	39.860	AG
MEADE	33S	28W	28	SWSE	40.000	ALLPD
MEADE	33S	29W	10	W1/2NE,E1/2NW	160.000	ALL
MEADE	33S	29W	9	E1/2NE1/4	80.000	AG
MEADE	34S	26W	1	LOTS 5,6	3.640	AG
MEADE	34S	26W	13	LOTS 5,6	7.520	AG
MEADE	34S	26W	24	LOTS 5,6	2.720	AG
MEADE	34S	26W	25	LOTS 5,6	2.480	AG
MEADE	34S	27W	15	S1/2SE1/4	80.000	ALL
MEADE	34S	27W	22	NE1/4,NE1/2SE1/4	240.000	ALL
MEADE	34S	28W	13	SWSE	40.000	ALL
MEADE	34S	28W	20	S1/2NW1/4	80.000	ALL
MEADE	34S	29W	12	SESE	40.000	ALL
MEADE	34S	30W	19	LOT 3	38.780	ALLPD
MEADE	34S	30W	32	W1/2S1/2	160.000	ALL
MEADE	35S	26W	10	S1/2NW1/4	80.000	ALL
MEADE	35S	28W	4	SENW	40.000	AG
MEADE	35S	29W	6	LOT 2,SENW	80.090	ALL
** Subtotal **					1,228.530	
** COUNTY MIAMI						
MIAMI	16S	22E	26	NW1/4	160.000	ACQ
** Subtotal **					160.000	
** COUNTY MITCHELL						
MITCHELL	6S	9W	31	W1/2SE1/4	80.000	ACQ
MITCHELL	7S	7W	32	SW1/4	160.000	ACQ
** Subtotal **					240.000	
** COUNTY MORRIS						
MORRIS	14S	6E	4	W1/2SW1/4	80.000	ACQ
MORRIS	14S	6E	5	LOT 3,4,SWNE,S1/2NW,W1/2SE,SESE	362.120	ACQ
** Subtotal **					442.120	
** COUNTY NEMAHA						
NEMAHA	2S	13E	19	W1/2SW1/4,W1/2W1/2SSE1/4	170.000	ACQ
NEMAHA	4S	13E	34	SENE,W26A. OF NESE	64.800	ACQ
** Subtotal **					194.900	
** COUNTY NESS						
NESS	19S	25W	8	S1/2NE1/4	160.000	AG
** Subtotal **					160.000	
** COUNTY NORTON						
NORTON	4S	21W	18	W1/2W1/2	158.850	ACQ
NORTON	4S	21W	7	W1/2SW	77.550	ACQ
NORTON	4S	22W	13	W1/2NE1/4	80.000	ACQ
NORTON	5S	24W	36	NW1/4	160.000	ACQ
** Subtotal **					476.400	

KANSAS SPLIT ESTATE (UNLEASED)

COUNTY	TOWN SHIP	RNG	SN	SUBDIVISION	ACREAGE	MINRL
** COUNTY OSAGE						
OSAGE	16S	15E	11	LOT 1, E1/2NW1/4	110.570	ACQ
** Subtotal **					110.570	
** COUNTY PAWNEE						
PAWNEE	21S	17W	21	LOT 5	11.350	O&G
** Subtotal **					11.350	
** COUNTY PHILLIPS						
PHILLIPS	1S	17W	8	M1/2SE1/4,S1/2SWNE	100.000	ACQ
** Subtotal **					100.000	
** COUNTY RAWLINS						
RAWLINS	1S	36W	15	SESW,NESE	80.000	ALL
RAWLINS	5S	35W	29	S1/2	320.000	ALL
RAWLINS	5S	35W	3	NESW	80.000	ALL
** Subtotal **					480.000	
** COUNTY REPUBLIC						
REPUBLIC	1S	4W	34	S1/2NE1/4	80.000	ACQ
REPUBLIC	2S	5W	12	W1/2SE1/4,SESE	110.000	ACQ
REPUBLIC	3S	3W	16	SW1/2S1/2,SE1/4	240.000	ACQ
** Subtotal **					430.000	
** COUNTY RILEY						
RILEY	10S	7E	15	W1/2SW1/4	80.000	O&G
RILEY	11S	6E	13	METES AND BOUNDS	50.510	ALLPO
RILEY	11S	7E	18	METES AND BOUNDS	27.000	ALLPO
** Subtotal **					157.510	
** COUNTY SALINE						
SALINE	15S	4W	24	METES AND BOUNDS	100.000	ACQ
** Subtotal **					100.000	
** COUNTY SCOTT						
SCOTT	16S	31W	7	SENE	40.000	ALL
SCOTT	16S	33W	24	NWNW	40.000	ALL
SCOTT	16S	33W	26	NESW	40.000	ALL
SCOTT	17S	32W	7	S1/2LOT2,LOT3, S1/2SWNE,S1/2SENW,NESW,NWSE	180.000	ALL
SCOTT	20S	31W	20	NE1/4,W1/2SW1/4	240.000	ALL
** Subtotal **					540.000	
** COUNTY SEWARD						
SEWARD	32S	33W	19	LOT 3	37.530	O&G
SEWARD	33S	32W	25	SWSW	40.000	ALL
SEWARD	33S	32W	26	SESE	40.000	ALL
SEWARD	33S	32W	30	LOTS 1,2,E1/2NW1/4	151.340	ACQ
SEWARD	33S	32W	35	NWNW	40.000	ALL
SEWARD	33S	32W	35	SESW,SWSE	80.000	ACQ
SEWARD	34S	31W	24	NESE	40.000	O&G
SEWARD	35S	31W	9	W1/2NE	80.000	ALLPO
** Subtotal **					508.870	
** COUNTY SHAWNEE						
SHAWNEE	11S	16E	24	METES AND BOUNDS	40.000	ACQ
SHAWNEE	11S	16E	25	METES AND BOUNDS	34.050	ACQ
** Subtotal **					74.050	
** COUNTY SHERMAN						
SHERMAN	10S	38W	22	SW1/4	160.000	ALL
SHERMAN	6S	37W	33	S1/2, NE1/4	480.000	ACQ
SHERMAN	6S	41W	4	S1/2	320.000	ACQ
** Subtotal **					960.000	
** COUNTY SMITH						
SMITH	2S	11W	14	SW1/4	160.000	ACQ
** Subtotal **					160.000	
** COUNTY STAFFORD						
STAFFORD	22S	11W	4	LOT 4	40.810	ACQ
** Subtotal **					40.810	
** COUNTY STANTON						
STANTON	27S	41W	3	LOT 2	40.190	ALL
STANTON	27S	43W	20	ALL	259.280	ALL
STANTON	27S	43W	21	NW1/4	160.000	ALL
STANTON	28S	42W	5	LOTS 1,2	96.200	ALL
STANTON	29S	40W	2	SW1/4	160.000	ACQ
STANTON	29S	43W	15	SESW	40.000	ACQ
** Subtotal **					735.670	
** COUNTY TREGO						
TREGO	14S	23W	26	SWSW	40.000	O&G
** Subtotal **					40.000	

KANSAS SPLIT ESTATE (UNLEASED)

COUNTY	TOWNSHIP	RNG	SN	SUBDIVISION	ACREAGE	MINRL
** COUNTY WABAUNSEE						
WABAUNSEE	10S	10E	10	LOT 11	1.330	OAG
WABAUNSEE	10S	10E	15	LOT 13	13.740	OAG
** Subtotal **					15.070	
** COUNTY WALLACE						
WALLACE	11S	40W	20	E1/2NE1/4,W1/2	400.000	ALL
WALLACE	11S	43W	12	NE1/4	160.000	ACQ
WALLACE	12S	40W	22	NWNW	40.000	ALL
WALLACE	12S	41W	6	LOTS 6,7	69.860	ALL
WALLACE	13S	42W	14	SE1/4	160.000	ALL
WALLACE	15S	38W	22	SE1/4	160.000	ALL
** Subtotal **					989.860	
** COUNTY WASHINGTON						
WASHINGTON	1S	1E	11	SE1/4	160.000	ACQ
WASHINGTON	4S	4E	7	SWNW	33.460	ACQ
** Subtotal **					193.460	
** COUNTY WICHITA						
WICHITA	16S	37W	23	SE1/4	160.000	ACQ
WICHITA	16S	37W	24	S1/2	320.000	ACQ
** Subtotal **					480.000	
** COUNTY WILSON						
WILSON	30S	16E	13	E1/2NE1/4	80.000	ACQ
** Subtotal **					80.000	
** COUNTY WOODSON						
WOODSON	24S	17E	2	LOTS 1,2,S1/2NE1/4,SE1/4	316.800	ACQ
** Subtotal **					316.800	
*** Total ***					40,253.740	

