Environmental Assessment (EA)
For
Oil & Gas Competitive Leasing
Certain Parcels within the
Bakersfield Field Office
September 12, 2007

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Environmental Assessment (EA) for Leasing Certain Parcels within the Bakersfield Field Office for the September 12, 2007 Oil and Gas Lease Sale

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INTRODUCTION

The proposed action is to offer approximately 16,765.67 acres of Federal mineral estate for competitive oil and gas leasing. This action is intended to meet Bureau of Land Management (BLM) responsibilities under the Mineral Leasing Act of 1920, as amended, Mining and Minerals Policy Act of 1980, and the Federal Onshore Oil and Gas Leasing Reform Act of 1987 (Reform Act), to conduct competitive oil and gas lease auctions within the state of California.

BLM has the responsibility to conduct quarterly competitive oil and gas lease auctions in accordance with Section 5102(2)(1)(A) of the Reform Act. The Reform Act directs the BLM to conduct quarterly oil and gas lease auction within each state whenever eligible lands are available for leasing. BLM policy is to offer, as expeditiously as possible, those lands available for oil and gas exploration and possible development, consistent with the Federal Land policy and Management Act (FLPMA) of 1976, National Environmental Policy Act (NEPA) of 1969, and other applicable laws, regulations, and policies.

Nearly all of the lands were nominated by industry, and therefore represent areas of high interest (See Appendix A description of lands). The parcel descriptions in Appendix A are based on the Expressions of Interest filed by industry; however, the lands will be re-parcelized for the Lease Sale Notice, which will create additional parcels. Of the approximately 16,765.67 acres of Federal mineral estate land that are considered for leasing, approximately 4,456.40 acres are public surface with Federal mineral rights and approximately 12,309.27 are split-estate (private surface with Federal subsurface minerals). All parcels would be subject to special leasing stipulations that would protect both endangered species and sensitive species and their habitat.

This Environmental Analysis (EA) is tiered to the Caliente Resource Management Plan/Environmental Impact Statement (RMP/EIS) dated May 5, 1997. The RMP/EIS is the most current land use plan located in the BLM Bakersfield Field Office. A more complete description of activities and impacts related to oil and gas leasing, development, production, etc. can be found in Chapter 5, page 33 of the RMP. Whether specifically mentioned or not, standard operating practices in the oilfield include measures to protect the environment and resources such as groundwater, air, wildlife, historical and prehistoric concerns, and others.

I. Background on BLM Oil and Gas Leasing and Lease Management

1. Federal Lands

BLM administers public land in accordance with the Federal Land Policy and Management Act (FLPMA) of 1976 and other laws. Sometimes public land includes the surface estate and the subsurface mineral estate, and sometimes it involves split estate where BLM controls either the surface or subsurface mineral estate but not both. BLM can lease public land including split estate lands where the surface estate is owned by another party. For parcels considered in this EA that are split estate, the lessee and/or operator would be responsible not only for adhering to BLM requirements, but also for reaching an agreement with the private surface landowner regarding access, surface disturbance and reclamation.

2. Review process

The phased approach for NEPA compliance has been determined by the Ninth Circuit Court of Appeals to be a valid method to comply with applicable laws and regulations (see Ninth Circuit Court of Appeals, Northern Alaska Environmental Center et al *vs.* Kempthorne, 2006). In that decision, the Court said "Uncertainty is inherent in multi-staged projects and a phased analysis for both environmental and cultural (is appropriate)." At the leasing stage, a more generalized study is appropriate because it is not

yet known which, if any, of the parcels will actually be developed, and the site specific analysis is more appropriately deferred to when development is proposed.

The Secretary of the Interior is responsible under the Mineral Leasing Act of 1920, as amended, for leasing and managing Federal oil and gas resources on public land. Acting for the Secretary, BLM has conducted ongoing oil and gas leasing activities for many years in the Bakersfield Field Office and throughout California.

The review process required before oil and gas drilling can occur is described in detail in Title 43 Code of Federal Regulations part 3100 and BLM Manual 3100. In summary, BLM offers lands for oil and gas lease to the highest qualified bidder in a competitive auction. The lease term is 10 years, and for as long thereafter as oil and gas can be produced in paying quantities, and the maximum lease size offered by BLM is 2,560 acres, (see FOGRA of 1987 Sec. 5102(b)(1)(A)). BLM conducts and documents an environmental document analysis at the lease issuance state, unless an adequate analysis was included in an existing environmental document. Although most of the issues regarding oil and gas leasing on the lands covered by this document were addressed in previous documents, there are a few areas where either conditions have changed or else BLM policy has been modified, or both. Hence, this EA is tiered to the existing document discussed previously.

After obtaining a lease and prior to drilling any well, a lessee and/or operator submits an Application for Permit to Drill (APD), indicating the specific location of the drilling site. BLM conducts and documents additional environmental analysis at the APD stage. BLM may require reasonable mitigation measures in the APD, consistent with the lease terms and stipulations.

3. Directional drilling from adjacent land to a federal lease

BLM has the authority to regulate drilling from adjacent, non-Federal land if Federal minerals are involved by requiring a drilling application. Such directional drilling is subject to applicable environmental laws, including National Environmental Policy Act (NEPA) of 1969 and the Endangered Species Act (ESA) of 1973, as amended. BLM will process this type of application in the same manner as for an application on leased lands.

4. Lease terms and stipulations

A lease for oil and gas gives a lessee (holder of the lease) the right to drill and produce, subject to the lease terms, any special stipulations, other reasonable conditions, and approval of an Application for permit to Drill (APD). The regulations at 43 CFR 3101.1-2 define the reasonable measures which BLM can require of a lessee. These include, but are not limited to, moving the proposed drilling site up to 200 meters, delaying surface disturbance or drilling up to 60 days, or requiring special reclamation measures. Generally, the BLM cannot deny a lessee the right to drill once a lease is issued unless the action is in direct conflict with another existing law. Stipulations such as the Limited Surface Use – Protected Species and Limited Surface Use – Sensitive Species (see Appendices B) are appropriate where sensitive and significant values exist which could be impacted by development of the oil and gas lease.

Any surface disturbing activity requires prior approval of the BLM. Such approval would include a site-specific evaluation and compliance with NEPA requirements. Routine activities including, but not limited to, cleaning out wells, well tests, monitoring activities, repairing and maintenance of equipment, and routine workovers do not require BLM approval, but would require adherence to all applicable laws and regulations.

For those parcels that are 'split-estate' (private surface overlying federal minerals), the BLM requires the lessee/operator to make a good faith effort to obtain an agreement with the private surface owner prior to access on the leased land issued through competitive bid.

Where the lessee/operator is unable to reach a surface use agreement with the private surface owner, the lessee/operator can file a surface owner protection bond. This bond should be in an amount sufficient to protect against damages to the surface as allowed in the statute that reserved the mineral rights to the Federal government However, the minimum of the surface owner protection bond is $1,000.00.

On average, fewer than 5 percent of federal leases are ever drilled; even fewer leases result in producing wells. In fact, out of 498 parcels covering nearly 368,000 acres leased since 7-1-96, only 7 leases have had wells drilled on them, and only one of those had multiple producing wells. Land considered in this EA may have an overall higher potential for development, since some parcels are in or near existing developed fields with actively producing wells and nearly all of them were specifically nominated for oil and gas leasing by the public. However, many of the lands that were leased in the past also met the same criteria, and they were never developed.

II. Purpose and Need for the Action

This action is to conduct a competitive oil and gas lease auction. The BLM periodically conducts mineral estate lease auctions for lands that are managed by the federal government, whether managed by the Department of Interior (BLM, Bureau of Indian Affairs, Fish and Wildlife Service, Park Service), Department of Agriculture (Forest Service), or other Departments.

Federal Onshore Oil and Gas Leasing Reform Act of 1987 Sec. 5102(a)(b)(1)(A) (Reform Act) directs the BLM to conduct quarterly oil and gas lease auctions with each state whenever eligible lands are available for leasing. By conducting a lease auction of the Federal mineral estate, it provides for a potential increase of energy reserves for the U.S., it provides a steady source of significant income, and at the same time meets the requirements identified in the Energy Policy Act, Sec. 362(2), Federal Onshore Oil and Gas Leasing Reform Act of 1987, and The Mineral Leasing Act of 1920, Sec. 17.

III. Description of the Proposed Action and Alternatives

To facilitate discussion, each EOI has been given a 3 digit number (EOI Group Number) ranging from 240 to 251. In addition, a 2 digit number (Parcel Number) has been assigned to the individual parcels within each EOI Group. Generally, all parcels in the same section have the same Parcel Number. The exceptions are EOI Group Number 241and 247 (Parcel Numbers 39 and 40) which both occur in Section 35 of T. 25S., R. 17E., and EOI Group Number 241 and 247 (Parcel Numbers 37 and 80) which both occur in Section 30 of T. 25S., R. 17E. A cross index reference showing the relationship between parcels and EOI group numbers is available upon request from the Bakersfield Field Office.

Map 1 in Appendix A shows the general location of each EOI Group and more details can be found on the website: http://www.blm.gov/ca/st/en/fo/bakersfield. For the actual competitive oil and gas lease auction, new lease parcel numbers will be generated that are different from the EOI Group Number and Parcel Number used in this EA. BLM will provide a crosswalk between the EOI Group Numbers and Parcel Numbers used in this EA and the lease parcel number actually used in the lease auction.

Proposed Action

The proposed action is to offer the unleased federal minerals estate identified by EOI Group Number and Parcel Number on Appendix A for oil and gas competitive auction to develop the federal mineral estate. All of the federal lands (surface and subsurface) are within the jurisdiction of the Bureau of Land Management, Bakersfield, California. The counties involved in this proposal are Kern and Kings. The location range is from Central Kern County to Kings County. EOI Group Number 244, 245, 248, 249, and 250 are within productive oil fields; North Kern Front, Kern Bluff, Kern River, Round Mountain, Railroad Gap & Asphalto, and Shale Gas Point.

All of the parcels would have the Limited Surface Use – Protected Species and Limited Surface Use – Sensitive species stipulations attached to each lease form 3100-11 upon lease issuance. See attached Appendix B for the text of these stipulations.

EOI Group Number 248, proposed for oil and gas competitive lease is within the North Kern Front oil field. This parcel has 19 existing wells with a water waste facility, and it would be in the public's interest to have this parcel leased so that the existing wells can be returned to production. By leasing this parcel, it would prevent the land from becoming 'orphaned' and would also eliminate the cost of plugging, abandoning, and restoring the surface by the Federal government and at the Federal government's expense.

A number of parcels are private surface overlying federal minerals, known as "split-estate". The BLM has split estate guidance, (Washington Instruction Memorandum No. 2003-131) effective April 2003. The guidance addresses the purpose and the action that must be completed prior to any approval for new drilling. It also explains the rights, responsibilities, and opportunities of the BLM, lessee/operator, and the private surface owner. In addition, the recently revised Onshore Order No. 1 also contains details about permits issued on split estate lands.

No Action

Under the No Action alternative, the proposed EOI parcels identified on Appendix A will not be offered for competitive oil and gas auction. In this option, BLM would not meet the requirement to offer lands available for oil and gas auction under the Federal Onshore Oil and Gas Leasing Reform Act of 1987 (Reform Act) and Energy Policy Act of August 5, 2005, Section 362(a)(1). In addition, the potential reserves that might be recovered would not be recovered if the lands were not leased.

Alternatives Considered but Dismissed

Exchange or Sale

In lieu of leasing, all mineral estate lands (split estate lands) under the BLM jurisdiction could be considered potentially suitable for disposal through exchange under Section 206 of FLPMA or sale under Section 209 of FLPMA. Any such disposal would require a site-specific evaluation under the applicable regulations, prior to any final decision on such action. It is not standard BLM policy to dispose of mineral estate containing potentially valuable leaseable minerals, unless unusual circumstances exist. For the subject EOI parcels, there is no overriding reason not to pursue our normal policy of offering the lands for competitive leasing, so this alternative was not further analyzed.

IV. Conformance with the Existing Land Use Plans

The 1997 Caliente Resource Management Plan (RMP identifies all of these lands as open to oil and gas leasing, subject to certain environment controls indicated in the plan, Ch. 5 page 34. Consequently, this action is in conformance with the Plan. Most importantly, because every parcel is within potential

Threatened and Endangered Species and sensitive species habitat, all parcels would contain both LSU – Protected Species and LSU – Sensitive Species stipulations. These stipulations would ensure through a site specific biota survey and NEPA analysis that all protected or sensitive species issues were addressed prior to any surface disturbance. This would ensure protection of the resources and also provide notification to the lessee that further consultation and mitigation/compensation might be necessary prior to authorization of surface disturbance. No new surface disturbance in those areas is authorized in this proposed action – this EA is for competitive oil and gas auction only. Further analysis and approval would be required prior to actual surface disturbance.

Management Area General Objectives

The following objectives from the Caliente RMP will apply to all oil and gas related activities within the subject parcels:

• manage public lands to provide healthy, sustainable, biologically diverse ecosystems contributing goods, services and other social and cultural needs for local communities, the region and nation;

• manage public lands to meet the following minimum Standards of Ecosystem Health (See Chapter 6 of the 1997 Caliente RMP for further explanation and indicators used to determine whether or not these standards are being met):

• Soils exhibit functional biological and physical characteristics that are appropriate to soil type, climate, and land form.

• Healthy, productive and diverse populations of native species, including special status species (Federal T&E, Federal proposed, BLM sensitive, or Calif. State T&E) are maintained or enhanced where appropriate.

• Riparian/wetland vegetation, structure and diversity and stream channels and floodplains are functioning properly and achieving advanced ecological status.

• Surface and groundwater quality complies with California or other appropriate water quality standards.

• provide a leadership role in developing and implementing regional conservation strategies,
• dedicate public lands to meet San Joaquin Valley conservation goals,
• integrate management objectives with and assist local county governments, private organizations, and state agencies in the development and implementation of local management plans (e.g. Habitat Conservation Plans, mitigation banks, county general plans, air and water quality plans), and
• collaborate with the oil and gas industry in meeting mutually beneficial management objectives.

Allocations

All lands evaluated for competitive oil and gas lease auction in this EA are already currently classified as available for leasing; therefore, no special allocations are proposed within this EA.

Oil and Gas Leasing and Development

Oil and gas leasing and development have been previously addressed in more detail in the **1997 Caliente RMP/EIS beginning in Chapter 2, page 68**. All future oil and gas related activities contemplated on lands offered in the proposed action are within the scope of those actions previously analyzed in that

document, and no decisions made as a result of this EA will change or modify the decisions of the existing document. Therefore, this EA is tiered to the following existing BLM document, which is available for review at the Bakersfield Field Office:

Final Caliente RMP/EIS dated May 5, 1997

This action is also within the scope of the Caliente RMP Biological Opinion dated March 31, 1997 (101-97-F-64).

V. Affected Environment

Socio-Economic

The current Federal oil and gas leases in Kern County produce approximately 15.7 million barrels of oil per year and 6.7 billion cubic feet of gas per day. The market value of these products is approximately 400 million dollars per year. This produces 50 million dollars in U.S. royalties.

Visual Resource Management

The parcels up for competitive auction are in Visual Resource Management Class III and Class IV areas. EOI Group Numbers 240, 243, and 244 are in Class III and Class IV. EOI Group Numbers 241 and 242 are in Class III.

VRM Class III. This classification means that the existing characteristic landscape has been partially retained. The level of change in any of the basic landscape elements due to management activities may be moderate and evident.

VRM Class IV. This classification means that the characteristic landscape has had major modifications. The level of change in the basic landscape elements due to management activities can be high. Such activities may dominate the landscape and be the major focus of viewer attention.

Recreation

A majority of the acres proposed for lease have private surface ownership and do not provide for public recreation opportunities. Parcels that have both federal surface and mineral estates are scattered and have limited public access. As a result, there are few recreation opportunities associated with the lands proposed for lease. The limited public use occurring on these lands include hiking, hunting and OHV use.

Air, Soil, and Water

Air Quality

The project area is located in Kern and Kings Counties. These counties are located in one air basin - the San Joaquin Valley Air Basin. Oversight authority for air quality matters rests at the county level with the San Joaquin Valley Air Pollution Control District (SJVAPCD). At the state level, regulatory duties lie with the California Air Resources Board (CARB) and at the federal level with the U.S. Environmental Protection Agency (EPA), Region IX. The Bureau of Land Management has air program responsibilities

through its permitting programs and Clean Air Act requirements to analyze all actions for conformity to air quality plans.

The SJVAPCD has prepared air quality plans for both PM10 and ozone for inclusion in the State Implementation Plan. The San Joaquin Valley has the following plans in place to address air quality: "Best Available Control Measures/Technology and Reasonable Available Control Measures/Technology Demonstration for Sources of PM10 and PM10 precursors in the San Joaquin Valley Air Basin" and "Extreme Ozone Attainment Demonstration Plan, San Joaquin Valley Air Basin Plan Demonstrating Attainment of Federal 1-hour Ozone Standards." These plans include sections on emissions inventory and control strategies. These sections include discussions on oil and gas development. The attainment status of the San Joaquin Valley Air Basin is as follows:

Standard	*State Ambient Air Quality Standard*	*Federal Ambient Air Quality Standard*
PM_{10}	Attainment	Attainment
Carbon Monoxide	Attainment	Unclassified/attainment
Ozone	Non-attainment	Non-attainment

The USEPA designated the non-attainment areas for the new 8-hour ozone standard in April 2004 and the new PM2.5 standard in 2005. The air plans for these new designations have not been prepared yet. Due to the nature of these two pollutants, many of the provisions from the existing plans would be in the new plans. The Oil and Gas industry is highly regulated by the districts. The air plans are implemented through rule making which include a number of categories including permitting, equipment requirements and performance standards, dust and precursor emissions (NOx and SOx) and others. Any oil and gas and lands activities authorized through by BLM, including oil and gas leasing and rights of ways, would also have to comply with all of the applicable rules and permitting requirements.

Currently there are a number of emission sources in the air basin which affect pollution levels. The SJVAPCD has documented these in their air plan inventories. They show the baseline (1990) emissions for NOx at 787 tons per day in the summer time. Of that total, 165.1 tons (21%) were from oil and gas production. Kern County oil and gas activities accounted for approximately 15% of the NOx emissions (117.3 tons per day). Kern County has 1000-2500 new oil and gas wells drilled every year. In addition, emissions from hundreds of thousands of automobiles and trucks and significant other industrial and agricultural sources accounted for another 147 tons of NOx per day in Kern County in 1990.

References

http://www.arb.ca.gov/desig/desig.htm (accessed 4/27/07)
http://www.epa.gov/region09/air/sips/index.html (accessed 4/27/07)

Soils

Soils on these properties are typical of those developed from relatively fine-grained residual or alluvial materials under semi-arid to arid conditions. A characteristic soil tends to be very deep, well-drained, light colored, and loamy in texture with some rock fragments. Some parcels may contain soils with an abundance of alkaline salts and carbonates. These soils are also characterized by moderately slow permeability, slow surface runoff and slight erosion hazards on slopes. In areas of slightly greater slope (9-15%), runoff and erosion are moderate. Where slopes are greater than 30%, surface runoff is rapid and erosion hazard is moderate to severe. In some areas, especially where Torriorthents soils occur, plant

growth may be naturally reduced because the potential rooting depth of plants is restricted by excess salts that have not leached from the soil.

Water Quality

The parcels are in areas where there are or may be fresh water aquifers. Other than those, there are few or no other surface waters that are fresh.

All parcels are within watersheds governed by basin plans subject to federal and state Clean Water Acts. BLM will require full compliance with all applicable federal, State, and local laws, regulations, and policies to protect both surface and groundwater.

Biological Resources

To facilitate discussion, the properties included in this action have been divided into 10 Biological Units, i.e., groupings of adjacent parcels with similar ecological values. Unit names reflect some aspect of local geography. Information presented for each Biological Unit includes general topography, notable disturbance, vegetation, common animals, and potential sensitive species. For some units, particular characteristics of individual parcels are also noted.

Special Status Species. Special Status Species includes federally listed, state listed and BLM California sensitive species. **Table Biology 1** and **2** lists the Special Status Species by geographic unit. Each unit discussion also includes a brief discussion of Special Status Species.

MOUNTAIN CREEK UNIT

The Mountain Creek parcel is located in the foothills of the Greenhorn Mountains along the eastern boundary of the southern San Joaquin Valley. Elevation ranges from 2,000 to 3,000 feet.

Vegetation and topography are typical for the region - moderately hilly slopes of open blue oak and gray pine woodland, shifting to non-native annual grassland in the drier sites. Granite outcrops are common in the landscape. Grassland species include include bromes (*Bromus* spp.), filaree (*Erodium cicutarium*), wild oats (*Avena barbata*), fiddleneck (*Amsinckia* sp.), and various native wildflowers. Dominant shrubs and trees include blue oak (*Quercus douglasii*), live oak (*Quercus wislezenia*), grey pine (*Pinus sabiniana*), oak gooseberry (*Ribes quercifolium*), buck brush (*Ceanothus cuneatus* var. *cuneatus*), and California buckeye (*Aesculus californica*). Elderberry (*Sambucus mexicana*) is also present. Common saltbush can be found on some of the drier south-facing slopes. Poso Creek runs through the lower portion of this parcel and supports riparian vegetation dominated by cottonwoods (*Populus fremontii*), willows (*Salix* sp.) and sycamores (*Platanus racemosa*). Wildlife typical of the area includes California quail, acorn woodpecker, canyon wren, red-tailed hawk, golden eagle, mockingbird, desert cottontail, California ground squirrel, Botta's pocket gopher, dusky-footed woodrat, side-blotched lizard and western fence lizard. Bats, such as the western pipistrelle and pallid bat, probably roost in the rocky outcrops or many abandoned mines in the area.

The federally threatened San Joaquin adobe sunburst (*Pseudobahia peirsonii*) has been found within ½ mile of the Mountain Creek unit in similar habitat to that which occurs on the parcel. Two BLM sensitive plants, calico monkeyflower (*Mimulus pictus*) and Kern County larkspur (*Delphinium purpusii*), are known to occur on this unit. Other sensitive species found nearby, and with the potential to occur, include Piute Mountains navaretia (*Navarretia setiloba*), striped adobe-lily (*Fritilaria striata*), and round-leaved filaree (*California macrophylla*).

One federally listed animal species, the valley elderberry longhorn beetle, has the potential to occur on the parcel. BLM Sensitive animal species include pallid bat and burrowing owl. The parcel is within historic range of the California condor. The parcel does not include any designated or proposed critical habitat.

Weeds. Tree of heaven (*Ailanthus altissima*) and horehound (*Marriubium vulgare*) are common along some drainages in the area and are to be expected near the old mining facilities along Poso Creek.

ROUND MOUNTAIN UNIT

The Round Mountain parcels are located in the low hills to the west of the Sierra Nevadas, north of the Kern River. Elevation ranges from 1,080 to 1,440 feet. Topography ranges from gentle to moderately steep hills with intervening ravines.

Vegetation is primarily non-native annual grassland with patches of saltbush scrub on some north-facing slopes. The steep, southwest-facing ridge slopes are dry, with little soil development and mostly devoid of vegetation. In years of adequate precipitation, these dry slopes support nice displays of native wildflowers. Common grassland species include include ripgut brome (*Bromus diandrus*), red brome (*Bromus madritensis* ssp. *rubens*), red-stemmed filaree (*Erodium cicutarium*), foxtail fescue (*Vulpia myuros*), fiddleneck (*Amsinckia* sp.), and farmer's foxtail (*Hordeum murinum* ssp. *leporinum*). Shrubs include common saltbush (*Atriplex polycarpa*), bladderpod (*Isomeris aborea*), goldenbush (*Isocoma acradenia*), fourwing saltbush (*Atriplex canescens*) and quailbush (*Atriplex lentiformis*). Native herbs include blue dicks (*Dichleostemma congestum*), lupine (*Lupinus* sp.), common pepper grass (*Lepidium nitidum*), popcorn flower (*Crypthantha* sp.), *Navarettia* sp., *Astragalus* sp., *Lotus* sp., and *Gilia* sp.

Wildlife typical of the allotments includes species such as black-tailed hare, desert cottontail, California ground squirrel, Botta's pocket gopher, coyote, kit fox, American badger, red-tailed hawk, mourning dove, burrowing owl, western kingbird, common raven, white-crowned sparrow, western meadow lark, side-blotched lizard, and western rattlesnake. Heerman's kangaroo rat and western whiptail may also be present.

Potential sensitive animal species for these parcels include blunt nosed leopard lizards, kit fox, burrowing owl and California condor. Blunt-nosed leopard lizards (federally endangered) are historically known from the Kern Front Oilfield. Blunt-nosed leopard lizards have not been observed in the area in recent times (past 10 years). In years of light to average rainfall, when annual vegetation is sparse, areas of the parcel may provide suitable habitat for blunt-nosed leopard lizards. San Joaquin kit fox (federally endangered) are known to occur in the vicinity. The parcel may provide denning and foraging habitat for kit fox. The area is within the historic foraging range of California condor.

The Round Mountain unit is within the historical range of the federally endangered Bakersfield cactus (*Opuntia basilaris* var. *treleasei*). BLM sensitive species that may have potential of being in this area include oil neststraw (*Stylocline citroleum*), striped adobe lily (*Fritillaria striata*), and California screw moss (*Tortula californica*).

Weeds. Weedy species in the area include horehound (*Marrubium vulgare*), Russian thistle (*Salsola tragus*), tree tobacco (*Nicotiana glauca*), and white horse-nettle (*Solanum elaegnifolium*).

POSO UNIT

The Poso area parcels are located in the low hills north of Bakersfield and west of the Sierra Nevadas. Elevation ranges from 680 to 1,100 feet. Topography consists of moderate to steep hills, disected by numerous ravines.

Vegetation is primarily non-native grassland with occasional small patches of shrubs. The area is rigorously grazed and some areas have extensive roads and other oilfield-type disturbances. Common grassland species include red brome (*Bromus madritensis* ssp. *rubens*), filaree (*Erodium cicutarium*), foxtail fescue (*Vulpia myuros*), fiddleneck (*Amsinckia* sp.) and native grassland wildflowers. Shrubs include common saltbush (*Atriplex polycarpa*) and goldenbush (*Isocoma acradenia*). A few trees are evident from recent air photos and are assumed to be tamarisk, since they tend to be associated with the oilfield development in EOI Group Number 248 (T. 28S., R, 27E., sec 2).

Wildlife typical of the allotments includes species such as black-tailed hare, desert cottontail, California ground squirrel, Botta's pocket gopher, coyote, kit fox, American badger, red-tailed hawk, mourning dove, burrowing owl, western kingbird, common raven, white-crowned sparrow, western meadow lark, side-blotched lizard, and western rattlesnake. Heerman's kangaroo rat and western whiptail may also be present.

Potential sensitive species for these parcels include blunt nosed leopard lizard, kit fox, burrowing owl, San Joaquin pocket-mouse, California condor and Bakersfield cactus. Blunt-nosed leopard lizards (federally endangered) are historically known from the area. Blunt-nosed leopard lizards have not been observed in the area in recent times (past 10 years), but few if any surveys have been conducted on the private parcels. In years of light to average rainfall, when annual vegetation is sparse, areas of the parcel may provide suitable habitat for blunt-nosed leopard lizards. San Joaquin kit fox (federally endangered) are known to occur in the vicinity. The parcel may provide denning and foraging habitat for kit fox. The area is within the historic foraging range of California condor.

The federally endangered Bakersfield cactus (*Opuntia basilaris* var. *treleasei*) has been reported from the next section north of EOI Group Number 248.

Weeds. Aside from the previously mentioned tamarisk, weedy species with a high likelyhood to occur include horehound (*Marrubium vulgare*), Russian thistle (*Salsola tragus*), tree tobacco (*Nicotiana glauca*), and white horse-nettle (*Solanum elaegnifolium*).

MCKITTRICK UNIT

The McKittrick parcels are located on the west side of the San Joaquin Valley, in the valley east of the town of McKittrick. Elevation ranges from 830 to 1,070 feet. The area's topography consists of a gentle alluvial fan draining to the northeast.

Vegetation within the McKittrick parcels is a mosaic of non-native grassland and valley saltbush scrub. The grassland is dominated by red brome (*Bromus madritensis* ssp. *rubens*) and red-stemmed filaree (*Erodium cicutarium*), and supports other introduced weedy species such as zorro fescue (*Festuca megalura*), foxtail (*Hordeum glaucum*), Mediterranean grass (*Schismus barbatus*), Russian thistle (*Salsola kali*), horehound (*Marrubium vulgare*), and various mustards. Native forbs include fiddleneck (*Amsinkia intermedia*), pepperweed (*Lepidium dictyotum*), crassula (*Crassula erecta*), tansy phacelia (*Phacelia tanacetifolia*), locoweed, (*Astragalus* sp.), Jimson weed (*Datura wrightii*), turkey mullein (*Eremocarpus setigerus*), and wild buckwheat (*Eriogonum ordii*). The valley saltbush scrub is dominated by common saltbush (*Atriplex polycarpa*) and possibly spiney saltbush (*A. spinifera*). Cheeseweed (*Hymenoclea salsola*) is also relatively common, while other shrubs encountered include bladderpod (*Isomeris arborea*), matchweed (*Guiterrezia californica*), and alkali goldenbush (*Isocoma acradenia* var. *bracteosa*).

Wildlife typical of the saltbush scrub and nonnative grasslands within the McKittrick parcels include side-blotched lizards, western whiptail, blunt-nosed leopard lizard, coachwhip, gopher snake, common kingsnake, western diamondback rattlesnake, turkey vulture, Northern harrier, red-tailed hawk, American kestrel, long-billed curlew, mourning dove, greater roadrunner, barn owl, burrowing owl, horned lark, common raven, Northern mockingbird, LeConte's thrasher, water pipit, loggerhead shrike, lark sparrow, sage sparrow, white-crowned sparrow, western meadowlark, desert cottontail, black-tailed hare, San Joaquin antelope squirrel, California ground squirrel, San Joaquin pocket mouse, Heermann's kangaroo rat, giant kangaroo rat, short-nosed kangaroo rat, deer mouse, Tulare grasshopper mouse, coyote, San Joaquin kit fox, badger, and bobcat. The occurrence of mature saltbush plants greatly influences the presence of many of the bird species and a few mammals (e.g. mockingbird, loggerhead shrike, LeConte's thrasher, lark sparrow, sage sparrow, white-crowned sparrow, desert cottontail, black-tailed hare). However, most of these wildlife species are commonly found in both the saltbush scrub and nonnative grassland habitats.

There are several California and federally listed animals that have the potential to occur in this area: blunt-nosed leopard lizard, giant kangaroo rat, San Joaquin antelope squirrel and San Joaquin kit fox. The area is with historic range fore the California condor. BLM sensitive animal species include burrowing owl, LeConte's thrasher, short-nosed kangaroo rat, San Joaquin pocket mouse, and Tulare grasshopper mouse.

The McKittrick unit is within the historical range of the federally endangered Kern mallow (*Eremalche parryi* ssp. *kernensis*), California jewelflower (*Caulanthus californicus*), and San Joaquin woolythreads (*Monolopia congdonii*), and the recently delisted Hoover's woolystar (*Eriastrum hooveri*). Special status plant species known from the nearby area include Tejon poppy (*Eschscholtzia lemonii* spp. *kernensis*), oil neststraw (*Stylocline citroleum*), Lost Hills crownscale (*Atriplex vallicola*), and heartscale (*Atriplex cordulata*).

Weeds. Potential weeds on these parcels include tamarisk, horehound, and Russian thistle.

CEDAR CANYON UNIT

The Cedar Canyon parcels are mostly located in the Cedar Canyon watershed, with one to the west in the Bitterwater Creek watershed. These watersheds are within the Temblor Range, on the west side of the San Joaquin Valley. Elevation ranges from 1,400 to 2,250 feet. Topography ranges from steep to moderately steep ridges.

Vegetation within the Cedar Canyon parcels includes non-native grassland, upper Sonoran subshrub scrub, and juniper woodland, the vegetation type primarily a function of slope aspect (i.e., juniper and shrub communities are best developed on the more meisic, north-facing slopes, while south-facing slopes support grasslands and shale scalds, areas of exposed shale soils with sparse vegetation).

California juniper (*Juniperus californica*) is dominant in the woodland, which may possibly also include Tucker oak (*Quercus john-tuckeri*) and blue oak (*Quercus douglasii*) in the more mesic sites. Shrubs within the woodland and upper Sonoran subshrub scrub communities include California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemesia californica*), ephedra (*Ephedra viridis*), interior goldenbush, (*Ericameria linearifolia*), bladderpod (*Isomeris arboreus*), yellow mock aster, (*Eastwoodia elegans*), and golden yarrow (*Eriophyllum confertifolium*). Common saltbush (*Atriplex polycarpa*) is also expected in the lower, more alkaline sites. Grassland species include the introduced red brome (*Bromus madritensis* ssp. *rubens*), foxtail fescue (*Vulpia myuros* var. *hirsuita*), slender wild oats (*Avena barbata*), and soft chess (*Bromus mollis*), as well as native bunchgrasses including one-side

blue grass (*Poa secunda*), nodding needlegrass (*Nassella cernua*), and desert needlegrass (*Achnatherum speciosum*). Native wildflowers include Parry's mallow (*Eremalche perryi*), blue dicks (*Dichleostemma capitata*), owl's clover (*Castilleja exigua*), gypsum loving larkspur (*Delphinium gypsophylla*), chia (*Salvia columbaria*), lupine (*Lupinus microcarpus*), fiesta flower (*Pholistima membranaceum*),creamcups (*Platystemon californicus*) and others.