KANSAS SPLIT ESTATE (LEASED)

COUNTY	TOWN SHIP	RNG	SN	SUBDIVISION	ACREAGE	MINRL
** COUNTY CHEYENNE						
CHEYENNE	3S	41W	6	E1/2	319.280	ACQ
CHEYENNE	4S	40W	9	SE1/4	160.000	ALL
** Subtotal **					479.280	
** COUNTY COMANCHE						
COMANCHE	31S	16W	1	LOT 4	39.800	ALLPD
** Subtotal **					39.800	
** COUNTY FINNEY						
FINNEY	24S	32W	18	LOT 4	35.720	ALL
FINNEY	24S	34W	32	S1/2	320.000	ALL
FINNEY	25S	32W	12	S1/2SW,E1/2SE	160.000	ALL
FINNEY	25S	32W	11	N1/2	320.000	ALL
FINNEY	25S	34W	10	N1/2	320.000	ALL
FINNEY	25S	34W	30	LOTS 1,2,NE1/4,E1/2NW1/4	320.060	ALL
FINNEY	25S	34W	32	S1/2	320.000	ALL
FINNEY	25S	34W	34	SE1/4	160.000	ALL
FINNEY	26S	34W	10	ALL	640.000	ALL
FINNEY	26S	34W	16	N1/2	320.000	ALL
FINNEY	26S	34W	17	S1/2	320.000	ALL
FINNEY	26S	34W	18	ALL	618.640	ALL
FINNEY	26S	34W	26	N1/2	320.000	ALL
FINNEY	26S	34W	27	ALL	640.000	ALL
FINNEY	26S	34W	29	N1/2	320.000	ALL
FINNEY	26S	34W	3	LOTS 3,4,S1/2NW1/4,S1/2	601.150	ALL
FINNEY	26S	34W	30	S1/2	311.750	ALL
FINNEY	26S	34W	31	ALL	623.930	ALL
FINNEY	26S	34W	32	N1/2	320.000	ALL
FINNEY	26S	34W	33	N1/2	320.000	ALL
FINNEY	26S	34W	6	LOTS 3,6,7,E1/2SW1/4,SE1/4	404.760	ALL
FINNEY	26S	34W	9	S1/2	320.000	ALL
** Subtotal **					8,036.010	
** COUNTY GOVE						
GOVE	15S	26W	21	N1/2NW,NWSW	120.000	ALL
GOVE	15S	26W	9	E1/2SE1/4	80.000	ALL
** Subtotal **					200.000	
** COUNTY GRANT						
GRANT	29S	35W	11	SW1/4	160.000	ACQ
GRANT	29S	36W	33	NE1/4	160.000	ACQ
GRANT	29S	36W	34	W1/2	320.000	ACQ
** Subtotal					640.000	
** COUNTY GREELEY						
GREELEY	20S	43W	13	NW1/4	160.000	ALL
GREELEY	20S	43W	23	E1/2	320.000	ACQ
** Subtotal					480.000	
** COUNTY HAMILTON						
HAMILTON	21S	41W	3	W1/2SE1/4	80.000	ALL
HAMILTON	24S	40W	20	S1/2NW1/4	80.000	ALL
HAMILTON	24S	40W	20	LOT 1	11.000	ALLPD
HAMILTON	24S	40W	32	N1/2	320.000	ALL
HAMILTON	24S	41W	14	S1/2	320.000	ALL
HAMILTON	24S	41W	18	ALL	626.520	ALL
HAMILTON	24S	41W	20	N1/2N1/2	160.000	ALL
HAMILTON	24S	41W	8	S1/2	320.000	ALL
HAMILTON	25S	39W	13	S1/2	320.000	ALL
HAMILTON	25S	39W	2	LOTS1,2,S1/2NE,SE1/4	320.400	ALL
HAMILTON	25S	39W	22	N1/2	320.000	ALL
HAMILTON	25S	39W	24	N1/2	320.000	ALL
HAMILTON	26S	39W	4	SWNW	40.000	ALL
HAMILTON	26S	40W	31	NENW	40.000	ALL
** Subtotal					3,288.120	
** COUNTY HASKELL						
HASKELL	27S	33W	8	S1/2	320.000	ALL
HASKELL	27S	34W	11	NE1/4	160.000	ALL
HASKELL	27S	34W	12	ALL	640.000	ALL
HASKELL	27S	34W	15	NE1/4	160.000	ALL
HASKELL	27S	34W	3	S1/2	320.000	ALL
HASKELL	27S	34W	4	LOT 1,4,S1/2NE,S1/2NW	320.440	ALL
HASKELL	27S	34W	6	ALL	630.530	ALL
** Subtotal					2,550.970	
** COUNTY KEARNY						
KEARNY	22S	35W	36	SE1/4	160.000	ACQ
KEARNY	22S	35W	7	NE1/4	160.000	ACQ
KEARNY	22S	36W	14	NW1/4	160.000	ACQ
KEARNY	22S	36W	15	SE1/4	160.000	ACQ
KEARNY	24S	38W	28	SENW	40.000	ALLPD
KEARNY	25S	35W	13	S1/2	320.000	ALL
KEARNY	25S	35W	15	N1/2	320.000	ALL
KEARNY	25S	35W	19	LOTS 3,4,N1/2NE, E1/2SW	239.920	ALL
KEARNY	25S	35W	2	LOTS 1-4,S1/2NE,S1/2SW	313.600	ALL
KEARNY	25S	35W	20	N1/2	320.000	ALL
KEARNY	25S	35W	23	N1/2	320.000	ALL
KEARNY	25S	35W	4	S1/2	320.000	ALL
KEARNY	25S	35W	8	S1/2	320.000	ALL
KEARNY	25S	36W	14	N1/2	320.000	ALL
KEARNY	25S	36W	26	N1/2	320.000	ALL
KEARNY	25S	36W	27	N1/2NE1/4	80.000	ALL
KEARNY	25S	37W	28	SW1/4	160.000	ALL

KANSAS SPLIT ESTATE (LEASED)

COUNTY	TOWN SHIP	RNG	SN	SUBDIVISION	ACREAGE	MINRL
KEARNY	25S	37W	30	LOTS 3,4,E1/2SW,SE1/4,S1/2NE1/4	400.300	ALLPO
KEARNY	25S	37W	30	LOTS 1,2,N1/2NE,E1/2NW	239.700	ALL
KEARNY	25S	37W	32	N1/2	320.000	ALL
KEARNY	25S	38W	14	S1/2	320.000	ALL
KEARNY	25S	38W	26	S1/2	320.000	ALL
KEARNY	26S	35W	10	N1/2	320.000	ALL
KEARNY	26S	35W	12	S1/2	320.000	ALL
KEARNY	26S	35W	14	S1/2	320.000	ALL
KEARNY	26S	35W	15	N1/2	320.000	ALL
KEARNY	26S	35W	17	S1/2	320.000	ALL
KEARNY	26S	35W	19	ALL	640.000	ALL
KEARNY	26S	35W	20	W1/2	320.000	ALL
KEARNY	26S	35W	21	E1/2	320.000	ALL
KEARNY	26S	35W	22	W1/2	320.000	ALL
KEARNY	26S	35W	24	W1/2	320.000	ALL
KEARNY	26S	35W	26	S1/2	320.000	ALL
KEARNY	26S	35W	28	W1/2	320.000	ALL
KEARNY	26S	35W	3	LOTS 3,4,N1/2SW, NWSE	474.300	ALL
KEARNY	26S	35W	32	NW1/4	160.000	ALL
KEARNY	26S	35W	34	NE1/4	160.000	ALL
KEARNY	26S	35W	35	N1/2	320.000	ALL
KEARNY	26S	35W	8	S1/2	160.000	ALL
KEARNY	26S	35W	9	ALL	640.000	ALL
KEARNY	26S	36W	11	S1/2S1/2,NWNW	200.000	ALL
KEARNY	26S	36W	13	SE1/4	160.000	ALL
KEARNY	26S	36W	23	SW1/4	160.000	ALL
KEARNY	26S	36W	26	N1/2	320.000	ALL
KEARNY	26S	36W	29	W1/2NW1/4	80.000	ALL
KEARNY	26S	36W	35	N1/2	320.000	ALL
KEARNY	26S	37W	10	ALL	640.000	ALL
KEARNY	26S	37W	14	N1/2	320.000	ALL
KEARNY	26S	37W	24	N1/2	320.000	ALL
KEARNY	26S	37W	4	LOTS 2,3,SWNE,S1/2NW	390.420	ALL
KEARNY	26S	37W	6	LOTS 6,7,E1/2SW,SW1/4	304.400	ALL
** Subtotal					14,922.640	
** COUNTY LANE						
LANE	16S	27W	12	W1/2NE1/4,NW1/4	240.000	ALL
** Subtotal					240.000	
** COUNTY MEADE						
MEADE	33S	29W	3	E1/2SW		
MEADE	34S	26W	12	LOTS 5,6	4.160	O&G
MEADE	35S	29W	7	NESE	40.000	ALL
MEADE	35S	30W	1	NE1/4	160.000	ALL
** Subtotal					284.160	

COUNTY	TOWN SHIP	RNG	SN	SUBDIVISION	ACREAGE	MINRL
** COUNTY SALINE						
SALINE	15S	3W	19	METES AND BOUNDS		
** Subtotal					121.100	
** COUNTY SEWARD						
SEWARD	31S	34W	21	NENW	40.000	O&G
SEWARD	32S	34W	25	E1/2NE,E1/2NW,NESE	200.000	O&G
SEWARD	33S	31W	32	NENE,SESE	80.000	ALL
SEWARD	34S	31W	7	LOT 2,SENW	75.300	ALL
SEWARD	34S	32W	12	S1/2NE1/4	80.000	ALL
SEWARD	34S	32W	2	LOT 2,SENE	80.310	ACQ
** Subtotal					555.610	
** COUNTY STANTON						
STANTON	29S	39W	30	SE1/4	160.000	ACQ
** Subtotal					160.000	
** COUNTY TREGO						
TREGO	,12S	22W	35	NW1/4	160.000	ACQ
** Subtotal					160.000	
*** Total ***					32,157.690	

APPENDIX 2
OIL AND GAS LEASE STIPULATIONS

Form 3100-11
(June 1988)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Serial No.

OFFER TO LEASE AND LEASE FOR OIL AND GAS

The undersigned *(reverse)* offers to lease all or any of the lands in Item 2 that are available for lease pursuant to the Mineral Leasing Act of 1920, as amended and supplemented (30 U.S.C. 181 et seq.), the Mineral Leasing Act for Acquired Lands of 1947, as amended (30 U.S.C. 351-359), the Attorney General's Opinion of April 2, 1941 (40 Op. Atty. Gen. 41), or the

READ INSTRUCTIONS BEFORE COMPLETING

1. Name
   Street
   City, State, Zip Code

2. This application/offer/lease is for: *(Check only One)* ☐ PUBLIC DOMAIN LANDS ☐ ACQUIRED LANDS (percent U.S. interest _____)
   Surface managing agency if other than BLM: _____ Unit/Project _____
   Legal description of land requested: *Parcel No. _____ *Sale Date (m/d/y): ____ / ____ / ____
   *SEE ITEM 2 IN INSTRUCTIONS BELOW PRIOR TO COMPLETING PARCEL NUMBER AND SALE DATE.

T.	R.	Meridian	State	County

Total acres applied for _____
Amount remitted: Filing fee $ _____ Rental fee $ _____ Total $ _____

DO NOT WRITE BELOW THIS LINE

3. Land included in lease:

T.	R.	Meridian	State	County

Total acres in lease _____
Rental retained $ _____

This lease is issued granting the exclusive right to drill for, mine, extract, remove and dispose of all the oil and gas *(except helium)* in the lands described in Item 3 together with the right to build and maintain necessary improvements thereupon for the term indicated below, subject to renewal or extension in accordance with the appropriate leasing authority. Rights granted are subject to applicable laws, the terms, conditions, and attached stipulations of this lease, the Secretary of the Interior's regulations and formal orders in effect as of lease issuance, and to regulations and formal orders hereafter promulgated when not inconsistent with lease rights granted or specific provisions of this lease.

NOTE: This lease is issued to the high bidder pursuant to his/her duly executed bid or nomination form submitted under 43 CFR 3120 and is subject to the provisions of that bid or nomination and those specified on this form.

Type and primary term of lease:

☐ Noncompetitive lease (ten years)

☐ Competitive lease (five years)

☐ Other _____

THE UNITED STATES OF AMERICA

by _____
(Signing Officer)

_____ _____
(Title) (Date)

EFFECTIVE DATE OF LEASE _____

(Continued on reverse)

4. (a) Undersigned certifies that (1) offeror is a citizen of the United States; an association of such citizens; a municipality; or a corporation organized under the laws of the United States or of any State or Territory thereof; (2) all parties holding an interest in the offer are in compliance with 43 CFR 3100 and the leasing authorities; (3) offeror's chargeable interests, direct and indirect in either public domain or acquired lands do not exceed 246,080 acres in Federal oil and gas leases in the same State, of which not more than 200,000 acres are held under option, or 300,000 acres in leases and 200,000 acres in options in either leasing District in Alaska; (4) offeror is not considered a minor under the laws of the State in which the lands covered by this offer are located; (5) offeror is in compliance with qualifications concerning Federal coal lease holdings provided in sec. 2(a)(2)(A) of the Mineral Leasing Act; (6) offeror is in compliance with reclamation requirements for all Federal oil and gas lease holdings as required by sec. 17(g) of the Mineral Leasing Act; and (7) offeror is not in violation of sec. 41 of the Act.

(b) Undersigned agrees that signature to this offer constitutes acceptance of this lease, including all terms, conditions, and stipulations of which offeror has been given notice, and any amendment or separate lease that may include any land described in this offer open to leasing at the time this offer was filed but omitted for any reason from this lease. The offeror further agrees that this offer cannot be withdrawn, either in whole or in part, unless the withdrawal is received by the proper BLM State Office before this lease, an amendment to this lease, or a separate lease, whichever covers the land described in the withdrawal, has been signed on behalf of the United States.

This offer will be rejected and will afford offeror no priority if it is not properly completed and executed in accordance with the regulations, or if it is not accompanied by the required payments. 18 U.S.C. Sec. 1001 makes it a crime for any person knowingly and willfully to make to any Department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Duly executed this _____ day of _____, 19 _____

(Signature of Lessee or Attorney-in-fact)

LEASE TERMS

Sec. 1. Rentals—Rentals shall be paid to proper office of lessor in advance of each lease year. Annual rental rates per acre or fraction thereof are:

(a) Noncompetitive lease, $1.50 for the first 5 years; thereafter $2.00;
(b) Competitive lease, $1.50; for primary term; thereafter $2.00;
(c) Other, see attachment, or

as specified in regulations at the time this lease is issued.

If this lease or a portion thereof is committed to an approved cooperative or unit plan which includes a well capable of producing leased resources, and the plan contains a provision for allocation of production, royalties shall be paid on the production allocated to this lease. However, annual rentals shall continue to be due at the rate specified in (a), (b), or (c) for those lands not within a participating area.

Failure to pay annual rental, if due, on or before the anniversary date of this lease (or next official working day if office is closed) shall automatically terminate this lease by operation of law. Rentals may be waived, reduced, or suspended by the Secretary upon a sufficient showing by lessee.

Sec. 2. Royalties—Royalties shall be paid to proper office of lessor. Royalties shall be computed in accordance with regulations on production removed or sold. Royalty rates are:

(a) Noncompetitive lease, 12½%;
(b) Competitive lease, 12½%;
(c) Other, see attachment; or

as specified in regulations at the time this lease is issued.