Wildlife expected to be present in the Cedar Canyon parcels include western toad, Pacific treefrog, western fence lizard, side-blotched lizards, desert night lizard, Gilbert's skink, western whiptail, California legless lizard, racer, coachwhip, gopher snake, common kingsnake, western black-headed snake, western diamondback rattlesnake, turkey vulture, golden eagle, sharp-shinned hawk, Cooper's hawk, northern harrier, red-tailed hawk, American kestrel, prairie falcon, mourning dove, greater roadrunner, western screech owl, great horned owl, burrowing owl, long-eared owl, barn owl, black-chinned hummingbird, Costa's hummingbird, northern flicker, western kingbird, Say's phoebe, ash-throated flycatcher, horned lark, scrub jay, common raven, oak titmouse, bushtit, rock wren, Bewick's wren, ruby-crowned kinglet, mountain bluebird, American robin, wrentit, northern mockingbird, California thrasher, cedar waxwing, phainopepla, loggerhead shrike, yellow-rumped warbler, orange-crowned warbler, lazuli bunting, California towhee, lark sparrow, sage sparrow, white-crowned sparrow, dark-eyed junco, western meadowlark, Lawrence goldfinch, northern oriole, house finch, ornate shrew, broad-footed mole, Yuma myotis, California myotis, western pipistrelle, big brown bat, pallid bat, Mexican free-tailed bat, desert cottontail, black-tailed hare, San Joaquin antelope squirrel, California ground squirrel, Bottas' pocket gopher, Heermann's kangaroo rat, giant kangaroo rat, western harvest mouse, deer mouse, pinyon mouse, desert woodrat, California vole, coyote, San Joaquin kit fox, raccoon, long-tailed weasel, striped skunk, badger, bobcat, and mule deer.

There are several California and federally listed animals that occur in near these parcels: blunt-nosed leopard lizard, giant kangaroo rat, San Joaquin antelope squirrel, and San Joaquin kit fox. The area is within historic California condor range. These animals have been documented throughout the Temblor region. BLM sensitive animal species with a potential to occur on the parcels include burrowing owl and pallid bat.

The Cedar Canyon unit is within the historical range of the federally endangered California jewelflower (*Caulanthus californicus*) and San Joaquin woolythreads (*Monolopia congdonii*). The federally delisted Hoover's wooly-star (*Eriastrum hooveri*) occurs within the area. The unit also has potential habitat for a number of BLM sensitive plant species from the Temblor region: pale-yellow layia (*Layia heterotricha*), Munz's tidy tips (*Layia munzii*), showy madia (*Madia radiata*), Hall's tarplant (*Deiandra halliana*), Mason's neststraw (*Stylocline masonii*), Lemmon's jewelflower (*Caulanthus coulteri* var. *lemmonii*), Temblor buckwheat (*Eriogonum temblorense*) straight-awned spineflower (*Chorizanthe rectispina*), San Benito spineflower (*Chorizanthe biloba* var. *immemoria*), recurved larkspur (*Delphinium recurvatum*), round-leaved filaree (*California macrophylla*), shining navarretia (*Navarretia nigelliformis* ssp. *radicans*), Panoche peppergrass (*Lepidium jaredii* spp. *album*), and San Bernardino aster (*Symphyotrichum defoliatum*).

Weeds. Potential weeds on these parcels include tamarisk, tree of heaven, horehound, tree tobacco and Russian thistle.

SHALE HILLS – PACKWOOD UNIT

The Shale Hills parcels are located in the general area of the Shale Hills, within the Temblor Range, north of Bitterwater Valley. This area includes the Packwood creek watershed and part of the Salt Creek

watershed. Elevation ranges from 700 to 2,000 feet. Topography is mostly steep to moderately steep ridges, with a very small amount of gentle slopes. Soils tend to be thin and the underlying marine shales are exposed in many areas. A lot of bare ground is present, especially on south facing slopes.

Vegetation within the Shale Hills parcels consists of fairly sparse non-native grassland and scattered clumps of shrubs. The shrub component can be characterized as Upper Sonoran Sub-Shrub Scrub and includes bladderpod (*Isomeris arborea*), California buckwheat (*Eriogonum fasciculatum*), common saltbush (*Atriplex polycarpa*), and alkali goldenbush (*Isocoma acradenia* var. *bracteosa*). Vegetation is very sparse in some areas and there are large patches of naturally bare shale. The grassland is dominated by the non-native red brome and filaree, but also contains native wildflower genera such as *Amsinckia*, *Crypthantha*, *Camissonia*, *Eschscholtzia*, *Eriogonum*, *Phacelia*, *Lupinus*, and *Lepidium*. Overall, the habitat is quite xeric, but isolated juniper may be present in less harsh microsites.

Potential wildlife in the area includes reptiles and amphibians such as side-blotched lizards, desert night lizard, western whiptail, gopher snake, and western diamondback rattlesnake. Potential birds include turkey vulture, golden eagle, sharp-shinned hawk, Cooper's hawk, northern harrier, red-tailed hawk, American kestrel, prairie falcon, mourning dove, greater roadrunner, western screech owl, burrowing owl, long-eared owl, black-chinned hummingbird, Costa's hummingbird, western kingbird, Say's phoebe, ash-throated flycatcher, horned lark, scrub jay, common raven, bushtit, rock wren, Bewick's wren, ruby-crowned kinglet, wrentit, northern mockingbird, California thrasher, phainopepla, loggerhead shrike, lark sparrow, sage sparrow, white-crowned sparrow, dark-eyed junco, western meadowlark, Lawrence goldfinch, and the house finch. Local mammals include species such as Yuma myotis, California myotis, western pipistrelle, big brown bat, pallid bat, Mexican free-tailed bat, desert cottontail, black-tailed hare, California ground squirrel, Bottas' pocket gopher, Heermann's kangaroo rat, western harvest mouse, deer mouse, desert woodrat, California vole, coyote, raccoon, long-tailed weasel, striped skunk, badger, bobcat, and mule deer.

The federally listed San Joaquin kit fox and blunt-nosed leopard lizard and the state listed San Joaquin antelope squirrel are also known to occur in the region. The federally listed giant kangaroo rat and the BLM sensitive species include burrowing owl and pallid bat. The area is within the historic range of the California condor.

Rare plants with the potential to be found in the Shale Hills – Packwood unit are expected to be the same group of Temblor species as listed for the Cedar Creek unit.

Weeds. Potential weeds on these parcels include tamarisk, horehound, tree tobacco and Russian thistle.

FRANCISCAN UNIT

The Franciscan parcels are located in the Fransican Creek watershed, within the Temblor Range, west of the Shale Hills. Elevation ranges from 1,200 to 2,000 feet. Topography is mostly steep to moderately steep ridges, with a very small amount of gentle slopes. Soils tend to be thin and the underlying marine shales are exposed in many areas. A lot of bare ground is present, especially on south facing slopes.

Vegetation within the Franciscan parcels occurs as three overlapping plant communities. The areas above the canyon are dominated by non-native grassland consisting of introduced bromes, wild oats, storksbill, and mustards, with native wildflower genera such as *Amsinckia*, *Crypthantha*, *Camissonia*, *Eschscholtzia*, *Eriogonum*, *Phacelia*, *Lupinus*, *Trifolium*, *Castilleja*, *Dichleostema*, *Castilleja*, *Delphinium*, and *Lepidium*. Occasional native bunchgrass (*Poa* and *Achnatherum*) are encountered. Some north-facing slopes and canyon bottoms support sparse juniper woodland and upper Sonoran sub-shrub scrub vegetation. Species present include California juniper (*Juniperus californica*), bladderpod (*Isomeris*

arborea), California sagebrush (*Artemesia californica*), interior goldenbush (*Ericameria linearifolia*), California buckwheat (*Eriogonum fasciculatum*), bush lupine (*Lupinus albifrons*), and common saltbush (*Atriplex polycarpa*). Because of the site's north-facing aspect, the herbaceous understory is more lush than other areas nearby. The steep,dry south-facing slopes tend towards bare ground, with widely scattered shrubs (bladderpod, California sagebrush, saltbush, and bush lupine), xeric wildflowers (*Mentzelia*, *Phacelia*, *Amsinckia*, *Camissonia*) and the usual assortment of weedy non-native annuals.

Wildlife observed during several field inspections (June 2001 and March 2005) include side-blotched lizard, common raven, red-tailed hawk, coyote), and road runner. Evidence of past small mammal activity included micro relief typically resulting from rodent burrowing and an occasional inactive burrow. No active small mammal burrows were observed. Other species with the potential to occur in the area include American badger, burrowing owl and the federally listed San Joaquin kit fox. The state listed San Joaquin antelope squirrel and the federally listed blunt-nosed leopard lizard are also known to occur in the region. Historic records (1925, 1979) for the blunt-nosed leopard lizard occur on or immediately adjacent to the allotments. Additional wildlife would be similar to those listed for the Packwood – Shale Hills Unit.

The federally listed blunt-nosed leopard lizard has been found within the Franciscan parcels. Nearby reports of other sensitive species include San Joaquin kit fox and burrowing owl. San Joaquin antelope squirrel, giant kangaroo rat and pallid bat may also be present. The unit is within the historic range of the California condor. Critical habitat for the California Tiger salamander occurs approximately 1 miles west of this unit, with the nearest known location approximately 2 miles to the west. A guideline of 0.7 miles is generally used for evaluating potential habitat use by tiger salamanders. Since the distance to critical habitat and the nearest known location is greater than the 0.7 mile guideline, it is unlikely that tiger salamanders occur in the unit.

Rare plants with the potential to be found in the Franciscan unit are expected to be the same group of Temblor species as listed for the Cedar Creek unit.

Weeds. Potential weeds on these parcels include tamarisk, horehound, tree tobacco and Russian thistle.

BLUESTONE RIDGE - ORCHARD PEAK UNIT

The Bluestone Ridge parcels are located in Bluestone Ridge, within the inner Coast Range, north of Antelope Valley. Elevation ranges from 1,000 to feet at 3,125 at Orchard Peak. Topography ranges from moderately steep to steep.

Vegetation within the Bluestone ridge parcels is a mixture of non-native annual grassland, juniper woodland, blue oak woodland, upper Sonoran sub-shrub scrub (sometimes called coastal scrub), some scrub areas may be dominated by saltbush. The stongest influence on vegetation appears to be slope aspect: grassland is dominant on south-facing slopes, while woodland and shrub communities are more common on north-facing slopes. Shrubs in this area include species such as California sagebrush (*Artemesia californica*), California buckwheat (*Eriogonum fasciculatum*), matchweed (*Gutierrezia californica*), black sage (*Salvia melifera*), saltbush (*Atriplex polycarpa*), and yucca (*Yucca whipplei*). Grassland and understory annuals include species such as the non-native wild oats, bromes, and filaree as well as native bunchgrasses (*Poa secunda* and *Nassella* spp.). Native wildflowers include species such as *Amsinckia*, *Crypthantha*, *Erysimum*, *Astragalus*, *Lotus*, *Lupinus*, *Phacelia*, *Calochortus*, *Mentzelia*, *Clarkia*, *Castilleja*, and *Eschscholtzia*.

Numerous animal species are to be expected from the parcel area. Reptiles and amphibians may include tree frog, bull frog, western fence lizard, side-blotched lizard, desert night lizard, western whiptail, gopher

snake, and western diamondback rattlesnake. Birds to be expected include turkey vulture, golden eagle, red-tailed hawk, American kestrel, mourning dove, killdeer, greater roadrunner, barn owl, Say's phoebe, Ash-throated flycatcher, scrub jay, common raven, yellow-billed magpie, bushtit, rock wren, tree swallow, violet-green swallow, cliff swallow, Bewick's wren, California towhee, California quail, Phainopepla, loggerhead shrike, lark sparrow, dark-eyed junco, western meadowlark, lesser goldfinch, and the house finch. Mammals expected include desert cottontail, black-tailed hare, California ground squirrel, Bottas' pocket gopher, desert woodrat, California vole, coyote, raccoon, striped skunk, mule deer, long-tailed weasel, badger, bobcat, and wild pig.

Special status animal species that may be present include San Joaquin kit fox, San Joaquin antelope squirrel, burrowing owl and pallid bat. The area is within the historic range of the California condor. Critical habitat for the California red-legged frog occurs just west of this unit.

Rare plants with the potential to be found in the Bluestone Ridge unit are expected to be the same group of Temblor species as listed for the Cedar Creek unit.

Weeds. Potential weeds on these parcels include tamarisk, horehound, tree tobacco and Russian thistle.

WOODS CANYON UNIT

The Woods Canyon parcels are located in the Temblor Range, within the King Canyon, Woods Canyon and Hodges Canyon watersheds. Elevation ranges from 1,300 to 2,300 feet. Topography ranges from steep to moderately steep ridges.

Vegetation within the Woods Canyon parcels includes juniper-oak woodland on the north-facing slopes and non-native grassland and upper Sonoran sub-shrub scrub on the south-facing slopes. Four springs are evident (via air photos) in Parcel Number 45 in section 18. Within the unit, there are also areas of exposed shale with sparse vegetative cover. The woodland is populated by California juniper and blue oak. Local shrubs include species such as California sagebrush (*Artemesia californica*), California buckwheat (*Eriogonum fasciculatum*), matchweed (*Gutierrezia californica*), black sage (*Salvia melifera*), and yucca (*Yucca whipplei*). Grassland and understory annuals include the non-native wild oats, bromes, and filaree as well as native bunchgrasses (*Poa secunda* and *Nassella* spp.). Native wildflowers include *Amsinckia*, *Crypthantha*, *Erysimum*, *Astragalus*, *Lotus*, *Lupinus*, *Phacelia*, *Calochortus*, *Mentzelia*, *Clarkia*, *Castilleja*, and *Eschscholtzia*. Vegetation at the springs probably includes species such as common monkeyflower (*Mimulus guttatus*), rushes (*Juncus* sp.), stinging nettle (*Urtica* sp.), seep willow (*Baccharis* sp.), and possibly willows (*Salix* sp.). In wet years, the normally bare shale scarps probably support good displays of native wildflowers and few invasives.

Expected wildlife species would be similar to those listed for the Bluestone Ridge – Orchard Peak Unit.

Special status animal species with the potential to occur in the unit include San Joaquin kit fox, California red-legged frog, burrowing owl and pallid bat. The area is within the historic range of the California condor. Critical habitat for the California red-legged frog occurs just west of this unit. Suitable breeding ponds are not evident from topographic maps and aerial photographs, but the four springs and adjacent woodland area in section 18 may provide suitable habitat for the red-legged frog. Critical habitat for the California Tiger salamander occurs approximately 1.5 miles west of this unit, with the nearest known location approximately 2 miles to the west. A guideline of 0.7 miles is generally used for evaluating potential habitat use by tiger salamanders. Since the distance to critical habitat and the nearest known location is much greater than the 0.7 mile guideline, it is unlikely that tiger salamanders occur in the unit.

Rare plants with the potential to be found in the Woods Canyon unit are expected to be the same group of Temblor species as listed for the Cedar Creek unit.

Weeds. Potential weeds on these parcels include tamarisk, horehound, and in the riparian areas, bull thistle.

KINGS COUNTY UNIT

The Kings County parcels are located in the Avenal Ridge, within the inner Coast Range, west of Sunflower Valley. Elevation ranges from 1,200 to 2,000 feet. Topography is mostly steep ridges, with a very small amount of moderately steep slopes. Soils tend to be clayey and underlain by shales and sandstone.

Vegetation within the Kings County parcels is a mixture of juniper-oak woodland, xeric coastal scrub (very similar to upper Sonoran sub-shrub scrub), and introduced annual grassland. The woodland is populated by California juniper and blue oak. Shrub species include California sagebrush (*Artemesia californica*), California buckwheat (*Eriogonum fasciculatum*), matchweed (*Gutierrezia californica*), black sage (*Salvia melifera*), and yucca (*Yucca whipplei*). Grassland and understory annuals include the non-native wild oats, bromes, and filaree as well as native bunchgrasses (*Poa secunda* and *Nassella* spp.). Native wildflowers include *Amsinckia*, *Crypthantha*, *Erysimum*, *Astragalus*, *Lotus*, *Lupinus*, *Phacelia*, *Calochortus*, *Mentzelia*, *Clarkia*, *Castilleja*, and *Eschscholtzia*.

Numerous animal species has been reported from the parcel area and other species are expected. Reported reptiles and amphibians include tree frog, bull frog, and western fence lizard. Expected species include side-blotched lizard, desert night lizard, western whiptail, gopher snake, and western diamondback rattlesnake. Reported birds include turkey vulture, golden eagle, red-tailed hawk, American kestrel, mourning dove, killdeer, greater roadrunner, barn owl, Say's phoebe, ash-throated flycatcher, scrub jay, common raven, yellow-billed magpie, bushtit, rock wren, tree swallow, violet-green swallow, cliff swallow, Bewick's wren, California towhee, California quail, phainopepla, loggerhead shrike, lark sparrow, dark-eyed junco, western meadowlark, lesser goldfinch, and the house finch. Mammals reported include desert cottontail, black-tailed hare, California ground squirrel, Bottas' pocket gopher, desert woodrat, California vole, coyote, raccoon, striped skunk, mule deer, and wild pig. Also expected are mammal species such as Heermann's kangaroo rat, deer mouse, long-tailed weasel, badger, and bobcat.

Special status animal species with potential to occur in the unit include San Joaquin kit fox, burrowing owl and pallid bat. The unit is within the historic range of the California condor.

Potential habitat for two BLM sensitive plant species is present within the Kings County unit. Pale-yellow layia (*Layia heterotricha*) and showy madia (*Madia radiata*) might be present on north-facing grassy slopes, where soils are clayey and calcareous at depth. There appears to be a low potential for California jewelflower (*Caulanthus californicus*) and recurved larkspur (*Delphinium recurvatum*). Otherwise, those rare plants with the potential to be found in the Kings County unit are expected to be the same group of Temblor species as listed for the Cedar Creek unit.

Weeds. Tamarisk is a potential weed on these parcels.

RIPARIAN AND WETLAND HABITAT

Riparian habitat occurs within 5 of the units – Kings County, Bluestone Ridge–Orchard Peak, Woods Canyon, Shale Hills-Packwood, and Mountain Creek. **Table Biology 3** lists the location, amount and

description of these riparian areas. Based on USGS topographic maps and aerial photographs, nine springs appear to occur on the parcels. Based on aerial photographs, drainages on the lease parcels support approximately 4-3/4 miles of riparian habitat. Two stock ponds appear to be present on the lease parcels. Neither of the ponds appear to support riparian vegetation.

Cultural Resources

The lease parcels identified in this document fall within the prehistoric territories of the Salinan Indians and four Yokut tribelets; the Tachi, Tulumne, Yowlumne, and Paleumne. To facilitate discussion, the properties in this action have been divided into four units corresponding to Native American ethnographic territories. In several instances these groupings were similar to the units created in the Biological Resources section of this document, therefore where possible those unit names have been included.

EOI Group Numbers 240-244 Tachi Yokuts and Salinan Indians

EOI Groups 240-244 are located in an area difficult to categorize ethnographically. It appears that the region was used by both the Salinan and the Tachi Yokuts. For example, several sources indicate that Yokuts territory extended west to the watershed of the Coast Range; which would have encompassed these properties. However, the largest documented prehistoric Salinan village site was located at the present-day town of Cholame, less than 10 miles west of parcel 240. Consequently, it would seem that this region would have been traveled by both groups during hunting and gathering activities, as well as trading expeditions. Since the Salinan had access to marine resources within their territory and the Yokuts had resources particular to the San Joaquin Valley and its lakes, trade between these two tribal groups was highly probable.

Salinan territory stretched from the California Coast to the edge of the Coast Ranges. Their language is included in the Hokan language family, as is the dialects of their neighbors the Chumash and Esselen. Apparently the Salinan made use of many edible resources; in fact sources indicate that they utilized many species of fish, reptiles, birds, and mammals. Plant foods included six varieties of acorn, berries, pine nuts, wild oats, sunflower, chia, sage, Yucca, prickly pear and bulbs. Salinan material culture is typical of California groups; they manufactured basketry, flaked stone tools, and shell beads for trade and decoration among other goods.

The Tachi Yokuts were one of fifteen tribelets belonging to the Southern Valley Yokuts. Their territory included the western and eastern shores of Tulare Lake, which would have afforded them an abundance of lake and marshland resources; and extended west to the Kettlemen Hills and Lemoore. As a result, Tachi Yokuts subsistence practices focused upon fishing, hunting waterfowl and terrestrial animals, and the gathering of plant foods.

The historic period began upon the coast of California much sooner than the interior, therefore affecting the Salinan population before the Yokuts. In fact, two of the earliest missions in California were located in Salinan territory; San Antonio de Padua Mission was established in July 1771, and Mission San Miguel was founded in July 1797. Don Pedro Fages is recorded as the first European to enter the San Joaquin Valley, during an expedition in 1772. Other Spanish explorations in this region included Father Francisco Garces, whose travels in 1776 included the Kern River and the San Joaquin Valley before reaching the California Coast. Within a few decades the traffic of Spanish missionaries and soldiers turned into a larger population of Euro-American pioneers, working as trappers, miners and farmers. Once the settlers moved into the area, primarily for ranching and agricultural purposes, territories of both the Salinan and Yokuts became severely restricted.

EOI Group Number 245 Tulumne Yokuts, McKittrick Unit

The Tulumne were concentrated around portions of Buena Vista Lake, but their range extended northwest to McKittrick, west to Bitterwater Creek near Taft, and south to San Emigdio. Tulumne territory is well known due to several prominent archaeological investigations conducted in the vicinity of Buena Vista Lake prior to the 1960s. In fact, the excavations at Tulumne village sites and cemeteries dominate the archaeological information associated with Southern Valley Yokuts.

EOI Group Numbers 247-250 Yowlumne Yokuts, Round Mountain Unit
The Yowlumne Yokuts had one of the largest territories among theYokuts, which was centered near Bakersfield at the village site of Woilu. Yowlumne territory included portions of the Kern River, Kern Lake, and was adjacent to Buena Vista Lake, all of which would have held important resources. According to ethnographic references the Yowlumne were often called the Wolf people, since the name Yowlumne meant people of the place where the howlers live.

EOI Group Number 251 Paleumne Yokuts, Mountain Creek Unit
The Paleumne Yokuts had several villages located within a few miles of parcel 251; the village site of Wahkoiu (Wah-koi-oo) is 3 mile southwest of the Long Tom Mine and the village sites of Sike Tepu (Sick-ē Tē-poo) and Báakeu (Bā-ā-kē-oo) were both located along Poso Creek as it passes through Poso Flat.

The bulk of the plant foods in the Yokuts diet were acorns, chia seeds, manzanita berries, and wild oats; while hunted animals consisted of deer, quail, rabbits, squirrels, waterfowl, and fish. Some examples of goods manufactured and utilized among the Yokuts included flaked stone tools, intricate basketry, tanned animal hides, and the bow and arrow. Prehistoric sites common to Salinan and Yokut groups include temporary hunting camps, pictograph rock art, bedrock mortar and millingstone food processing stations, lithic scatters, and habitation sites.

A very limited amount of cultural resources surveys have been conducted on lands identified in this document. Therefore, if realty or oil and gas projects are proposed on these lands, Native American consultation and archaeological surveys will be conducted to identify national register eligible properties. These archaeological surveys will be conducted to fulfill our legal obligations under Section 106 of the National Historic Preservation Act.

Livestock Grazing

The lands proposed for leasing for which BLM owns the surface estate may also be leased by the BLM for livestock grazing. Portions of grazing allotments #00016 (Oil Field), #00037 (Raven Pass), #00048 (Mountain Creek), #00065 (Packwood), #00072 (Bluestone Ridge), and #03464 (Franciscan) are included in the proposed action. These allotments are authorized for grazing of cattle or sheep, with varying seasons of use and other terms and conditions.

Lands

The lands proposed for leasing are mainly: 1) scattered split estate mineral parcels under the jurisdiction of BLM and 2) a few scattered parcels of full fee estate (surface + mineral estate) under the jurisdiction of BLM. For the split estate parcels, the United States not only owns any minerals in the land, but also surface entry rights that ‘float’ over the entire parcel.

EOI Group Numbers 240 through 244 are in remote areas where the current land uses are mainly livestock grazing. The United States has no legal access rights to any of these parcels, except for the few that are crossed by State Highways 41 and 46. Many of these parcels have no physical access via a road.

EOI Group Number 245 is in an existing oilfield area near McKittrick, CA. This parcel is crossed by Reserve Road (a Kern County road), providing legal and physical access to the parcel for the United States and any lessees. There are three existing rights-of-way on this parcel that have been issued by BLM for oilfield-related uses: CACA 40480 and CACA 19924.

EOI Group Number 247 is in an area where the main land uses are livestock grazing. The United States has no legal access rights to any of this parcel. Physical access is present via a few dirt roads.

EOI Group Number 248 is in a producing oil field; this area was formerly leased but the lease terminated and ownership of the 19 wells and waster water facility reverted to the U.S. Goverment. Portions of the area are also used for livestock grazing. The United States has no legal access rights to any of this parcel. Physical access is present via a few dirt roads.

EOI Group Number250 is in an existing oil field area. This parcel is crossed by Round Mountain Road (a Kern County road), providing legal and physical access to the parcel for the United States and any lessees.

EOI Group Number 251 is in an area where the main land uses are livestock grazing. The United States has no legal access rights to any of this parcel. Physical access is present via a few dirt roads.

Farmland

EOI Group Number 242 is located on acreage designated as farmland. This parcel is on split estate lands that is currently a 255-acre almond orchard.

Oil and Gas Resource

The parcels are in central Kern County and Kings County. All parcels (about 16,765.67 acres) are classified as having high potential for occurrence of hydrocarbons, with nearly all of them being nominated for leasing by members of the oil and gas industry. This is one of the oldest oil districts in the United States, and has been extensively developed in the anticlinal trends along the east and west sides of the Valley since the 1870's.

Most reservoirs in the area are sandstones which have adequate porosity and permeability for the migration of oil and gas. Some reservoirs in the area are fractured siliceous organic shales of the Monterey formation. The Monterey formation is both source and reservoir rock. Compression and diagenesis severely degrade reservoir quality at depths exceeding 12,000 feet to the extent that only dry gas is produced from greater depths.

The following statistics are from the California Division of Oil, Gas, and Geothermal Resources (CDOGGR) website shown below. There are over 75 oil and gas fields in the Valley, including several giant fields (more than 100 million barrels of oil each). As of 2006, cumulative production in the area was about 12 billion barrels of oil equivalent. In recent years, the Valley has accounted for about 85-90% of California's development completions. Over 90% of the wells are on private leases. Between 2001 and 2005, there were a total of 10,873 wells drilled in DOGGR District 4, which is mainly Kern County. In the same 4 years, there were a total of 807 permits issued to drill wells on federal lands throughout California. Approximately 90% of those wells were in Kern County (720+ wells). The ratio of 720 federal vs. 10,873 total (6.6% federal) has remained relatively constant throughout time, although the exact numbers are not readily available.

The San Joaquin Valley is expected to continue as the primary source of oil in California's oil and gas development. Additional information such as the number of existing wells and expected drilling, completion and abandonment rates is in the section on Environmental Consequences.

Sources: ftp://ftp.consrv.ca.gov/pub/oil/annual_reports/2005/PR06_Annual_2005.pdf for 2005
Similar for other years 2001-2004.

VI. Environmental Consequences

Social-Economic

The proposed action will potentially allow new development of these parcels for oil and gas production. This would create 10-15 temporary jobs primarily related to drilling and completion of wells, and will create a demand for supplies and services that will likely come from nearby areas.,

Visual Resources

All new development will take BLM Best Management Practices into consideration. This includes, but is not limited to, proper site selection, minimizing disturbance, selecting colors that blend with the background, and reclaiming areas that are not in active use. Wherever practical, no new development will be allowed on ridges or mountain tops in Visual Area III. Overall, the goal is to not reduce the visual qualities that currently exist.

Recreation

There will be no impacts on the limited recreation opportunities as a result of this action.

Analysis Assumptions

Reasonable Foreseeable Oil and Gas Development (RFD) Scenario

(1) General Discussion

Exploration activities within the area will generally focus on oil and not natural gas. The mid to southern San Joaquin Basin is primarily an oil province with small amounts of natural gas as an associated product. Less commonly, non-associated gas is also found. Exploration will use such tools as geophysical surveys (usually this means running seismic lines), and drilling exploration wells. A brief summary of these activities follows. In all cases, a site specific EA would be prepared prior to approval of any application to conduct surface disturbing activities (see previous discussion under IV. Conformance with Existing Land Use Plans). Detailed descriptions of typical oil and gas activities may be found in the Caliente Resource Management Plan, December 1996, Ch. 5 page 45.

Exploration Activities

After seismic and/or detailed stratigraphic basin studies are made, an APD may be submitted. Because of the location of nearly all of the lands within this EA, many of the APDs would be for exploration drilling, which includes drilling to discover entirely new fields, or discovery of previously untapped reservoirs within existing fields. Drilling to discover new fields is of greatest concern in this EA because in most cases it would involve disturbances of previously undisturbed lands. Historically in the San Joaquin Valley, only about 10-15% of wildcat wells were successfully completed as producers. In fact, since 1990, 64 exploratory wells have been drilled (source: personal email from Mark Gamache, CDOGGR, to Jeff Prude,

BLM, dated 3-27-07), and only 1 relatively small field (Rose field, discovered July 2000) has been discovered. The remaining 85-90% of the wells are non-producers which are immediately plugged and abandoned (P&A'd), so any disturbance associated with the drilling of these P&A'd wells would be temporary.

Production Drilling

Development wells include step-out or field extension wells, enhanced oil recovery wells, or other infield wells. Even though the drilling of development wells will be adjacent to or actually within areas of current production, it still may require some disturbance on previously undisturbed lands.

Based on the data for the past 10 years, up to 25,000 wells are projected to be drilled on Federal, state and private lands in the San Joaquin Valley in the next 10 years. If historical trends continue (and there is no data to suggest otherwise), about 5-10% of those, or 1,250-2,500, will be on federal mineral estate. Nearly all of these will be within the same general area of the state as lands covered by this EA. The vast majority (over 90%) of these wells will be on private land.

Approximately 95-97% of the wells projected to be drilled during the next ten years will be development wells (as opposed to exploratory wells). An estimated 90-95% of the development wells will be successful, while the remainder will be unsuccessful and will be plugged and abandoned upon completion of drilling. Although new wells continue to cause surface disturbance, the number of wells being plugged and abandoned after reaching their economic limit is increasing. Recent trends have shown that the total acres of newly disturbed land are being significantly offset by the fact that there are nearly as many wells being abandoned as are being drilled in this area.. According to the CDOGGR, during the last 5 years for which records are available (2001-2005), there were 10873 wells drilled, of which 10746 were completed. However, during that same period, 8844 wells were abandoned. It is reasonable to assume that this trend will continue. Even though the new disturbances will undoubtedly be significantly offset by these reclamation activities, the beneficial effects of that offset were not considered. (Data from the California Department of Conservation, Division of Oil and Gas – see below).

Source: ftp://ftp.consrv.ca.gov/pub/oil/annual_reports/2005/0101summary3_05.pdf.

The total number of acres of Federal mineral estate in the San Joaquin Valley is about 440,000 acres. The total number of acres in the parcels to be offered in this lease auction is about 16,765.67 acres, or less than 4% of the total. During the past 10 years, BLM has issued 498 leases throughout the state, covering 367,000 acres. On all of that land, only 17 wells have been drilled. Six leases had 1-2 wells, one lease had 10 wells, and the remaining 491leases have not seen any drilling activity. The number of leases and acres specifically in the San Joaquin Valley is not readily available, but it would obviously be smaller.

This time frame includes periods with both very high and very low oil and gas prices so on average, it is a reasonable base period from which reasonable projections can be made. Because prices are significantly higher now than in the past, there is a possibility that drilling on new leases will increase. However, the new leases offered herein still represent only a small fraction of lands already leased and available for drilling, so we do not expect these particular parcels to see anomalous levels of drilling. There is no apparent data to suggest otherwise. The maximum number of wells on any new lease has been 10 wells. It is more likely that significantly fewer wells will be drilled on any of these parcels. Based strictly on the historic levels of activity on new leases in California within the last 10 years, during a wide range of product prices, we would expect only 1 well total on all of these parcels. However, in order to analyze the sorts of impacts that could happen if there were a couple of successful wildcat (exploratory) wells that required 5 development wells apiece, we will analyze the impacts of up to 20 wells being drilled on the lands offered herein. This assumes 10 exploratory wells and 10 development wells, with no particular area being any more likely than

another to contain a higher percentage of wells. Although it could be argued that some areas are closer to known production than others, and therefore more likely to see development, it could be countered that those same areas have been more effectively "condemned" by the presence of actual unsuccessful exploratory wells that were drilled in the past. Overall, there is not enough data to make any more accurate projections of where activity might occur, and whether it would be successful.

Only 6% of the lands being offered are within administrative boundaries of existing fields (1079 acres out of 16,765.67). Some of the leases may have more than one well, some only one well and some no wells. Any future development on parcels in this lease auction would therefore represent only a very small portion of the total wells drilled on Federal mineral estate, and is well within the scope of activities which have been previously analyzed in the Caliente Resource Management Plan and the Reasonable Foreseeable Oil and Gas Development. The total number of wells expected on these parcels, 20, is insignificant in comparison to the total number of wells and other activities expected in the area.

For details on the projected miles of seismic lines run, number of wells, amount and size of surface facilities, and total acres of disturbance, see Table 1 below.

TABLE 1. Maximum expected gross surface disturbance on 2007 lease auction tracts with Preferred Alternative **Lease with Limited Surface Use - Protected Species (LSU - Protected Species) and Limited Surface Use – Sensitive Species (LSU – Sensitive Species) Stipulations - Proposed Action)**

Surface Disturbing Activity	Number	ACRES			
		Perm.	Temp.	Transient	Total
In-field Dev. Wells Drilled	10 wells	10			10
Tank Batteries	2	2			2
Exploration Wells, incl. roads	10 wells	4	36		40
Cross Country Seismic Lines	20 miles			30	30
Surface Disturbance, acres		16	36	30	82

The acres of disturbance were based on the following estimates:

Description	Number	Unit Surface Disturbance (acres)	Total Surface Disturbance (acres)
Exploratory Wells			
Well Pads	10 wells	1 acre/well	10 (2 perm, 8 temp)
Roads (1 mile, 20' wide – With turnouts and cut and fill due to hilly terrain, effective width increased to 25')	10 x 1 miles	3 acre/mile	30 (2 perm, 28 temp) (Assumes 8 of the 10 exploratory wells are dry, and therefore dist. is temporary)
Development			
Well Pads	10	0.5 acre/well	5 (5 perm)
Roads (20' wide, 1,000')	10 x 1,000'	2.4 acre/mile	5 (5 perm)
Facilities	2	1 acre/facility	2 (2 perm)
Seismic (12' wide road)	20 miles	1.5 acre/mi	30 (30 transient)
TOTAL			16 perm, 36 temp, 30 trans

Note: All acres are estimates, since there are so few federal exploratory wells in hilly terrain such as these. We assume that significant efforts are made to use existing roads, rights of way, and to minimize disturbance wherever possible.