Lessor reserves the right to specify whether royalty is to be paid in value or in kind, and the right to establish reasonable minimum values on products after giving lessee notice and an opportunity to be heard. When paid in value, royalties shall be due and payable on the last day of the month following the month in which production occurred. When paid in kind, production shall be delivered, unless otherwise agreed to by lessor, in merchantable condition on the premises where produced without cost to lessor. Lessee shall not be required to hold such production in storage beyond the last day of the month following the month in which production occurred, nor shall lessee be held liable for loss or destruction of royalty oil or other products in storage from causes beyond the reasonable control of lessee.

Minimum royalty in lieu of rental of not less than the rental which otherwise would be required for that lease year shall be payable at the end of each lease year beginning on or after a discovery in paying quantities. This minimum royalty may be waived, suspended, or reduced, and the above royalty rates may be reduced, for all or portions of this lease if the Secretary determines that such action is necessary to encourage the greatest ultimate recovery of the leased resources, or is otherwise justified.

An interest charge shall be assessed on late royalty payments or underpayments in accordance with the Federal Oil and Gas Royalty Management Act of 1982 (FOGRMA) (30 U.S.C. 1701). Lessee shall be liable for royalty payments on oil and gas lost or wasted from a lease site when such loss or waste is due to negligence on the part of the operator, or due to the failure to comply with any rule, regulation, order, or citation issued under FOGRMA or the leasing authority.

Sec. 3. Bonds—A bond shall be filed and maintained for lease operations as required under regulations.

Sec. 4. Diligence, rate of development, unitization, and drainage—Lessee shall exercise reasonable diligence in developing and producing, and shall prevent unnecessary damage to, loss of, or waste of leased resources. Lessor reserves right to specify rates of development and production in the public interest and to require lessee to subscribe to a cooperative or unit plan, within 30 days of notice, if deemed necessary for proper development and operation of area, field, or pool embracing these leased lands. Lessee shall drill and produce wells necessary to protect leased lands from drainage or pay compensatory royalty for drainage in amount determined by lessor.

Sec. 5. Documents, evidence, and inspection—Lessee shall file with proper office of lessor, not later than 30 days after effective date thereof, any contract or evidence of other arrangement for sale or disposal of production. At such times and in such form as lessor may prescribe, lessee shall furnish detailed statements showing amounts and quality of all products removed and sold, proceeds therefrom, and amount used for production purposes or unavoidably lost. Lessee may be required to provide plats and schematic diagrams showing development work and improvements, and reports with respect to parties in interest, expenditures, and depreciation costs. In the form prescribed by lessor, lessee shall keep a daily drilling record, a log, information on well surveys and tests, and a record of subsurface investigations and furnish copies to lessor when required. Lessee shall keep open at all reasonable times for inspection by any authorized officer of lessor, the leased premises and all wells, improvements, machinery, and fixtures thereon, and all books, accounts, maps, and records relative to operations, surveys, or investigations on or in the leased lands. Lessee shall maintain copies of all contracts, sales agreements, accounting records, and documentation such as billings, invoices, or similar documentation that supports costs claimed as manufacturing, preparation, and/or transportation costs. All such records shall be maintained in lessee's accounting offices for future audit by lessor. Lessee shall maintain required records for 6 years after they are generated or, if an audit or investigation is underway, until released of the obligation to maintain such records by lessor.

During existence of this lease, information obtained under this section shall be closed to inspection by the public in accordance with the Freedom of Information Act (5 U.S.C. 552).

Sec. 6. Conduct of operations—Lessee shall 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. Lessee shall take reasonable measures deemed necessary by lessor to accomplish the intent of this section. To the extent consistent with lease rights granted, such measures may include, but are not limited to, modification to siting or design of facilities, timing of operations, and specification of interim and final reclamation measures. Lessor reserves the right to continue existing uses and to authorize future uses upon or in the leased lands, including the approval of easements or rights-of-way. Such uses shall be conditioned so as to prevent unnecessary or unreasonable interference with rights of lessee.

Prior to disturbing the surface of the leased lands, lessee shall contact lessor to be apprised of procedures to be followed and modifications or reclamation measures that may be necessary. Areas to be disturbed may require inventories or special studies to determine the extent of impacts to other resources. Lessee may be required to complete minor inventories or short term special studies under guidelines provided by lessor. If in the conduct of operations, threatened or endangered species, objects of historic or scientific interest, or substantial unanticipated environmental effects are observed, lessee shall immediately contact lessor. Lessee shall cease any operations that would result in the destruction of such species or objects.

Sec. 7. Mining operations—To the extent that impacts from mining operations would be substantially different or greater than those associated with normal drilling operations, lessor reserves the right to deny approval of such operations.

Sec. 8. Extraction of helium—Lessor reserves the option of extracting or having extracted helium from gas production in a manner specified and by means provided by lessor at no expense or loss to lessee or owner of the gas. Lessee shall include in any contract of sale of gas the provisions of this section.

Sec. 9. Damages to property—Lessee shall pay lessor for damage to lessor's improvements, and shall save and hold lessor harmless from all claims for damage or harm to persons or property as a result of lease operations.

Sec. 10. Protection of diverse interests and equal opportunity—Lessee shall: pay when due all taxes legally assessed and levied under laws of the State or the United States; accord all employees complete freedom of purchase; pay all wages at least twice each month in lawful money of the United States; maintain a safe working environment in accordance with standard industry practices; and take measures necessary to protect the health and safety of the public.

Lessor reserves the right to ensure that production is sold at reasonable prices and to prevent monopoly. If lessee operates a pipeline, or owns controlling interest in a pipeline or a company operating a pipeline, which may be operated accessible to oil derived from these leased lands, lessee shall comply with section 28 of the Mineral Leasing Act of 1920.

Lessee shall comply with Executive Order No. 11246 of September 24, 1965, as amended, and regulations and relevant orders of the Secretary of Labor issued pursuant thereto. Neither lessee nor lessee's subcontractors shall maintain segregated facilities.

Sec. 11. Transfer of lease interests and relinquishment of lease—As required by regulations, lessee shall file with lessor any assignment or other transfer of an interest in this lease. Lessee may relinquish this lease or any legal subdivision by filing in the proper office a written relinquishment, which shall be effective as of the date of filing, subject to the continued obligation of the lessee and surety to pay all accrued rentals and royalties.

Sec. 12. Delivery of premises—At such time as all or portions of this lease are returned to lessor, lessee shall place affected wells in condition for suspension or abandonment, reclaim the land as specified by lessor and, within a reasonable period of time, remove equipment and improvements not deemed necessary by lessor for preservation of producible wells.

Sec. 13. Proceedings in case of default—If lessee fails to comply with any provisions of this lease, and the noncompliance continues for 30 days after written notice thereof, this lease shall be subject to cancellation unless or until the leasehold contains a well capable of production of oil or gas in paying quantities, or the lease is committed to an approved cooperative or unit plan or communitization agreement which contains a well capable of production of unitized substances in paying quantities. This provision shall not be construed to prevent the exercise by lessor of any other legal and equitable remedy, including waiver of the default. Any such remedy or waiver shall not prevent later cancellation for the same default occurring at any other time. Lessee shall be subject to applicable provisions and penalties of FOGRMA (30 U.S.C. 1701).

Sec. 14. Heirs and successors-in-interest—Each obligation of this lease shall extend to and be binding upon, and every benefit hereof shall inure to the heirs, executors, administrators, successors, beneficiaries, or assignees of the respective parties hereto.

☆ U.S. Government Printing Office: 1988—573-017/86009

Form 3109–1
(December 1972)
(formerly 3103–1)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

LEASE STIPULATIONS

BUREAU OF RECLAMATION

The lessee agrees to maintain, if required by the lessor during the period of this lease, including any extension thereof, an additional bond with qualified sureties in such sum as the lessor, if it considers that the bond required under Section 2(a) is insufficient, may at any time require:

(a) to pay for damages sustained by any reclamation homestead entryman to his crops or improvements caused by drilling or other operations of the lessee, such damages to include the reimbursement of the entryman by the lessee, when he uses or occupies the land of any homestead entryman, for all construction and operation and maintenance charges becoming due during such use or occupation upon any portion of the land so used and occupied;

(b) to pay any damage caused to any reclamation project or water supply thereof by the lessee's failure to comply fully with the requirements of this lease; and

(c) to recompense any nonmineral applicant, entryman, purchaser under the Act of May 16, 1930 (46 Stat. 367), or patentee for all damages to crops or to tangible improvements caused by drilling or other prospecting operations, where any of the lands covered by this lease are embraced in any nonmineral application, entry, or patent under rights initiated prior to the date of this lease, with a reservation of the oil deposits, to the United States pursuant to the Act of July 17, 1914 (38 Stat. 509).