Ongoing Reclamation of Existing Disturbed Surfaces

The potential disturbance of up to 82 acres, 80% of which is transient or temporary, will be significantly offset by the fact that there are nearly as many wells being abandoned as are being drilled in this area. According to the CDOGGR, during the last 5 years for which records are available (2001-2005), there were 10873 wells drilled, of which 10746 were completed. However, during that same period, 8844 wells were abandoned. It is reasonable to assume that this trend will continue. Even though the new disturbances will undoubtedly be significantly offset by these reclamation activities, the beneficial effects of that offset were not considered.

Source: ftp://ftp.consrv.ca.gov/pub/oil/annual_reports/2005/0101summary3_05.pdf.

Proposed Action Alternative – Effects on Critical Elements

Resources in addition to those discussed below were considered as a part of the scoping process. Those resources were dropped from further consideration once it was determined that there was minimal potential for them to sustain significant impacts. The following elements of the human environment are subject to requirements specified in statute, regulation, or executive order, and must be considered in all environmental assessments. Those elements that are affected are discussed below in greater detail.

Critical Element	Affected		Critical Element	Affected	
	YES	NO		YES	NO
Air Quality	X	__	**Wastes, Hazard/ Solid**	__	X
ACEC's	__	X	**Water Quality**	__	X
Cultural Resources	__	X	**Wetlands/Riparian**	__	X
Floodplains	X	_	**Wild and Scenic Rivers**	__	X
Native Amer. Concerns	__	X	**Wilderness**	__	X
T & E Species	X	__	**Weeds**	__	X
Environmental Justice	__	X	**Farmland**	X	__

ACEC's (Area of Critical Environmental Concern) and other Special Management Areas

All parcels identified in this EA are not in or adjacent to any ACEC areas and are not in or adajacent to the Carrizo Plain National Monument.

Floodplains

Portions of EOI Group Numbers 242, 243, 244, and 245 are located within the 100-year floodplains of Cedar Creek (Parcel number 74 and 77) , Packwood Creek (Parcel number 57, 59, 61, and 66) and Polanio Pass Creek (Parcel 41) all of which are ephemeral in nature. Even though these creeks are usually dry, construction of oil/gas wells, pipelines, facilities, and other equipment will be prohibited in the portions of these parcels that are within the 100-year floodplains. A map showing the restricted areas is available in the Bakersfield Field Office of the BLM. Regardless of where on each parcel development may be proposed, site-specific NEPA analysis would identify measures to minimize the risk of flood

damage to oil and gas facilities/wells and oil spills or other contamination entering the above mentioned creeks boundaries.

Impacts to Air Quality

Introduction - Impacts would be in the form of gaseous and particulate matter that are emitted into the air as a result of the activities being analyzed. All of the pollutants subject to analysis are addressed in federal, state and local laws, statutes, regulations and rules. The federal and state ambient air quality standards define the criteria pollutants that are part of the emissions that are typically analyzed. In addition to the criteria pollutants, there are criteria for air toxics, hazardous air pollutants (HAPs), Prevention of Significant Deterioration (PSD), fugitive dust and regional haze.

The analysis is based upon various activities' potential to emit. The analysis is further limited by the need to look at changes in emissions that would occur as a result of the proposed action. Many similar regional activities that produce emissions would not be impacted by the proposed action and would not be addressed in this analysis. The activities associated with the proposed action that would have an impact on air quality include construction activities at the well pad, establishing vehicle routes, vehicle access, drilling operations, development, production, and Rights of Ways. Changes in these activities would result in changes in disturbance rates to soil surfaces and would result in changes in PM10 and PM2.5 emissions. In addition, combustion emissions and other gaseous emissions including ozone precursors such as nitrous oxides and reactive organic gases would be produced. Based upon the potential to emit and emissions that are likely to be affected by the proposed action, this analysis primarily addresses the particulate emission PM10 and the ozone precursor emissions. In addition, these two pollutants are important because the affected area is classified as federal nonattainment areas for PM10, PM2.5 and ozone (both 1-hour and 8-hour).

Planning Assumptions for Air Quality: State Implementation Plans (SIPs) are prepared for most of the federal nonattainment areas. These SIPs are designed to result in compliance with the NAAQS by federal deadlines. The SIPs are implemented through a series of rules. In addition, air quality is highly regulated by a number of additional federal, state and regional regulations and rules. These regulations and rules apply to many of the activities in the proposed action. These activities would be required to be conducted in compliance with the regulations and rules. As the new air plans for PM2.5 and the 8-hour ozone standards are developed, activities would be conducted in compliance with those plans also. A certain degree of uncertainty exists as to the exact development schedules, location of wells, which wells would produce, the number of wells that would be drilled and a number of other factors which are addressed in the RFD. This analysis is based on the same assumptions as to a normal expected activity level as reflected in the discussion in the RFD.

Expected Impacts - The proposed action could ultimately result in a number of activities which would generate emissions. Project emissions include direct emissions of NOx, SOx and VOC (which are precursor emissions for ozone and PM2.5), CO, PM10 and PM2.5. These emissions are associated with combustion sources and fugitive sources associated with exploration, drilling, production and abandonment such as seismic exploration,/diesel drill rig engines, drill pad construction equipment (e.g., dozers, backhoe, grader, etc.), temporary production flares, remedial well work, equipment trucks, hauling of liquids, drill rig crew trucks/vehicles, portable lift equipment, portable testing equipment and temporary and permanent production facilities. In addition, PM10 will be released during the drill pad construction phase and from the daily ingress and egress of vehicles on the unpaved access roads. The primary emission sources during any new construction at the drill sites and on Rights of Ways would be from heavy equipment exhaust and fugitive dust. Other emission sources will occur during the operation and maintenance of these leases and Rights of Ways. These sources include oil facilities, gas facilities, operator vehicle traffic, and gas powered oil well pumping units.

The expected emissions from the proposed action would be low both in relation to the overall activity in the five county region, and by itself. Over the next ten years the proposed action is projected to result in permanent disturbance to up to 16 acres, temporary disturbance up to 36 acres, transient disturbance up to 30 acres, and the development of up to 30 new wells. Based upon existing estimates for oil and gas development, this would generate an estimated emission of less than 1,000 pounds of PM10 emissions and less than 1200 pounds of NOx per year. These emissions are well below deminimus emission levels for the pollutants (10 tons per year for VOC or NOx and 70 tons per year for PM10) and insignificant in light of the 1000-2500+ new wells that are drilled in these areas every year, along with the very large volume of automobile and truck traffic and significant other industrial and agricultural sources.

BLM requires that the lessee/operator has the responsibility for ensuring that all operations are properly permitted with the appropriate agencies, and that the operations are in compliance with all mobile and stationary source guidelines. Mitigation measures would include such items as dust control using application of water or pre-soaking and limiting traffic speed on unpaved roads. It would also include such items as use of low-emission construction equipment, use of low sulfur fuel, and/or use of the existing power transmission facilities, where available, rather than temporary power generators. The failure of the lessee/operator to follow the air quality rules would likely result in fines and could also lead to the loss of the BLM and air district authorizations.

Conformity:
The USEPA rules require federal agencies to determine whether a proposal conforms to the existing SIPs. USEPA rules state that an analysis is not necessary when the total emissions do not exceed deminimus levels, comply with the SIP and do not exceed 10% of the regional emissions. As the emissions are well below deminimus levels, comply with the SIP and are well below 10% of regional emissions, no further conformity analysis is necessary.

Impacts to soil

The parcels associated with the proposed action are on both disturbed and undisturbed surface. We are projecting that no more than 20 wells will be drilled on these parcels over the next ten years. The impacts due to this disturbance will be reduced because most or all surface disturbing activities will be subject to rehabilitation and mitigation measures that are included in sundry notices and applications for permit to drill. Impacts associated with development of these leases may include erosion due to the devolopment of well pads on slopes and other unstable geography. These impacts will be mitigated on a site-specific basis using best management practices, and proper well placement. Impacts from spills/contamination are expected to be very localized because all activities will be subject to spill prevention and control plans, and any contamination will be removed/mitigated as required in those plans.

Impacts to Water

Many of the parcels are in areas where there are or may be fresh water aquifers. All such aquifers will be fully protected by using standard oilfield practices such as requiring a string of casing to be cemented across all fresh water aquifers and by requiring compliance with all appropriate laws, regulation, and BLM policies, including, but not limited to, state and federal Clean Water Act(s), Memoranda of Understanding (MOUs) between BLM, EPA, CDF&G, and CDOGGR, and compliance with Regional Water Quality Control Board requirements.

Where there is a threat to water quality or where water quality does not meet state standards, coordination must occur with the regional water quality control board(s). Where aquatic or riparian habitat may be impacted, coordination with CDF&G must occur. All parcels that contain any water bodies (streams, lakes, springs, etc.) must have adopted Best Management Practices (BMP) for all activities associated

with oil and gas operations that could affect water quality. A list of areas where there are aquifers that are considered to be fresh can be found in Volumes I, II, and/or III of California Oil and Gas Fields, published by the California Conservation Division.

Although there are few or no ponds, lakes, or streams that contain water year round, there are three ephemeral drainages/creeks –Cedar Creek, Packwood Creek, and Polanio Pass Creek- that cross portions of EOI Group Numbers 242, 243, 244, and 245 (Parcel Numbers 41, 57, 59, 61, 66, 74, and 77). Conditions of approval will be attached to permit approvals that require protective measures to be taken where spills or other contamination are potentially a concern to surface or underground water. In addition, Special Stipulation 7 will be added to these parcels (see above) that will prevent facilities/wells from being installed within those 100-year floodplains. This will protect all waters in the area, including those mentioned previously, from contamination related to floods.

Farmland

A portion of EOI Group Number 242 (Parcel Number 57) is located on acreage designated as farmland. This parcel is on split estate lands that is currently a 255-acre almond orchard. Although there may be local or state laws that require the leaseholder to compensate the landowner for any crop loss or damage caused by the development of their lease, the only compensation provided for by federal law on this split estate land is the value of crops and improvements that are related to stock-raising, such as corn, hay, and barn and fences for livestock.

Biological Resources

Impacts to Habitat from Oil and Gas Activities

A likely effect of new oil and gas activities on these lease parcels would be the loss or alteration of habitat. BLM estimates that wells, roads, facilities and seismic exploration could result in permanent impacts to 16 acres, temporary impacts to 36 acres and transient impacts to 30 acres. This totals 82 acres within the 16,766 acres being offered in this lease sale (Table 1). These estimates of habitat loss or alteration are within the range expected and analyzed in the Caliente RMP and Biological Opinion.

Of the 16,766 acres, 16,511 acres are presently native lands and 255 acres are under active cultivation. If all 82 acres of disturbance were to occur on native lands this would amount to less than 1% of the native lands offered under this lease sale.

Impacts to habitat on cultivated lands would depend on whether the lands are under active cultivation or are fallowed at the time of any development. If the land is under active cultivation, impacts to native vegetation and wildlife are likely to be minimal. If the lands are fallow, the area may be a bare area of cultivated soil or a weedy field of non-native plants. If wildlife (such as burrowing mammals or birds) reoccupies fallow fields, their habitat could be impacted by oil development and exploration activities

Impacts to habitat on native lands would depend on the native vegetation type and the topography of the lease parcels. The lease parcels contain a combination of grassland, shrubland and woodland vegetation communities. Habitat disturbance in grasslands generally has less of an impact than disturbance in shrublands and woodland since shrubs and trees take longer to become re-established. Shrublands and woodlands also support a greater diversity and number of wildlife species as trees and shrubs provide a high variety of food and cover. As the diversity of habitat structure increases from grassland to shrubland to woodland, so does the wildlife species richness. Thus, there is more potential for impacts to wildlife in shrubland and woodland communities, than in grassland communities. The impacts associated with well pads and roads, however, would be very site-specific and are not expected to significantly affect these

habitats at the community scale. The footprint of the disturbance is also expected to be a small proportion of the habitat area.

Topography can play a role in the amount of surface disturbance that results from well and road construction. Flat areas will require little or no cut and fill, and road routes are not constrained by topography. In hilly areas, cut and fill may be required which disturbs additional land. Roads routes may have to travel longer distances to meet engineering requirements and may also require cut and fill. Areas lacking roads near potential drilling sites will have more disturbance, as the entire access route will need to be constructed rather than just a short spur route from an existing road.

The parcels that are relatively flat are limited to the cultivated land in the Shale Hills Unit. These cultivated lands have relatively good access with existing roads in the interior or on the edge of the parcels. Well pad and road construction is these parcels, combined with the disturbed nature of the parcels, will result in minimal impacts to biological resources.

The remaining parcels are range from hilly to steep terrain. These hilly parcels are likely to require new road construction to access well pads unless the wells are located adjacent to an existing road. While many of these lease parcels have one or more existing roads, it is likely that new roads would be required to reach the proposed well pad locations. As the terrain becomes steeper and hilly, more side slope, cut and fill construction may be required. Restoration of side slope, cut and fill pads and roads is more difficult. Impacts in such areas, even if the well is abandoned and the road restored, may persist as altered, but functional, habitat, for several decades.

Habitat restoration also takes longer in shrublands and woodlands as opposed to grasslands. Grassland habitats may resemble their pre-project conditions in 2 to 5 years. Shrublands may require 5 to 15 years and woodlands even longer as trees must be reestablished on the site. The parcels in this lease sale are generally grassland and shrubland habitats that return to their pre-project composition and structure relatively easily and quickly.

Certain type of soils and exposures may take longer to restore. Vegetation on exposed, dry shale areas may be slow to recover. Such areas, however, have naturally sparse vegetation and much exposed soil.

Impacts from Seismic Exploration

The projected 20 miles of seismic exploration would result in about 30 acres of surface disturbance. BLM typically requires receiver lines to be hand carried, helicopter-transported, or transported by light all-terrain vehicles. This eliminates cross-country truck travel on the receiver lines. The source points are typically located along lines using buggy-type vibroseis vehicles, or buggy-mounted or heliportable drills for shot holes. If exploration is conducted using continuous vibroseis source points, there would be about 24 acres of surface disturbance. The use of shot holes or heliportable drills in hilly terrain would reduce this disturbance estimate. Monitoring and post-project reports from previous geophysical projects indicates that seismic projects result in transitory impacts to soil and vegetation. Transitory impacts generally recover within one growing season if normal rainfall is received. Larger shrubs can be damaged by cross-country source vehicle travel, and may take several years (3 to 10) to recover or reoccupy the travel route. In most cases, off road vehicle use is limited to one or two passes. Use of ATV's rather than full size vehicles also helps to reduce soil disturbance.

If a seismic project is proposed within endangered species habitat, it would be subject to ESA compliance. In Kings and Kern Counties, the existing Oil and Gas Programmatic Biological Opinion requires pre-activity surveys, take-avoidance and mitigation measures for geophysical operations. The implementation of these measures would minimize impacts to habitat features used by listed species and

minimize habitat disturbance. While seismic activities may disturb and displace wildlife during the operations, in many instances, small mammals are observed to dig into vibroseis footprints and vehicle tracks following project impacts.

Impacts to Species from Oil and Gas Activities that result from Oil and Gas Leasing

Potential impacts to plants include direct mortality from earth excavation or crushing by vehicles. Adverse impacts could also result from soil erosion resulting in loss of the supporting substrate for plants, or from soil compaction resulting in reduced germination rates. Impacts to plants occurring after seed germination but prior to seed set could be particularly harmful as both current and future generations would be adversely affected. Weeds which are introduced and/or promoted by soil disturbing activities compete against and displace native vegetation.

Development associated with oil and gas activities has the potential to affect rare plants. Soil disturbing activities directly affect species by destroying habitat, churning soils, impacting biological crusts, disrupting seedbanks, burying individual plants, and generating sites for undesirable weedy species. Weeds may be introduced during construction and operation of the lease. Roads generate weedy habitat along their edges, as well as avenues for weed invasion into unoccupied territory. Dust generated by construction activities and travel along dirt roads can affect nearby plants by depressing photosynthesis, disrupting pollination, and reducing reproductive success. Oil or other chemical spills could contaminate soils as to render them temporarily unsuitable for plant growth until cleanup measures were fully implemented. If cleanup measures were less successful, longer term impacts could be expected..

Potential impacts to animals, including listed species, include direct mortality or injury, loss of dens or burrows, displacement, and human disturbance. Direct mortality or injury could result from vehicle strikes, or from collapsed dens and burrows resulting in animals being crushed or entombed. Burrows and dens could be destroyed or damaged by vehicle traffic, particularly heavy equipment. Animals could be displaced during project activities. Such displacement of animals into unfamiliar areas could increase the risk of predation and increase the difficulty of finding required resources such as food and shelter. Human disturbance could result in displacement of animals, even though dens and burrows may not be directly impacted. Human disturbance also might alter the behavior of animals (e.g., activity periods, space use) resulting in increased predation risk, reduced access to resources, and reduced breeding success. Project activities during the spring breeding season could increase the potential for adverse impacts. Animals could also become entrapped in oil spills, leaks, sumps or improperly maintained well cellars or other facilities. These potential impacts are within the range analyzed in the Caliente RMP and Biological Opinion.