As to any lands covered by this lease within the sres of any Government reclamation project, or in proximity thereto, the lessee shall take such precautions as required by the Secretary to prevent any injury to the lands susceptible to irrigation under such project or to the water supply thereof; *provided* that drilling is prohibited on any constructed works or right-of-way of the Bureau of Reclamation, and *provided, further*, that there is reserved to the lessor, its successors and assigns, the superior and prior right at all times to construct, operate, and maintain dams, dikes, reservoirs, canals, wasteways, laterals, ditches, telephone and telegraph lines, electric transmission lines, roadways, appurtenant irrigation structures, and reclamation works, in which construction, operation, and maintenance, the lessor, its successors and assigns, shall have the right to use any or all of the lands herein described without making compensation therefor, and shall not be responsible for any damage from the presence of water thereon or on account of ordinary, extraordinary, unexpected, or unprecedented floods. That nothing shall be done under this lease to increase the cost of, or interfere in any manner with, the construction, operation, and maintenance of such works. It is agreed by the lessee that, if the construction of any or all of said dams, dikes, reservoirs, canals, wasteways, laterals, ditches, telephone or telegraph lines, electric transmission lines, roadways, appurtenant irrigation structures or reclamation works across, over, or upon said lands should be made more expensive by reason of the existence of the improvements and workings of the lessee thereon, said additional expense is to be estimated by the Secretary of the Interior, whose estimate is to be final and binding upon the parties hereto, and that within thirty (30) days after demand is made upon the lessee for payment of any such sums, the lessee will make payment thereof to the United States, or its successors, constructing such dams, dikes, reservoirs, canals, wasteways, laterals, ditches, telephone and telegraph lines, electric transmission lines, roadways, appurtenant irrigation structures, or reclamation works, across, over, or upon said lands; *provided, however*, that subject to advance written approval by the United States, the location and course of any improvements or works and appurtenances may be changed by the lessee; *provided, further*, that the reservations, agreements, and conditions contained in the within lease shall be and remain applicable notwithstanding any change in the location or course of said improvements or works of lessee. The lessee further agrees that the United States, its officers, agents, and employees, and its successors and assigns shall not be held liable for any damage to the improvements or workings of the lessee resulting from the construction, operation, and maintenance of any of the works hereinabove enumerated. Nothing in this paragraph shall be construed as in any manner limiting other reservations in favor of the United States contained in this lease.

THE LESSEE FURTHER AGREES That there is reserved to the lessor, its successors and assigns, the prior right to use any of the lands herein leased, to construct, operate, and maintain dams, dikes, reservoirs, canals, wasteways, laterals, ditches, telephone and telegraph lines, electric transmission lines, roadways, or appurtenant irrigation structures, and also the right to remove construction materials therefrom, without any payment made by the lessor or its successors for such right, with the agreement on the part of the lessee that if the construction of any or all of such dams, dikes, reservoirs, canals, wasteways, laterals, ditches, telephone and telegraph lines, electric transmission lines, roadways, or appurtenant irrigation structures across, over, or upon said lands or the removal of construction materials therefrom, should be made more expensive by reason of the existence of improvements or workings of the lessee thereon, such additional expense is to be estimated by the Secretary of the Interior, whose estimate is to be final and binding upon the parties hereto, and that within thirty (30) days after demand is made upon the lessee for payment of any such sums, the lessee will make payment thereof to the United States or its successors constructing such dams, dikes, reservoirs, canals, wasteways, laterals, ditches, telephone and telegraph lines, electric transmission lines, roadways, or appurtenant irrigation structures across, over, or upon said lands or removing construction materials therefrom. The lessee further agrees that the lessor, its officers, agents, and employees and its successors and assigns shall not be held liable for any damage to the improvements or workings of the lessee resulting from the construction, operation, and maintenance of any of the works herein above enumerated. Nothing contained in this paragraph shall be construed as in any manner limiting other reservations in favor of the lessor contained in this lease.

(Signature of Lessee)

(Continued on reverse)

GP-135
(06/90)

SPECIAL STIPULATION-BUREAU OF RECLAMATION

To Avoid interference with recreation development and/or impacts to fish and wildlife habitat and to assist in preventing damage to any Bureau of Reclamation dams, reservoirs, canals, ditches, laterals, tunnels, and related facilities, and contamination of the water supply therein, the lessee agrees that the following conditions shall apply to all exploration and developmental activities and other operation of the works thereafter on lands covered by this lease:

1. Prior to commencement of any surface-disturbing work including drilling, access road work, and well location construction, a surface use and operations plan will be filed with the appropriate officials. A copy of this plan will be furnished to the Regional Director, Missouri Basin Region, Bureau of Reclamation, P. O. Box 36900, Billings, MT 59107-6900, for review and consent prior to approval of the plan. Such approval will be conditioned on reasonable requirements needed to prevent soil erosion, water pollution, and unnecessary damages to the surface vegetation and other resources, including cultural resources, of the United States, its lessees, permittees, or licensees, and to provide for the restoration of the land surface and vegetation. The plan shall contain provisions as the Bureau of Reclamation may deem necessary to maintain proper management of the water, recreation, lands, structures, and resources, including cultural resources, within the prospecting, drilling, or construction area.

Drilling sites for all wells and associated investigations such as seismograph work shall be included in the above-mentioned surface use and operation plan.

If later explorations require departure from or additions to the approved plan, these revisions, will be submitted for approval to the Regional Director, Missouri Basin Region, Bureau of Reclamation, or his authorized representative.

Any operations conducted in advance of approval or an original, revised, or amended prospecting plan, or which are not in accordance with an approved plan constitute a violation of the terms of this lease. The Bureau of Reclamation reserves the right to close down operations until such corrective action, as is deemed necessary, is taken by the lessee.

2. No occupancy of the surface of the following excluded area is authorized by this lease. It is understood and agreed that the use of these areas for Bureau of Reclamation purposes is superior to any other use. The excluded areas are:

a. Within 500 feet on either side of the centerline of any and all roads or highways within the leased area.

b. Within 200 feet on either side of the centerline of any and all trails within the leased area.

c. Within 500 feet of the normal high-water line of any and all live streams in the leased area.

d. Within 400 feet of any and all recreation developments within the leased area.

e. Within 400 feet of any improvements either owned, permitted, leased, or otherwise authorized by the Bureau of Reclamation within the leased area.

f. Within 200 feet of established crop fields, food plots, and tree/shrubs plantings within the leased area.

g. Within 200 feet of slopes steeper than a 2:1 gradient within the leased area.

h. Within established rights-of-way of canals, laterals, and drainage ditches within the leased area.

i. Within a minimum of 500 feet horizontal from the centerline of the facility or 50 feet from the outside toe of the canal, lateral, or drain embankment, whichever distance is greater, for irrigation facilities without clearly marked rights-of-way within the leased area.

3. No occupancy of the surface or surface drilling will be allowed in the following areas. In addition, no directional drilling will be allowed that would intersect the subsurface zones delineated by a vertical plane in these areas. The following restrictions apply only toFederal minerals located within the boundary of a Bureau of Reclamation project.

a. Within 1,000 feet of the maximum water surface, as defined in the Standing Operating Procedures (SOP), of any reservoirs and related facilities located within the leased area.

b. Within 2,000 feet of dam embankments and appurtenance structures such as spillway structures, outlet works, etc.

c. Within one-half (1/2) mile horizontal from the centerline of any tunnel within the leased area.

4. The distances stated in items 2 and 3 above are intended to be general indicators only. The Bureau of Reclamation reserves the right to revise these distances as needed to protect Bureau of Reclamation facilities.

5. The use of explosives in any manner shall be so controlled that the works and facilities of the United States, its successors and assigns will in no way be endangered or damaged. In this connection, an explosives use plan shall be submitted to and approved by the Regional Director, Missouri Basin Region, Bureau of Reclamation, or his authorized representative.

6. The lessee shall be liable for all damage to the property of the Untied States, its successors and assigns, resulting from the exploration, development, or operation of the works contemplated by this lease, and shall further hold the United States, its successors and assigns, and its officers, agents, and employees, harmless from all claims of third parties for injury or damage sustained or in any way resulting from the exercise of the rights and privileges conferred by this lease.

7. The lessee shall be liable for all damage to crops or improvements of any entryman, nonmineral applicant, or patentee, their successors and assigns, caused by or resulting from the drilling or other operations of the lessee, including reimbursement of any entryman or patentee, their successors and assigns, for all construction, operation, and maintenance charges becoming due on any portion of their said lands damaged as a result of the drilling or other operations of the lessee.

8. In addition to any other bond required under the provisions of this lease, the lessee shall provide such bond as the United States may at any time require for damage which may arise under the liability provisions of sections six (6) and seven (7) above.

Date	Signature of Lessee

SPECIAL STIPULATIONS 1-A

1. All oil and gas drilling and production operations shall be under the supervision of the District Manager, Bureau of Land Management (BLM), in accordance with 43 Code of Federal Regulations 3160.

2. The Secretary of the Army or designee reserves the right to require cessation of operations if a national emergency arises of if the Army needs the leased property for a mission incompatible with lease operations. On approval from higher authority, the District Engineer will give notice of the required suspension. The lessee agrees to this condition and waives compensation for its exercise.

3. If the District Engineer or his authorized representative discovers an imminent danger to safety or security which allows no time to consult BLM, that person may order such activities stopped immediately. The District Manger, BLM, will be notified immediately, will review the order, and will determine the need for further remedial action.

4. Lessee liability for damage to improvements shall include improvements of the Department of Defense. Lessee shall be liable for pollution and other damages, as a result of their operations, to Government-owned land and property and to the property of the Government's authorized surface user.

5. Before beginning to drill, the lessee must consult with third parties authorized to use real estate in the lease area and must consider programs for which third parties have contractual responsibility.

6. A license to conduct geophysical test on the leased area must be obtained separately from the District Engineer.

7. That all rights under this lease are subordinate to the rights of the United States to flood and submerge the lands, permanently or intermittently, in connection with the operation and maintenance of the above-named project.

8. That the United States shall not be responsible for damages to property or injuries to persons which may arise from or be incident to the use and occupation of the said premises, or for damages to the property of the lessee, or for injuries to the person of the lessee's officers, agents, servants, or employees, or others who may be on said premises at their invitation or the invitation of any one of them arising from or incident to the flooding of the said premises by the Government or flooding from any other cause, or arising from or incident to any other governmental activities; and the lessee shall hold the United States harmless from any and all such claims.

9. That the work performed by the lessee on the lands shall be under the general supervision of the District Engineer, Corps of Engineers in direct charge of the project and subject to such conditions and regulations as may be prescribed by him, and the plans and locations for all structures, appurtenances thereto, and work on said lands shall be submitted to the said District Engineer for approval in advance of commencement of any work on said lands. The District Engineer shall have the right to enter on the premises, at any time, to inspect both the installation and operational activities of the lessee.

10. That no structure or appurtenance thereto shall be of a material or construction determined to create floatable debris.

11. That the construction and operation of said structures and appurtenances thereto shall be of such a nature as not to cause pollution of the soils and the waters of the project.

12. That the United States reserves the right to use the land jointly with the lessee in connection with the construction, operation, and maintenance of the Government project and to place improvements thereon or to remove materials therefrom, including sand and gravel and other construction material, as may be necessary in connection with such work, and the lessee shall not interfere in any manner with such work, and the lessee shall not interfere in any manner with such work or do any act which may increase the cost of performing such work. If the cost of the work performed on land outside the property included in the lease is made more expensive by reason of improvements constructed on the leased property by the lessee, the lessee shall pay to the United States money in the amount, as estimated by the Chief of Engineers, sufficient to compensate for the additional expense involved.

13. All areas within 2,000 feet of any major structure, including but not limited to the dam, spillway, or embankment, are restricted areas. The lessee, his operators, agents, or employees shall not utilize the surface of restricted areas for any purpose. Drilling operations in, on, or under the restricted areas, including drilling outside of the restricted areas which would cause a bore hole to be under the restricted area, will not be permitted. The restricted areas are included in the lease for the sole purpose of becoming part of a drilling unit so that the United States will share in the royalty of the unit.

14. All existing or proposed public use areas, recreation areas, wildlife and waterfowl refuges, historical sites, and hiking and horseback trail areas may be leased for the sole purpose of becoming a part of a drilling unit. The lessee, his operators, agents, or employees will not use or enter upon the surface for any purpose. DIrectional drilling from non-public areas is permitted if not otherwise restricted.

15. No drilling will be permitted from Government-owned surface where alternate surface use is available within the same drilling unit.

16. All storage tanks and slush pits will be protected by dikes of sufficient capacity to protect the reservoir from pollution to flood pool elevation ^C.^C feet, National Geodetic Vertical Datum.

17. It is the responsibility of the lessee to identify and be aware of areas where entry is prohibited. ^C There will be no surface or subsurface entry within 2,000 feet of the dam structure. A portion of the lease includes the ^C Public Use Area, therefore, stipulation ^C is applicable. Stipulation ^C also applies to portions of the lease area.

18. The operator will immediately stop work and advise the District Engineer or his authorized representative if contamination is found in the operating area.

BLM Serial Number _____
Project _____

STIPULATIONS FOR OIL AND GAS LEASES
United States Department of the Interior
Bureau of Land Management

LANDS UNDER JURISDICTION OF
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS (WATER RESOURCE PROJECTS)

The lands embraced in this lease pursuant to the Mineral Leasing Act of 1920 (30 U.S.C. 181 et seq.) or the Mineral Leasing Act for Acquired Lands of 1947 (30 U.S.C. 351 et seq.) are under the jurisdiction of the Department of the Army, Corps of Engineers, as the Surface Managing Agency, hereinafter referred to as the "SMA", and are subject to further controls established by the Engle Act (43 U.S.C. 155 et seq).

The lands described are a part of a water resource multi-purpose project, authorized by Congress for flood control, water supply, navigation, recreation, wildlife, and other purposes. Rights under this lease are subordinate to the rights of the United States for the management, operation and maintenance of the Project including public use and the right to flood and submerge the lands intermittently, and to remove materials therefrom.

1. That all rights under this lease are subordinate to the rights of the United States to flood and submerge the lands, permanently or intermittently, in connection with the operation and maintenance of the above-named project.

2. That the United States shall not be responsible for damages to property or injuries to persons which may arise from or be incident to the use and occupation of the said premises, or for damages to the property of the lessee, or for injuries to the person of the lessee (if an individual), or for damages to the property or injuries to the person of the lessee's officers, agents, servants, or employees, or other who may be on said premises at their invitation or the invitation of any one of them arising from or incident to the flooding of the said premises by the Government or flooding from any other cause, or arising from or incident to any other governmental activities; and the lessee shall hold the United States harmless from any and all such claims.

3. That the work performed by the lessee on the lands shall be under the general supervision of the District Commander, Corps of Engineers, in direct charge of the project and subject to such conditions and regulations as may be prescribed by him. Prior to lessee developing plan of operation involving any surface disturbing activity, including routes to be used for vehicular access and plans and locations for all structures and appurtenances thereto, the lessee shall contact the SMA for information to develop such surface use program. There shall be no surface disturbance prior to compliance by lessee with applicable BLM Onshore Oil and Gas Operation Procedures (43 CFR, Part 3160), including Oil and Gas Orders and Notice to Lessees (NTL'S).

The lessee must obtain permission (through BLM) of the SMA and subordinate holders of interest (or third parties having contractual responsibility) and approval of the plan of operation from the SMA prior to any surface disturbing activity. The District Commander shall have the right to enter on the premises at any time, to inspect both the installation and operational activities of the lessee.

4. That no structure or appurtenance thereto shall be of a material or construction determined to create floatable debris.

5. That the construction and operation of said structures and appurtenances thereto shall be of such a nature as not to cause pollution of the soils and the waters of the project.