Roads and large areas of disturbance can be a barrier to movement for some animal species. Animals in the San Joaquin Valley suite of sensitive animal species, however, generally do not have difficulty crossing roads or disturbed areas. It is not unusual to observe kangaroo rats, kit foxes, antelope squirrels or blunt-nosed leopard lizards crossing roads. This tendency does expose these animals to vehicle strikes, especially on paved roads with higher vehicle speeds. The impact of roads, large areas of disturbance, barriers and vehicle strikes is within the range analyzed in the Caliente RMP and Biological Opinion.

Structures such as polelines, buildings, and pumping units may provide perches for raptors. Addition of such structures in flat terrain may increase predation rates on small mammals and other prey species. The types of structures typically found in oilfields, however, do not tend to provide nesting structures for raptors, including ravens. Introducing nesting structures can have a greater impact on prey species since much more prey is taken by raptors that are rearing young, and the nest site is continuously occupied for the season increasing the duration and frequency of the predation effect. The effect of introducing

structures that will only serve as perches is not expected to be significant as such perches are likely to only occasionally be used for hunting.

Individual projects would be subject to NEPA and ESA review. If a project is determined to adversely affect listed species, the project would be subject to compliance with the Oil and Gas Programmatic Biological Opinion or a project level consultation. Under the Oil and Gas Programmatic Biological Opinion, listed species and habitat surveys are required prior to BLM authorizations and surface disturbing activities. Habitat features used by listed plants and animals, special status plant populations, and important habitats are avoided as required in the BO. Direct incidental take is avoided for San Joaquin kit fox and blunt-nosed leopard lizards, and direct take is avoided to the greatest extent practicable for the other listed animals species (rarely resulting in direct take). Impacts to the habitats supporting these species are mitigated through the Biological Opinion's requirement that "compensation habitat" be acquired and managed as habitat in perpetuity in an agency-approved off-site location. The BO requires that three acres be acquired for each acre subject to permanent disturbance and 1.1 acres be acquired for each acre of temporary disturbance. The BO also requires that each acre of BLM listed species habitat on federally owned surface be "replaced", acre for acre, since the BLM lands are considered conserved lands by the Recovery Plan and Draft Kern Valley Floor Habitat Conservation Plan.

In addition to NEPA and ESA review, all new oil and gas leases would be subject to the "Limited Surface Use – Protected Species" and "Limited Surface Use – Sensitive Species" stipulations. Leasing of lands under these constraints will provide strong protection for protected species and special status species.

Effects to Federally Listed and Proposed Species, and Critical Habitat

Several federally listed species (California jewelflower, Kern mallow, Hoover's woolly-star, San Joaquin woollythreads, San Joaquin adobe sunburst, giant kangaroo rat, Tipton kangaroo rat, blunt-nosed leopard lizard, San Joaquin kit fox, California condor) may occur on or in the vicinity of several of the parcels. If exploration or development occurs on one of these parcels, the proposed action may affect listed species.

Section 7 of the Endangered Species Act requires a federal agency to complete Formal Consultation with the USFWS prior to undertaking an action which may affect a listed species. Formal Consultation addressing the impacts of oil and gas leasing, exploration and development, to these species, was completed on March 31, 1997 (Caliente RMP Biological Opinion 1-1-97-F-64). The U.S. Fish and Wildlife Service concluded that oil and gas leasing, exploration and development, as proposed by the Caliente RMP, was not likely to jeopardize the continued existence of these species. The proposed action is in compliance with the Caliente RMP, and thus, is consistent with the March 31, 1997 Caliente RMP BO. Should an exploration or development proposal be submitted for any of these leases, it will be subject to additional site specific ESA review as described above.

There will be no effect to critical habitat as none of the parcels include designated or proposed critical habitat. Critical habitat for the California red-legged frog and California tiger salamander occurs west of the Bluestone Ridge – Orchard Peak Unit and Woods Canyon Unit, but does not extend onto any of the offered parcels.

Relationship to San Joaquin Valley Endangered Species Recovery

The Caliente RMP specifies that that BLM land within the San Joaquin Valley be managed to contribute to regional conservation goals. Lands that have been identified by the Kern Valley Floor Habitat Conservation Plan and the San Joaquin Valley Recovery Plan as part of the regional conservation strategy are managed by BLM as reserves (red zone lands) or corridors (green zone lands). Of the lands offered in

this sale 400 acres are within reserves (red zone) and 15,433 acres are within corridors (green zone). The remaining 820 acres are not part of the San Joaquin Valley strategy.

Within reserve and corridor lands, BLM requires mitigation and compensation for development activities. Disturbance of habitat is compensated at a rate of 1.1 acre for every acre temporarily disturbed, and 3 acres for every acre permanently disturbed. In addition, disturbance to BLM surface requires an additional replacement factor of 1 acre for every acre disturbed. Species surveys, avoidance of habitat features and implementation of measures to minimize take are also standard requirements. As an additional safety net, BLM has established a limit to the amount of disturbance on parcels in reserves and corridors. Disturbance on reserve lands is limited to 10% and on corridor lands to 25%.

The RFD estimates that up to 82 acres of disturbance could result from wells, roads, seismic exploration and other oilfield development. If all 82 acres of disturbance were to occur in the green zone (corridor), this would amount to less that 1% of the green zone land offered in the lease sale. It is unlikely that all 82 acres of development would occur within the 400 acres of red zone (reserve). Development of the red zone would be limited to 10%, or 40 acres. Any disturbance in the green and red zone would require compensation. Additionally, any disturbance to BLM surface would require an additional acre for acre replacement factor.

BLM's program for the management of reserve and corridor lands has been reviewed and approved by the USFWS as part the Caliente RMP Biological Opinion 1-1-97-F-64 and the Oil and Gas Programmatic Biological Opinion 1-1-01-F-0063.

Species Specific Impacts

Table Biology 1 and Table Biology 2 list the Federally listed, state listed and BLM sensitive species with the potential to occur on the offered lease parcels.

Federally and State Listed Species

Bakersfield Cactus. Bakersfield cactus is known to occur north of the southern parcel in the Poso Unit. Since Bakersfield cactus is easily identified, survey and avoidance should minimize or eliminate impacts to the species. Under the Oil and Gas Programmatic, Bakersfield cactus is to be avoided by a 50-foot buffer.

California Jewelflower. Some of the proposed lease parcels are within the historic range of California jewelflower, but no extant populations are known within Kern or Kings Counties. Under the Oil and Gas Programmatic, any populations discovered will be avoided by a 50-foot buffer. Jewelflower plants can be identified during flowering season, typically February to March.

Kern Mallow. There is a slight chance that Kern Mallow might be encountered in the McKittrick Unit. Under the Oil and Gas Programmatic, populations are to be avoided, to the greatest extent possible, otherwise, measures, such as delaying surface disturbance until after seed set, collection of seed, reseeding, and stockpiling of topsoil, may be required to minimize impacts.

San Joaquin Woollythreads. There is potential for woolythreads to be found within the Temblor Mountain region. Constraints for woolythreads would be the same as those for Kern mallow.

San Joaquin Adobe Sunburst. San Joaquin adobe sunburst occurs in the foothills of the Sierra Nevada and has been reported within ½ mile of the Mountain Creek parcel. This species was not included in the oil and gas programmatic opinion, thus, any development with the potential to impact the adobe sunburst

would have to acquire a new biological opinion from FWS. Population avoidance measures would have to be incorporated into any development plan.

Hoover's Wooly-star. Hoover's woolly-star may be abundant at some lease parcels, particularly in gentle terrain, but it also occurs in rugged terrain. Hoover's woolly-star could be adversely impacted by earth excavation, off-road vehicle traffic, erosion and spills. It is projected that the post-leasing activities will result in temporary or transient habitat disturbance. Hoover's wooly-star can quickly colonize disturbed areas and is expected to re-colonize temporary or transient disturbance areas. Survey and avoidance measures will also be implemented for Hoover's wooly-star to further minimize impacts to this species.

Valley Elderberry Longhorn Beetle. One parcel, Mountain Creek, is within the range of the valley elderberry longhorn beetle. Blue elderberry, the host plant is known to occur on the parcel. Potential impacts to the species, if it occurs on the parcel, should be avoidable by requiring avoidance of elderberry plants. Operators would be required to avoid all elderberry bushes during construction, operation and maintenance activities.

California Red-legged Frog and California Tiger Salamander. Critical habitat for the California red-legged frog occurs just west of the Bluestone Ridge – Orchard Peak and Woods Canyon Units. Should red-legged frogs use any of the parcels in these units, potential impacts could include alteration of breeding and aestivation habitat, and injury or mortality due to collisions with vehicles and equipment. Such impacts can be minimized by requiring surveys for species and habitat, and requiring avoidance of breeding ponds. Aestivation habitat would be avoided as much as possible. If a project cannot be designed to avoid all impacts to the California red-legged frog, formal consultation with the USFWS will be completed. Any development project will be required to comply with the resulting Biological Opinion.

Critical habitat for the California tiger salamander occurs 1.5 and 1 miles west, respectively, of the Woods Canyon and Franciscan Units. The nearest know location of tiger salamander is approximately 2 miles west of these units. A distance of 0.7 miles is generally used as a guideline for evaluating potential habitat use by tiger salamanders. Since the distance to critical habitat and the nearest known location is greater than the 0.7 mile guideline, it is unlikely that tiger salamanders occur in the unit, and impacts to the tiger salamander are not expected.

Blunt-nosed leopard lizard. Blunt-nosed leopard lizards may occur within the Round Mountain, Poso, McKittrick, Cedar Canyon, Shale Hills – Packwood, Fransiscian Units. Potential impacts to blunt-nosed leopard lizards include direct mortality, loss or alteration of habitat, and harassment. Blunt-nosed leopard lizards are active during the day, which enhances the threat of some impacts, such as vehicle strikes. Project activities could destroy burrows used by blunt-nosed leopard lizards. Lizards can become entrapped or buried inside destroyed burrows as well. Discharge of waste water could drown lizards using drainages. Lizards can become entrapped or drown in oil or tarry substances. Improperly covered well cellars, buried valve boxes, buckets and vertical pipe sections can act as pitfall traps and entrap lizards. Pre-construction surveys and implementation of mitigation measures that are part of the Oil and Gas Programmatic Biological Opinion will reduce the potential for these impacts. BLM lease operating standards (e.g. waste water discharge policies, proper maintenance of equipment and facilities, etc) will also reduce the potential for these impacts.

California Condor. All of the units occur within the historic range of the California Condor. The several acres of road, well pad and facility construction are not expected to alter condor habitat at the site-specific or landscape scale. Condors are unlikely to land on the ground near the wells. However, the oil rig drilling structures and new powerlines could pose a risk of collision to condors. New road access into

unroaded areas may pose an additional risk of harmful human interactions (shootings, microtrash, dumping of contaminants). The BLM lease operating standards would limit contaminant exposure and oil field guidelines developed for condor habitat would be implemented at the project stage to avoid such impacts.

Giant kangaroo rat. Potential impacts to giant kangaroo rats include direct mortality, loss of burrow systems, loss or alteration of habitat, and harassment. The construction and maintenance of wells pads, access roads, pipelines, and other oil field structures may trap or bury kangaroo rats in their burrows. Kangaroo rats can also drown or become entrapped in spilled oil or tarry substances. Kangaroo rats may also be killed by vehicles. Burrows can also be damaged or destroyed by project activities. Some habitat may also be lost or altered.

Giant kangaroo rats are known to occur near the McKittrick unit and have the potential to occur in the Cedar Canyon, Shale Hills – Packwood and Franciscan Units. Pre-construction surveys and implementation of mitigation measures that are part of the Oil and Gas Programmatic Biological Opinion will reduce the potential for impacts. Giant kangaroo rats are mostly active at night and most vehicle traffic is expected during daylight hours. This combination will reduce the chances of a vehicle strike.

San Joaquin kit fox. San Joaquin kit fox may occur within all the units except the Mountain Creek Unit. Potential impacts to San Joaquin kit fox include direct mortality, loss of dens, loss or alteration of habitat, human disturbance, and exposure to oil field chemicals. Construction of well pads, access roads, and associated oil field facilities may trap or bury foxes, particularly if the construction occurs on or near a den site. Dens are ecologically important to kit foxes. Since kit fox use multiple dens, the occasional loss of a den is not expected to be significant. Activities near or impacts to natal dens could have more impact, particularly if such impacts occur while young pups are present. Disturbance to dens, especially natal dens, should be minimized due to survey and avoidance measures required by BLM for all actions.

The McKittrick unit is located in the western Kern county core population, one of three core populations identified by the U.S. Fish and Wildlife Service as important for species recovery. One goal for the Western Kern county core population is to protect natural lands with appropriate land use and management. Project activities will result in some habitat loss. This habitat loss is not expected to conflict with recovery plan goals as individual projects are expected to be relatively small (less that 3 acres on average) compared to the home range of a kit fox (average 1144 acres) and widely dispersed over space and time. In addition, standard kit fox mitigation measures will be applied as appropriate to all BLM authorizations and projects.

Kit fox have been entrapped in well cellars that are not properly covered. In 1981 two kit fox pups were rescued from a concrete well cellar on NPR-2. In 1990, the remains of two kit fox pups were recovered from an abandoned well cellar.

The production, transportation, processing and storage of crude oil may result in some spills. The washes and drainages in which spilled oil collects are also primary travel routes and foraging areas for kit fox and other wildlife. Kit foxes could also drown in pooled oil, or become mired in tarry substances. In 1982, 2 kit fox pups were found dead in spilled oil on NPR-2 as a result of activities by a lessee. BLM has strict requirements for prompt containment and clean-up of such spills. This should help to reduce the impacts of oil spills on kit foxes.

Vehicle strikes are likely to occur as a result of project related traffic. Between 1983 and 1986, vehicles were the cause of about 6% of known kit fox deaths. As a comparison, during the same time period, coyotes were responsible for most (45%) of the known kit fox deaths.

Kit foxes are frequently observed near oil field facilities and commonly use developed areas. They do not seem to be particularly sensitive to human disturbance.

San Joaquin Antelope Squirrel. San Joaquin antelope squirrel have the potential to occur in the McKittrick, Cedar Canyon, Shale Hills – Packwood, Franciscan, and Bluestone Ridge – Orchard Peak Units. Impacts to the San Joaquin antelope squirrel would be similar to those described for the giant kangaroo rat. Antelope squirrels are, however, more widely distributed and are more likely to occur on or near a project site than giant kangaroo rats. Pre-construction surveys and implementation of mitigation measures that are part of the Oil and Gas Programmatic Biological Opinion will reduce the potential for many of these impacts. To comply with the California Endangered Species Act, BLM has developed "take avoidance" measures that will be incorporated into the Oil and Gas Programmatic Biological Opinion. Compliance with these take avoidance measures will significantly minimize impacts to antelope squirrel.

BLM Sensitive Animal Species

Burrowing Owl. The burrowing owl has the potential to occur in all units except the Mountain Creek Unit. Potential impacts to burrowing owls include loss of burrows, entrapment in burrows, and collision with vehicles. Burrowing owl burrows would be treated like potential kit fox dens. Such dens would be monitored for use before destruction or plugging, allowing detection of burrowing owl use. If owl use if detected and the burrow cannot be avoided, burrow destruction or plugging would occur only after the owl has vacated the site. As a result some burrows sites may be lost, but individual owls should avoid becoming entrapped inside burrows.

LeConte's Thrasher. LeConte's thrashers may occur in the McKittrick Unit. Light and moderate oilfield development that maintains saltbush between wells and facilities, and tall saltbushes along drainages provides suitable habitat for LeConte's thrasher. The Oil and Gas Programmatic also contains measures to retain saltbush stringers and minimize the removal of saltbush. The combination of the development limits and the saltbush conservation measures in the Oil and Gas Programmatic are expected to maintain LeConte's thrasher habitat on this unit.

Short-nosed kangaroo rat. Impacts to short-nosed kangaroo rats would be similar to those described for the giant kangaroo rat. Short-nosed kangaroo rats are also widely distributed, and like the antelope squirrel, are more likely to occur on or near a project site than giant kangaroo rats. Short-nosed kangaroo rats have the potential to occur in the McKittrick Unit.

San Joaquin pocket mouse and Tulare grasshopper mouse. San Joaquin pocket mouse has the potential to occur in the Poso and McKittrick Units. Tulare grasshopper mouse has the potential to occur in the McKittrick and Woods Canyon Units. Impacts to these species would be similar to those described for the giant kangaroo rat.

Pallid bat. The pallid bat has the potential to occur in all units. Impacts to the pallid bat are not expected as roost sites (rocky grottos, buildings, mines) are not expected to be impacted by development activities, and very little foraging habitat would be altered.