6. That the United States reserves the right to use the land jointly with the lessee in connection with the construction, operation, and maintenance of the Government project and to place improvements thereon or to remove materials therefrom, including sand and gravel and other construction material, as may be necessary in connection with such work, and the lessee increase the cost of performing such work. If the cost of the work performed by the Government at and in connection with the project, including work performed on lands outside the property included in the lease, is made more expensive by reason of improvements constructed on the leased property by the lessee, the lessee shall pay to the United States money in an amount, as estimated by the Chief of Engineers, sufficient to compensate for the additional expense involved.

7. No drill related structures (rigs, collector lines, reserve pits, access roads, storage tanks, etc.) will be allowed for placement in the following restricted areas:

a. Within 2,000 feet of any structure, including, but not limited to the dam, spillway or embankment areas. The lessee, his operators, agents, or employees shall not utilize the surface of such areas for any purpose. Drilling operations in, on, or under these areas, including drilling outside of such areas which would cause a bore hole to be under these areas, will not be permitted. These areas are included in the lease for the sole purpose of becoming a part of a drilling unit so that the United States will share in the royalty of the unit. The lessee shall be fully responsible for any damaging subsidence from extraction thereunder.

b. within the boundaries of designated Corps or state operated public use areas, and special recreation areas (hiking trails, horseback trails, etc.).

c. within areas leased to cities, townships, or quasi-public groups for park and recreational purposes,

d. below elevations, ft. m.s.l.,

e. within incorporated town, villages, or city limits,

f. within unique ecological areas,

g. historical sites,

h. wildlife and waterfowl refuges,

i. within 100 feet of public roadways or 300 feet of occupied buildings.

The lessee, his operators, agents, or employees will be prohibited from use or entry upon the surface of restricted areas for any purpose. With the exception of lands covered in paragraph 7.a. above, directional drilling from non-restricted areas is prohibited.

8. The Secretary of the Army or designee reserves the right to require cessation of operations in a national emergency of if the Army needs the premises for a use incompatible with lease operations. On approval by higher authority, the Commander will notify the lessee in writing or, if time permits, requests the BLM to notify the lessee. The lessee understands that rights granted by this lease do no include the period of any such cessation, and the United States has no obligation to compensate the lessee for damages or contractual losses resulting from exercise of this stipulation. The lessee shall include this stipulation in contracts with third parties to supply oil and gas. This stipulation shall not affect the lessee's right to seek suspension of the lease term from BLM.

9. If the Commander or the Commander's authorized representative discovers an imminent danger to safety or security which allows no time to consult BLM, that person may order such activities stopped immediately. The state BLM director will be notified immediately, will review the order, and will determine the need for further remedial action.

10. If contamination is found in the operating area, either from mineral lessee's operations or existing conditions, the operator will immediately stop work and consult with the District Commander, or his authorized representative in analyzing the problem and developing a remedial plan.

11. In furtherance of Section 9 of the lease, lessee liability for damage to improvements and all natural resources and waters of the project shall include improvements of the Department of Defense and any surface users authorized by the Department of Defense.

12. Before beginning to drill, the lessee must consult with third parties authorized to use real estate in the leased area and must take into consideration programs for which third parties have contractual responsibility.

13. A license to conduct geophysical tests on the leased area must be obtained separately from the Commander or his authorized representative.

14. Prior to beginning operations, the lessee will appoint and retain a local agent who may be served notice concerning matters in these stipulations and who will notify the SMA instantly in the event of pollution, potential spills or other hazards encountered.

15. The lessee will be liable for pollution or other damages, as a result of their operations, to Government-owned lands and property and to the property of the Government's authorized surface user.

16. That it is understood that this instrument is effective only insofar as the rights of the United States in the said property are concerned; and that the lessee shall obtain such permission as may be necessary on account of any other existing rights whether or not granted by the Government. It is further understood that the Government does not warrant title or the accuracy of the descriptions provided in the lease.

17. Land and water areas included under a fish and wildlife management license agreement with a State agency, or allocated in the Master Plan for Fish and Wildlife Management, will be subject to the special Kansas City District Corps of Engineers Lease Stipulations for Wildlife Lands.

_____

Signature of Lessee

_____

Date of Signature

BLM Serial Number _____
Project _____

KANSAS CITY DISTRICT CORPS OF ENGINEERS
STIPULATION FOR LANDS DESIGNATED FOR THE
MANAGEMENT OF WILDLIFE

Lands and water areas of the Project are managed for multipurposes and may be included under a fish and wildlife management license with a State agency, permitted to the USF&WLS, or allocated in the Master Plan for Fish and Wildlife Management, and will be subject to special stipulations to insure the mitigation, protection and/or enhancement of wildlife and wildlife habitat. Surface disturbance will be restricted to those areas with insignificant impact to wildlife resources, and will be prohibited in areas providing habitat for threatened or endangered species, refuges, critical habitat of the key management species, and/or unique breeding grounds. The time period or location where construction, drilling, production or restoration activity can occur (or is required to be accomplished) may be specified to avoid impact to seasonal hunting, breeding, migration or fire hazard, to include seasonal occupancy, controlled access, limits on noise generation, lighting and use of explosives. Vegetation must be preserved, sludge or flare pits covered, erosion repaired, and scars revegetated. Access roads must be maintained for collateral use with the public where hunting or fishing is authorized, and when no longer required by the lessee shall be brought to useable standards for continued public access, or obliterated and revegetated, at the option of the lessor. Ancillary equipment will be removed immediately when no longer needed for production.

_____
Signature of Lessee

_____
Date of Signature

GLOSSARY

GLOSSARY

ADVISORY COUNCIL ON HISTORIC PRESERVATION (ACHP) - A federal council that reviews the actions taken by agency officials which affect historic properties (cultural resources).

ALTERNATIVE - The different ways of addressing the planning issue(s) and management activities considered in the planning process. These provide the decisionmaker and the public a clear basis for choices among options. Every planning effort involves the development of several complete, reasonable alternatives for resolving the issue(s). One of the alternatives offered is the continuation of present management (no change) while the other alternatives provide a range of choices for resolution of the issues. One of the alternatives is selected at the end of the planning process and approved as the plan.

AUTHORIZED OFFICER - Any person authorized by the Secretary of the Interior, or his representative, to administer regulations.

CANDIDATE SPECIES - Category I: Plant and animal species for which the USFWS currently has on file substantial information to support a proposal to list as threatened or endangered. Category II: Plant and animal species for which current information indicates that a proposal to list as threatened or endangered is possibly appropriate, but for which more information is needed to support a listing proposal.

CULTURAL RESOURCES - Any cultural, archeological, historical, or architectural site, building, structure, District, or object.

CUMULATIVE IMPACT - The environmental impact resulting from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions, regardless of the agency (federal or non-federal) or person(s) undertaking other actions. Cumulative impacts can result from individual minor, but collectively significant, actions taking place over a period of time.

ENDANGERED SPECIES - An animal or plant whose prospects of survival and reproduction are in immediate jeopardy, and as further defined by the Endangered Species Act of 1973, as amended.

ENDANGERED SPECIES ACT OF 1973 - (as amended): Federal law to ensure that no federal action will jeopardize federally listed or proposed threatened or endangered species of plants or animals.

ENVIRONMENTAL IMPACT STATEMENT (EIS) - A written analysis of the impacts on the environment of a proposed project or resource management plan.

FEDERAL LAND POLICY AND MANAGEMENT ACT OF 1976 (FLPMA) - Public Law 94-579, which gives the BLM legal authority to establish public land policy, to establish guidelines for administering such policy and to provide for the management, protection, development, and enhancement of the public land.

FLOODPLAIN - The nearly level alluvial plain that borders a stream or river and is subject to inundation during high water periods; the relatively flat area or lowland adjoining a body of standing or flowing water which has been or might be covered by floodwaters.

HABITAT- A specific set of physical conditions that surround a species, group of species or a large community. In wildlife management, the major constituents are considered to be food, water, cover, and living space.

HISTORIC PROPERTY - Any prehistoric or historic cultural resource.

HISTORIC SITE - The specific location of any cultural resource created after the time of first contact between European explorers and native Indians in each local area.

INDIAN TRIBE - The governing body of any Indian tribe, band, nation, or other group that is recognized by the Secretary of Interior and for which the United States holds land in trust or restricted status for that entity or its members.

INTEREST - The most general term that can be employed to denote a property in lands or chattels. In its application to lands or things real, it is frequently used in connection with the term "estate," "right," and "title," and includes them all. The terms "interest" and "title" are not synonymous. "Interest" more particularly means a right to have the advantage accruing from something; a partial or undivided right, but less than title.

INVERTEBRATE - An animal lacking a backbone or spinal column.

ISSUE - A matter of controversy over resource management activities that is typically discrete and provides alternatives for a decision. Typically the causal relationship between the activity and undesirable results is documentable and the level of controversy is high enough to merit further analysis. Statement of the planning issue orients the resource management planning process so the vigor of interdisciplinary thought, analysis, and documentation is directed toward resolving the planning issues during the preparation of a Resource Management Plan.

LEASE NOTICE - Provides more detailed information concerning limitations that already exist in law, lease terms, regulations, or operational orders. A Lease Notice also addresses special items the lessee would consider when planning operations, but does not impose new or additional restrictions.

LEASE STIPULATIONS - Additional specific terms and conditions that change the manner in which operation may be conducted on a lease, or modify the lease rights granted.

MANAGEMENT SITUATION ANALYSIS (MSA) - A step in the BLM planning process that identifies existing management, physical resources, and opportunities to meet the needs, concerns, and issues identified through resource management planning. The MSA results in a reference document, which is kept in the resource area office. The MSA document is open for public inspection but is not distributed to the public.

MEMORANDUM OF UNDERSTANDING (MOU) - Signed pact between two entities agreeing to some course of action or inaction.

MEGAFAUNA - Animals, living or fossil, that are large enough to be seen and studied with the unaided eye (especially the largest mammals like horse, mammoth, camel, bear, etc.)

MITIGATION - The alleviation or lessening of possible adverse effects upon a resource by application of appropriate protective measures or adequate scientific study.

MINERAL ESTATE - Mineral and/or subsurface ownership.

MITIGATION MEASURES - Methods or procedures committed to by BLM for the purpose of reducing or lessening the impacts of an action.

NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (NEPA) - Public Law 91-190. Establishes environmental policy for the nation. Among other items, NEPA requires federal agencies to consider environmental values in decision-making processes.

NATIONAL HISTORIC PRESERVATION ACT (NHPA) - The primary federal law providing for the protection and preservation of our cultural resources. Making it a national policy to preserve our cultural heritage, NHPA established the National Register of Historic Places, the Advisory Council on Historic Preservation and State Historic Preservation Officers.

NATIONAL REGISTER OF HISTORIC PLACES (NRHP) - A list of districts, sites, buildings, structures and objects significant in American history, architecture, archeology and culture maintained by the Secretary of the Interior. Expanded as authorized by Section 2(b) of the Historic Sites Act of 1935 (16 U.S.C. 462) and Section 101(a)(1) (A) of the National Historic Preservation Act.

NATIONAL REGISTER QUALITY SITE - A cultural resource site determined to be eligible for nomination to the National Register of Historic Places by virtue of its local, state or national significance.

NO SURFACE OCCUPANCY (NSO) - A fluid mineral leasing stipulation that prohibits occupancy or disturbance on all or part of the lease surface in order to protect special values or uses. Lessees may exploit the oil and gas or geothermal resources under leases restricted by this stipulation through use of directional drilling from sites outside the no surface occupancy area.

PALEONTOLOGICAL RESOURCE - Any impressions, footprints, trackways, fossilized, or preserved organic remains not associated with a cultural resource.

PATENT - A grant of some privilege, property, or authority, made by the Government, or sovereign of a country to one or more individuals. A land patent is a muniment of title issued by a government or state for the conveyance of some portion of public domain.

PUBLIC PARTICIPATION - Part of the BLM's planning system that provides the opportunity for citizens as individuals or groups to express local, regional and national perspectives and concerns in the rulemaking, decisionmaking, inventory and planning processes for public land. This includes public meetings, hearings or advisory boards or panels that may review resource management proposals and offer suggestions or criticisms for the various alternatives considered.

PREHISTORIC SITE - (opposite of historic site) the specific location of an cultural resource created before the time of the first contact between European explorers and the native tribes of that area.

RECLAMATION - Returning disturbed lands to a form and productivity that will be ecologically balanced and in conformity with a predetermined land management plan.

RECREATION AND PUBLIC PURPOSES ACT (R&PP) - This Act authorizes the Secretary of the Interior to lease or convey public lands for recreational and public purposes under specified conditions to states or their political subdivisions, and to nonprofit corporations and associations.

RESOURCE AREA - The smallest administrative subdivision of a BLM district.

RIPARIAN HABITAT (AREAS) - Areas of land directly influenced by permanent water and having visible characteristics, e.g., vegetation, reflective of the presence of permanent water, i.e., surface and/or subsurface.

SCOPING PROCESS - An early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. Scoping may involve public meetings, field interviews with representatives of agencies and interest groups, discussions with resource specialists and managers, written comments in response to news releases, direct mailings and articles about the proposed action and scoping meetings.

STATE HISTORIC PRESERVATION OFFICER (SHPO) - is the official appointed by each state's Governor to lead that state's historic preservation program and review all actions that affect the state's National Register Sites.

SPECIAL STATUS SPECIES - Wildlife and plant species either federally listed or proposed for listing as endangered or threatened, state-listed or BLM-determined priority species.

SURFACE MANAGING AGENCY (SMA) - is that agency of the federal government which has the primary control and responsibility over a particular area of land (such as the National Park Service, the U.S. Forest Service, the Bureau of Reclamation, Army Corps of Engineers, or the Bureau of Land Management).

SPLIT ESTATE - Lands where the owner of the mineral rights and the surface owner are not the same party in interest. The most common split estate is Federal ownership of mineral rights and other interest ownership of the surface.

Lands or real estate where the federal government owns the sub-surface mineral rights, and the surface is owned by a private citizen or business.

THREATENED SPECIES - Any plant or animal species that is likely to become an endangered species throughout all or a significant portion of its range, as defined by the U.S. Fish and Wildlife Service under the authority of the Endangered Species Act of 1973.

TIMING LIMITATION (SEASONAL RESTRICTION) - Prohibits surface use during specified time periods to protect identified resource values. The stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

VEGETATION - Plants in general or the sum total of the plant life above and below ground in an area.

VERTEBRATE - An animal having a backbone or spinal column.

ACRONYMS

APD	Application for Permit to Drill
AIRFA	American Indian Religion Freedom Act of 1978
ARPA	Archeological Resources Protection Act of 1966
BLM	Bureau of Land Management
BOR	Bureau of Reclamation
CFR	Code of Federal Regulations
CNG	Cimarron National Grasslands
COA	Conditions of Approval
COE	Corp of Engineers
DOD	Department of Defence
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
F	Fahrenheit
FLPMA	The Federal Land Policy and Management Act
FMA	Fluid Mineral Assessment
FR	Federal Register
KBS	Kansas Biological Survey
KBSNHP	Kansas Biological Survey's National Heritage Program
KCCOE	Kansas City District of Corp of Engineers
KDWP	Kansas Department of Wildlife and Parks
KGS	Kansas Geological Survey
KSNHP	Kansas Natural Heritage Program
MKT	Missouri, Kansas, Texas
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding

MSA	Management Situation Analysis
MWS	Maximum Water Surface
NEPA	National Environmental Policy Act
NESA	National Environmental Study Area
NHPA	National Historic Preservation Act of 1966
NRHP	National Register of Historic Places
NSO	No Surface Occupancy
NWI	National Wetland Inventory
ORA	Oklahoma Resource Area
PA	Planning Analysis
R&PP	Recreation and Public Purpose Act
RFD	Reasonable Foreseeable Development
RMP	Resource Management Plan
SCS	Soil Conservation Service
SHPO	State Historic Preservation Officer
SMA	Surface Management Agency
SPA	Supplemental Planning Analysis
SSS	Special Status Species
STC	Standard Terms and Conditions
TDCOE	Tulsa District of Corp of Engineers
T/E	Threatened or Endangered
USDA	U.S. Department of Agriculture
USDI	U.S. Department of the Interior
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

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