BLM Sensitive Plant Species. Impacts to sensitive plants would be dependent on the location of the disturbance relative to populations of the species in question. The construction of roads, well pads, and similar development could destroy plants or disrupt continuity between populations. New weedy species could be introduced and weeds would benefit from the additional moisture generated by runoff from roads and pads. To minimize impacts to BLM sensitive species, mitigation measures would consider the

type of impact, the rareness of the species, the population size and distribution, and the species' response to disturbance.

RIPARIAN AND WETLAND HABITAT

Direct impacts to riparian areas should be minimal. BLM regulations prohibit operations in riparian areas unless BLM specifically approves such activity in a Surface Use Plan of Operations. Additional regulations, such as the requirement for obtaining Streambed Alteration Permits would also reduce the likelihood that riparian areas would be directly impacted by oil and gas activities. Any unavoidable impacts, such as road crossings, would likely require mitigation and possibly compensation.

Indirect impacts include possible spills into riparian areas. Pipelines, wells or tanks could leak oil or other fluids into drainages. If water is present in the drainage or mixed in with the oil, oil or other contaminants could travel down the riparian corridor. Water quality, vegetation and wildlife could be adversely affected. Most companies promptly respond to spills upon discovery, but damage can occur until discovery and containment.

Cultural Resources

Approval of this document will have no adverse effect upon cultural resources (per compliance with Section 106 of the National Historic Preservation Act). This proposal and analysis deal only with the action of leasing, and do not consider ground disturbing activities. Any subsequent realty or oil and gas projects or development will be subject to a separate NEPA document and compliance with Section 106 of the National Historic Preservation Act. Native American consultation was regarding the properties proposed for leasing in this document, and no traditional cultural properties or heritage related issues were identified. The potential exists for the Native American community to identify heritage related issues in the future as specific actions are proposed.

As oil and gas development actions or associated realty actions are proposed, the areas of potential effect (APE) will be defined and assessments of the impacts upon cultural resources will be undertaken. NEPA and Sec. 106 compliance will be completed on all undertakings. In the event that cultural resources are identified within a project area, an evaluation of significance will occur and steps will be taken to mitigate impacts to that resource. Mitigation most frequently involves site avoidance, but may rarely include data recovery or compensation. It should be noted that BLM has discretional control over mitigation stipulations and/ or avoidance measures imposed on a project. Although a lessee has a right to develop a lease, BLM may require development activities to be moved up to 200 meters in any direction. This should allow nearly all sites to be avoided. Sites that cannot be avoided will be evaluated for listing on the National Register and mitigation measures will be instituted if the site is found eligible. Should development uncover subsurface sites, the lessee is required to halt all work until the site can be evaluated and proper mitigation and avoidance measures identified.

Livestock Grazing

There are no substantial direct or indirect impacts anticipated to livestock grazing operations or opportunities from the proposed action because such grazing use could occur concurrently. Should development activities on the surface lands leased under this action be proposed, subsequent site-specific NEPA documentation will address any impacts and notify affected federal grazing lessees.

Lands

Leasing BLM lands for oil/gas exploration and production does not typically impact land uses in this area, because the chances of a successful new find are so slim. However, leasing can sometimes cause conflicts with other surface uses that may be taking place on the lands. This is especially possible if the leased lands are split estate, where the surface estate is privately owned and the mineral estate is under the jurisdiction of BLM. Surface owners are often not aware of the Federal ownership of the mineral estate, or are not aware of the implications of the Federal ownership. Along with the ownership of the minerals the Federal government retains the right to use any part of the surface for exploration or development. These "surface entry rights" can cause distress for private surface owners who do not wish to see new roads and well pads on their land. Adjacent private lands can also be impacted due to leasing, in that new road access to the leased areas is sometimes necessary. Although the responsibility for obtaining access to leased areas is the lessee's and not BLM's, leasing can sometimes cause an indirect impact to adjacent lands due to the need for road access.

Oil and Gas and other mineral exploration and development

This alternative will have a beneficial effect on mineral exploration and development, since the land will be offered for competitive auction. The practical utilization of the lands will have a positive local effect in the generation of long term jobs and revenues to the State and county. The royalties and rentals from competitive auction are also a dependable source of long term income for the Federal government. The impact from this particular auction may be small, due to the relatively small acreage offered. However, the positive action of the auction would provide the industry with increased opportunity for exploration, potentially resulting in increased stability and profitability of domestic companies.

In most instances, application of the **LSU – Protected Species** and **LSU – Sensitive Species** stipulations would not prevent surface occupancy for the entire lease. That is, an alternative site or other mitigation or compensation measure would probably be available that would still allow the lessee to drill and develop the lease.

Cumulative Impacts

In the Caliente Resource Management Plan and EIS, published December 1996, BLM analyzed the overall effects of oil and gas activities in the area. The analyses and conclusions contained in those documents are still valid, and current cumulative impacts are still significantly under the level of cumulative impacts that were projected/analyzed in those documents. There have not been and are not expected to be any additional impacts in the parcels covered in this EA that would change those conclusions. In addition, it should be noted that there have been many lease sales since 1996, each of which projected various numbers of wells, both exploratory and development, as well as other types of activities that would cause surface disturbance. Out of 498 leases that have been issued since 1996, only 7 leases have seen any drilling at all. Exact amounts of disturbance are not available. Nearly all the projected disturbance on those leases never occurred.

Cumulative impacts to Minerals

For a more complete discussion of the types of activities associated with exploration, drilling, and production, in addition to the environmental consequences to Minerals and the cumulative impacts on Minerals see the Caliente RMP/EIS, to which this document is tiered. These discussions include Reasonable Foreseeable Development scenarios (RFDs) and impacts, both general and cumulative. Many of these activities are also described in Appendix C.

Cumulative Impacts to Biological Resources

The southern San Joaquin Valley has experienced an increasing human population growth (22% in Bakersfield between 1990 and 2000) and ongoing land use changes across the landscape. There has been large scale conversion of agricultural lands to urban/industrial expansion in the metropolitan Bakersfield, Wasco, Delano, Arvin, and Shafter communities. In the past 10 years, oilfield exploration and development has increased in the CDOGGR oilfield boundaries. There has been extensive new development initiated in the shallow diatomite oil-bearing formations. Several cogeneration and power plants have been constructed in the foothill regions of the Sierra and inner Coast ranges. There has also been more rural housing development in the foothills north and northeast of Bakersfield.

It has been estimated that the leasing of the 19,620 acres for oil and gas resources may result in an estimated surface disturbance of up to 82 acres. Since it is highly unlikely that all the development would occur in only one lease parcel, the impacts of the 82 acres will be estimated to occur in units of five to ten acres per project, with several projects perhaps occurring simultaneously, but spread among the parcels by considerable distances.

The cumulative effects of the leasing and subsequent development would be additive, but insignificant, to the land uses that may occur in the foreseeable future. Foreseeable land uses that the BLM anticipates in or near the parcel areas is ongoing livestock grazing, dispersed recreation activities where there is public access and ongoing oil and gas activities within the existing oil fields. The livestock grazing would continue at current levels and would be authorized in a manner to meet the standards for rangeland health. Such grazing practices should maintain ecological health of the BLM natural lands where grazing is authorized. Livestock grazing on the private grazing lands within the project is also expected to continue at current practices. The BLM and private grazing is considered to be generally compatible with maintaining the landscape for biological resources and habitat for special status animals in the southern San Joaquin Valley.

The southern San Joaquin Valley is experiencing continued demand for dispersed recreation in the form of off highway vehicle (OHV) use on public and private lands, including those in oil fields. Such impacts may occur in the McKittrick, Poso and Round Mountain areas. To date, most OHV use has been on existing roads with occasional cross country travel that creates new habitat disturbance. The remaining parcels in this lease auction do not have ready public access that would make them susceptible to OHV use. The OHV use is additive surface disturbance in the oil fields and would be considered in calculating overall habitat disturbance objectives described below. Additional mitigation and restoration would be conducted in these parcels in order to maintain habitat objectives in preserve and corridor areas.

The parcels that are within or adjacent to the oilfield-dominated landscape include the Round Mountain, Poso, McKittirck, and Shale Hills parcels (2280 acres). While additional surface disturbance would result in further habitat loss if the new disturbance is located in an undisturbed area, the small size of impact would not compromise the integrity of red zone preserves, green zone linkages, or special status populations due to implementation of the programmatic biological opinion. The on site impacts would be avoided through survey, take avoidance and mitigation measures, the total habitat disturbance would be off-set with habitat compensation, and the landscape-level function of the preserves and linkages would be maintained by the limits on red zone (10%) and green zone (25%) habitat disturbance. These disturbances from oil and gas activities, livestock grazing and OHV use would be below a cumulative effects level that would impair conservation or recovery of the San Joaquin Valley listed species.

The remaining parcels are located in the Sierra Nevada and inner Coast Range foothills apart from other oilfield activities. These landscapes are largely intact with no known changes in land uses in the foreseeable future. The habitat disturbance that may occur if these leases are developed would create localized impacts, but would be cumulatively insignificant at the landscape scale since there are no foreseeable additive impacts in these habitats.

No Action Alternative

Should the No Action alternative be selected, these lands would not be leased for oil and gas at the present time. They would remain available for competitive leasing in the future, should circumstances change to make that option worth re-considering. If these parcels are not leased, then for the foreseeable future resources and uses, as well as their current rates of change, would remain as described in the Affected Environment. Cumulative impacts of management activities on public lands would remain at insignificant levels and would not be discernable when combined with activities on surroundind private lands.

Air, Soil, and Water - The No Action Alternative would not affect air, soil, and water since these leases would not be offered.

Biological Resources - No impacts would occur.

Cultural Resources – No impacts would occur.

Livestock Grazing– No impacts would occur.

Lands – No impacts would occur.

Oil and Gas – The no action alternative would not comply with the Energy Policy Act of 2005 and the Mineral Leasing Act of 1920 and several existing regulations and policies to manage lands for multiple uses and to make all suitable lands available for oil and gas leasing unless they are withdrawn from leasing under the Mineral Leasing Act. Failure to make these lands available for leasing and potential subsequent development would also result in the loss of potential additional reserves of oil and/or gas. The amount of lost reserves would be difficult to predict at this time without additional data.

Recreation - The no action alternative would have no effect on the limited recreation opportunities.

Socio-Economic - No impacts would occur.

Visual Resources- No impacts would occur.

VII. Mitigation

Appropriate mitigation measures are incorporated into the proposed action and no additional mitigation should be necessary.

VIII. Consultation and Coordination

Native American Contacts

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Mr. Neil Peyron, Chairperson
Tule River Reservation

Mr. Clarence Atwell, Chairperson
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Mr. Robert Duckworth, Salinan Representative

Salinan Tribe
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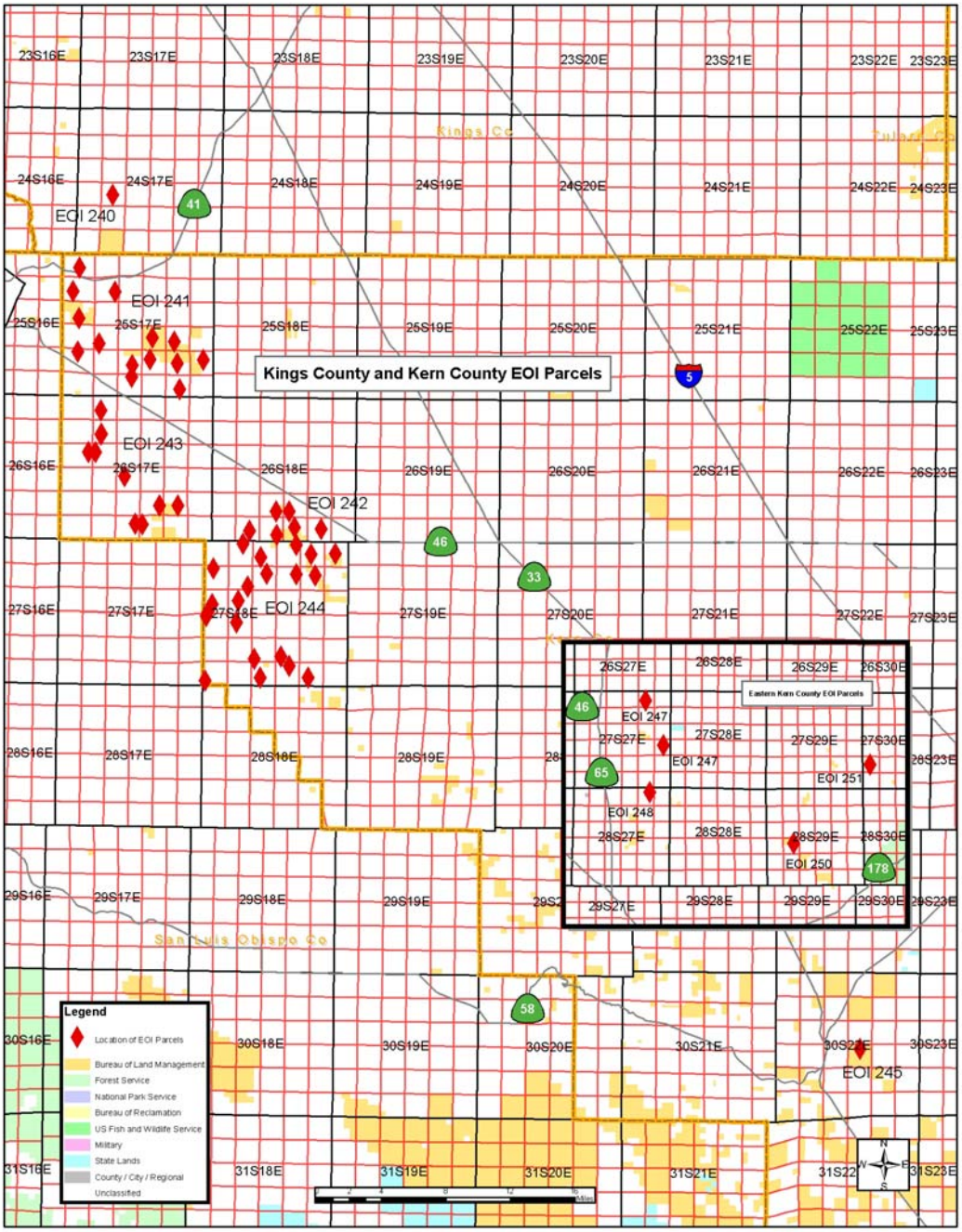
Appendix A
Description of Sale Parcels

Following is a map showing the general location of the parcels analyzed in this EA. A more detailed map can be found at http://www.blm.gov/ca/st/en/fo/bakersfield.html

Map 1 – Parcel Locations – September 12, 2007 Oil & Gas Competitive Lease Auction



The following public domain lands are subject to filings in the manner specified in the applicable portions of the regulations at 43 CFR, Subpart 3120. These parcel numbers will be different from those on the actual Lease Sale Notice, and officially parcelized for the day of the auction.

EOI #240

T. 24 S., R 17 E., MD Mer.,
Sec. 20, E2NE, W2W2, SESW, SE;
Kings County 440.00 acres
Split Estate Lands
Bakersfield FO
Subject to Special Stipulations

EOI #241

T. 25 S., R 17 E., MD Mer.,
Sec. 6, Lots 12-15, N2 Lot 11;
Sec. 7, Lot 8, N2 of Lot 9;
Sec. 8, SENE, SESW, E2SE;
Sec. 18, Lots 1-5, 9, 10, E2NE, SE;
Sec. 20, NE, S2NW, S2;
Sec. 22, All;
Sec. 23, NESW, S2S2;
Sec. 25, S2NE, NW, S2;
Sec. 26, All;
Sec. 27, NE, NENW, S2NW, NWSW, SE;
Sec. 28, N2, NESW, S2SW, N2SE, SWSE;
Sec. 30, Lot 9, NE;
Sec. 33, NWNE;
Sec. 35, Lot 1, N2SE;
Kern County 5,172.08 acres
Split Estate Lands; except;
Sec. 25, W2NW, SW;
Sec. 26, N2;
Sec. 27, NE, E2NW, SWNW, NWSW;
Sec. 28, N2NE, NENW;
Sec. 30, Lot 9 of NE;
Bakersfield FO
Subject to Special Stipulations

EOI #243

T. 26 S., R 17 E., MD Mer.,
Sec. 5, E2SW;
Sec. 8, N2SW;
Sec. 17, SWNW;
Sec. 18, N2NE, SENE;
Sec. 21, SENW;
Sec. 26, SW, W2SE;
Sec. 27, E2SE;
Sec. 33, SENE;

Sec. 34, N2NE, SWNW;
Kern County 840.00 acres
Split Estate Lands except;
Sec. 21, SENW;
Sec. 26, SW, W2SE;
Sec. 27, E2SE;
Sec. 33, SENE;
Sec. 34, N2NE, SWNW;
Bakersfield FO
Subject to Special Stipulations

EOI #242

T. 26 S., R 18 E., MD Mer.,
Sec. 27, W2, SE;
Sec. 28, SE;
Sec. 32, Lot 2, NWSE;
Sec. 33, E2;
Sec. 34, All;
Sec. 35, All;
Kern County 2,349.76 acres
Split Estate Lands except;
Sec. 28, NESE;
Bakersfield FO
Subject to Special Stipulations

EOI #244

T. 27 S., R 18 E., MD Mer.,
Sec. 1, All;
Sec. 2, All;
Sec. 3, Lot 1 and 4, NESW, S2SE;
Sec. 4, NESW;
Sec. 5, Lot 2;
Sec. 7, NENW, S2SE;
Sec. 8, SESE;
Sec. 9, SWNE, S2SW, E2SE;
Sec. 10, N2NE, SENE, NENW, NESE;
Sec. 11, All;
Sec. 17, All;
Sec. 18, NE, NESW, NESE;
Sec. 19, Lot 1;
Sec. 20, N2NE, SWNE, N2NW, SENW;
Sec. 27, SENE, S2NW, S2;
Sec. 28, NE, SENW, SWSW;
Sec. 31, Lot 4;
Sec. 33, NWNE, SENE, S2NW, NESW, NESE;
Sec. 34, N2NE, SENE, SWNW, SESW, SWSE;
Sec. 35, E2, E2W2;
Kern County 5,700.40 acres
Split Estate Lands except;

Sec. 1, W2SW, NESE, S2SE;
Sec. 2, SESW;
Sec. 11, E2SE;
Sec. 28, SWSW;
Sec. 33, NWNE;
Bakersfield FO
Subject to Special Stipulations

EOI #245

T. 30 S., R 22 E., MD Mer.,
Sec. 22, N2, N2SW;
Kern County 400.00 acres
Public Lands
Bakersfield FO
Subject to Special Stipulations

EOI#247

T. 27 S., R 27 E., MD Mer.,
Sec. 2, Lot 2 of NE, Lot 2 of NW,
E2 Lot 1 NE, W2 lot 1 NW,
NWSW, S2SW, NESE, S2SE;
Sec. 24, N2NE, SWNE, E2NW, NESW,
S2SW, N2SE, SWSE;
Kern County 924.47 acres
Split Estate Lands
Bakersfield FO
Subject to Special Stipulations

EOI #248

T. 28 S., R 27 E., MD Mer.,
Sec. 2, Lots 1 & 2 of NE;
Kern County 201.01acres
Split Estate Lands
Bakersfield FO
Subject to Special Stipulations

EOI #250

T. 28 S., R 29 E., MD Mer.,
Sec. 20, NENE, E2W2NE;
Kern County 80.00 acres
Split Estate Lands
Bakersfield FO
Subject to Special Stipulations

EOI #251

T. 27 S., R 30 E., MD Mer.,
Sec. 30, All;
Kern County 657.95 acres
Split Estate Lands except;
Sec. 30, Lot 2 of NW, SENW;
Bakersfield FO
Subject to Special Stipulations

Appendix B
Special Lease Stipulations

Stipulation No. 1 - Limited Surface Use - Protected Species: All or a portion of this lease is within the range of one or more plant or animal species (shown in Biology Tables 4 and 6 following this stipulation) that are either listed as threatened or endangered, or are proposed for such listing by the U.S. Fish and Wildlife Service (USFWS).

The lessee is notified that time frames for processing applications may be delayed beyond established standards to allow for species surveys, and consultation or conferencing with the USFWS. Notice is also given that surface-disturbing activities may be moved or modified, and that some activities may be prohibited during seasonal time periods. Surface-disturbing activities will be prohibited on the lease only where:

a. The proposed action is likely to jeopardize the continued existence of a listed or proposed species, or
b. The proposed action is inconsistent with the recovery needs of a listed species as identified in an approved USFWS Recovery Plan.

Prior to the authorization of any surface-disturbing activities, a preliminary environmental review will be conducted to identify the potential presence of habitat for these species. Authorizations may be delayed until completion of the necessary surveys during the appropriate time period for these species. The lessee should be aware that the timing of the surveys is critical, in that some species can only be surveyed during a brief period each year.

The Bureau of Land Management (BLM) may need to initiate consultation or conference with the USFWS if the site inspection concludes that a listed or proposed species may be affected by the proposed activity. The lessee should be aware that the USFWS has up to 135 days to render their biological opinion, and that there are provisions for an additional 60-day extension. Offsite habitat protection or enhancement for wildlife or vegetation (compensation) may be required by the USFWS when habitat is disturbed. The consultation may also result in some restrictions to the lessee's plan of development, including movement or modification of activities, and seasonal restrictions. Surface-disturbing activities will be prohibited on the lease if the consultation or conference concludes that either of the conditions identified in a or b above exist.

Stipulation No. 2 - Limited Surface Use - Sensitive Species: All or a portion of this lease is within the range of one or more plant or animal species (shown in Biology Tables 4, 5 and 7 following this stipulation) that are either Federal candidates for listing as threatened or endangered (Federal Candidate), or are listed by the State of California as threatened or endangered (State Listed), or are designated by the Bureau of Land Management (BLM) as Sensitive (Bureau Sensitive).

The lessee is notified that time frames for processing applications may be delayed beyond established standards to allow for species surveys and coordination with the USFWS and California Department of Fish and Game. Notice is also given that surface-disturbing activities may be relocated beyond the standard 200 meters but not more than 1/4 mile and that surface disturbing activities may be prohibited during seasonal time periods.

Prior to the authorization of any surface-disturbing activities, a preliminary environmental review will be conducted to identify the potential presence of habitat for these species. Authorizations

may be delayed until completion of the necessary surveys during the appropriate time period for these species. The lessee should be aware that the timing of the surveys is critical, in that some species can only be surveyed during a brief period each year. The BLM may need to coordinate with the USFWS or the California Department of Fish and Game if the site inspection concludes that a Federal Candidate, State Listed, or Bureau Sensitive species may be affected by the proposed activity. Coordination may delay application processing beyond established time frames.

To prevent or reduce disturbance to Federal Candidate, State Listed, or Bureau Sensitive species, surface operations may be moved up to 1/4 mile and surface-disturbing activities may be prohibited during seasonal time periods.

Table Biology 1. Federal and State Listed, and BLM Sensitive animal species with potential to occur on the lease parcels.

Species	Valley elderberry longhorn beetle	California red-legged frog	Blunt-nosed leopard lizard	California condor	Giant kangaroo rat	San Joaquin kit fox	San Joaquin antelope squirrel	Burrowing owl	Le Conte's thrasher	Short-nosed kangaroo rat	San Joaquin pocket mouse	Tulare grasshopper mouse	Pallid Bat
Status	**FT**	**FT**	**FE, SE**	**FE, SE**	**FE, SE**	**FE, ST**	**ST**	**BLM Sensitive**	**BLM Sensitive**	**BLM Sensitive**	**BLM Sensitive**	**BLM Sensitive**	**BLM Sensitive**
Mountain Creek	Potential			Historic				Potential					Potential
Round Mountain			Potential	Historic		Potential		Potential					Potential
Poso			Potential	Historic		Potential		Potential			Potential		Potential
McKittrick			Potential	Historic	Potential	Potential	Potential	Potential	Potential	Potential	Potential	Potential	Potential
Cedar Canyon			Potential	Historic	Potential	Potential	Potential	Potential					Potential
Shale Hills - Packwood			Known	Historic	Potential	Potential	Potential	Potential					Potential
Franciscan			Known	Historic	Potential	Potential	Potential	Potential					Potential
Woods Canyon		Potential		Historic		Potential		Potential				Potential	Potential
Bluestone Ridge - Orchard Peak		Potential		Historic		Potential	Potential	Potential					Potential
Kings County				Historic		Potential		Potential					Potential

Status

FE – Federally Endangered
FT – Federally Threatened
SE – State Endangered
ST – State Threatened
BLM Sensitive – BLM California Sensitive Species

Occurrence

Known – CNDDB or other record on parcel
Potential – parcel is within species range or known occurrence nearby
Historic – within historic range of species, historic occurrence nearby

Table Biology 2. Federally Listed and BLM Sensitive plant species with potential to occur on the lease parcels.

Biological Unit:	**MC**	**RM**	**PO**	**MK**	**CC**	**SH**	**FR**	**WC**	**BR**	**KC**
FEDERALLY ENDANGERED										
Bakersfield cactus (*Opuntia basilaris* var. *treleasei*)		X	X							
California jewelflower (*Caulanthus californicus*)				X	X	X	X	X	X	X
Kern mallow (*Eremalche parryi* ssp. *kernensis*)				X						
San Joaquin woolythreads (*Monolopia congdonii*)				X	X	X	X	X	X	X
FEDERALLY THREATENED										
San Joaquin adobe sunburst (*Pseudobahia peirsonii*)	X									
FEDERALLY DELISTED										
Hoover's woolly-star (*Eriastrum hooveri*)				X	X	X	X	X	X	X
BLM SENSITIVE										
calico monkeyflower (*Mimulus pictus*)	X									
California screw moss (*Tortula californica*)		X								
Hall's tarplant (*Deiandra halliana*)					X	X	X	X	X	X
heartscale (*Atriplex cordulata*)				X						
Kern County larkspur (*Delphinium purpusii*)	X									
Lemmon's jewelflower (*Caulanthus coulteri* var. *lemmonii*)					X	X	X	X	X	X
Lost Hills crownscale (*Atriplex vallicola*)				X						
Mason's neststraw (*Stylocline masonii*)					X	X	X	X	X	X
Munz's tidy tips (*Layia munzii*)					X	X	X	X	X	X
oil neststraw (*Stylocline citroleum*)		X		X						
pale-yellow layia (*Layia heterotricha*)					X	X	X	X	X	X
Panoche peppergrass (*Lepidium jaredii* spp. *album*)					X	X	X	X	X	X
Piute Mountains navaretia (*Navarretia setiloba*)	X									
recurved larkspur (*Delphinium recurvatum*)					X	X	X	X	X	X

Biological Unit:	**MC**	**RM**	**PO**	**MK**	**CC**	**SH**	**FR**	**WC**	**BR**	**KC**
round-leaved filaree (*California macrophylla*)	X				X	X	X	X	X	X
San Benito spineflower (*Chorizanthe biloba* var. *immemoria*)					X	X	X	X	X	X
San Bernardino aster (*Symphyotrichum defoliatum*)					X	X	X	X	X	X
shining navarretia (*Navarretia nigelliformis* ssp. *radicans*)					X	X	X	X	X	X
showy madia (*Madia radiata*)					X	X	X	X	X	X
straight-awned spineflower (*Chorizanthe rectispina*)					X	X	X	X	X	X
striped adobe-lily (*Fritilaria striata*)	X	X								
Tejon poppy (*Eschscholtzia lemonii* spp. *kernensis*)				X						
Temblor buckwheat (*Eriogonum temblorense*)					X	X	X	X	X	X

Key to Biological Units: MC = Mountain Creek, RM = Round Mountain, PO = Poso, MK = McKittrick, CC = Cedar Canyon, SH = Shale Hills – Packwood, FR = Franciscan, WC = Woods Canyon, BR = Bluestone Ridge, KC = Kings County.

Table Biology 3. Riparian habitat estimated to occur on the lease parcels.

Unit	Location	Source	Amount of Riparian Habitat	Description
Kings County	Catskin Canyon	Tent Hills USGS topographic map	½ mile +	Limited riparian vegetation, sections appear dry. 1-2 large trees, possible cottonwood or willow along drainage.
Bluestone Ridge – Orchard Peak	Cottonwood Canyon	Tent Hills USGS topographic map	1.25 miles	Scattered large trees, possibly cottonwoods and willows.
	Section 8	Tent Hills USGS topographic map	2 springs in unnamed tributary to Cottonwood Creek supporting ½ mile riparian habitat	Spring fed riparian vegetation along channel. Possibly herbaceous and woody riparian species with scattered large trees.
	Section 20	Orchard Peak USGS topographic map	1 spring in unnamed drainage supporting ¼ riparian habitat	Dense woody vegetation including large trees.
	Section 25	Orchard Peak USGS topographic map	1 spring and ½ mile of unnamed tributary	Discontinuous stretch of herbaceous and probably woody vegetation. A few large trees may be present.
	Section 24	Sawtooth Ridge USGS topographic map	Aido Spring and possible stock pond	Spring appears to support herbaceous vegetation and possibly some small trees or large shrubs.
		Aerial photograph for pond		Possible pond (human made) upslope of spring.
Woods Canyon	Section 18	Aerial photograph	4 springs, 3 feed into Hodges Canyon and supports ½ mile of riparian vegetation	Springs appear to support localized areas of herbaceous and possibly woody vegetation.
Shale Hills - Packwood Mountain Creek	Section 32	Packwood Creek USGS topographic map	Stock pond, appears dry in aerial photograph	Dry stock pond, no apparent riparian vegetation.
	Section 30	Pine Mountain USGS topographic map	1.25 miles of Poso Creek	Continuous woody vegetation, including cottonwoods, willows and sycamores.

Biology Table 4
Federally Listed, Proposed and Candidate Species
Designated and Proposed Critical Habitat
Bakersfield Field Office

COMMON NAME	SCIENTIFIC NAME	STATUS[1] SP	STATUS[1] CH	OCCURRENCE[2,3] C	V	S	CPNM	FM
Snails								
BANDED DUNE SNAIL	HELMINTHOGLYPA WALKERIANA	FE	CH	K	N3	N3		
Fairy Shrimp								
LONGHORN FAIRY SHRIMP	BRANCHINECTA LONGIANTENNA	FE	CH	N1	L1	N3	K	
VERNAL POOL FAIRY SHRIMP	BRANCHINECTA LYNCHI	FT	CH	N1	L1	N3	H	x
VERNAL POOL TADPOLE SHRIMP	LEPIDURUS PACKARDI	FT	CH	N3	N3	N3		x
Insects								
VALLEY ELDERBERRY LONGHORN BEETLE	DESMOCERUS DIMORPHUS	FT	CH	N	L	L		x
KERN PRIMROSE SPHINX MOTH	EUPROSERPINUS EURERPE	FT		N	K?	L	K	
Fish								
LITTLE KERN GOLDEN TROUT	ONCORHYNCHUS AQUABONITA WHITEI	FT	CH	N3	N3	N1		
CA GOLDEN TROUT	ONCORHYNCHUS MYKISS AGUABONITA	90-day		N3	N3	N2?		
LAHONTAN CUTTHROAT TROUT	ONCORHYNCHUS CLARKI HENSHAWI	FT		N3	N3	N3		N1
PAIUTE CUTTHROAT TROUT	ONCORHYNCHUS CLARKI SELENIRIS	FT		N3	N3	N3		N1
UNARMORED THREESPINE STICKLEBACK	GASTEROSTEUS ACULEATUS WILLIAMSONI	FE	PCH	N1	N3	N3		
TIDEWATER GOBY	EUCYCLOGOBIUS NEWBERRYI	FE	CH	N1	N3	N3		
STEELHEAD (southern CA coast)*	ONCORHYNCHUS MYKISS	FE	CH	N1	N3	N3		
STEELHEAD (south central CA coast)*	ONCORHYNCHUS MYKISS	FT	CH	N1	N3	N3		
Amphibians								
CA TIGER SALAMANDER (SB DPS)	AMBYSTOMA CALIFORNIENSE	FT	CH	H	N3	N3		
CA TIGER SALAMANDER (Cen CA DPS)	AMBYSTOMA CALIFORNIENSE	FT	CH	H	M1	H		H
ARROYO SOUTHWESTERN TOAD	BUFO MICROSCAPHUS CALIFORNICUS	FE	CH	LI	LI	N3		
CALIFORNIA RED-LEGGED FROG	RANA AURORA DRAYTONI	FT	PCH	M1	L1	L1		
MTN YELLOW-LEGGED FROG (So. CA DPS)	RANA MUSCOSA	FE		N3	N3	N3		
MTN YELLOW-LEGGED FROG (Sierran DPS)	RANA MUSCOSA	Candidate		N3	N3	N2		N1
Reptiles								
BLUNT-NOSED LEOPARD LIZARD	GAMBELIA SILA	FT		M1	K	K	K	x
ISLAND NIGHT LIZARD	XANTUSIA RIVERSIANA	FT		N1	N3	N3		
GIANT GARTER SNAKE	THAMNOPHIS GIGAS	FT		N3	L1	N3		x
Birds								
CALIFORNIA BROWN PELICAN	PELECANUS OCCIDENTALIS CALIFORNICUS	FE		K	N1	N1		
ALEUTIAN CANADA GOOSE	BRANTA CANADENSIS LEUCOPAREIA	FT		N1	L1	N1		
CALIFORNIA CONDOR	GYMNOGYPS CALIFORNIANUS	FE	CH	K	K	K		
BALD EAGLE	HALIAEETUS LEUCOCEPHALUS	FT		M2	H	M2	K	x
AMERICAN PEREGRINE FALCON	FALCO PEREGRINUS ANATUM	R		K	H	M2		
LIGHT-FOOTED CLAPPER RAIL	RALLUS LONGIROSTRIS LEVIPES	FE		N1	N3	N3		
CALIFORNIA CLAPPER RAIL	RALLUS LONGIROSTRIS OBSOLETUS	FE		N1	N3	N3		
WESTERN SNOWY PLOVER (COAST)	CHARADRIUS ALEXANDRINUS NIVOSUS	FT	CH	H	N3	N3		
CALIFORNIA LEAST TERN	STERNA ANTILLARUM BROWNI	FE		H	N3	N3		
MARBLED MURRELET	BRACHYRAMPHUS MARMORATUS	FT	CH	H	N3	N3		
WESTERN YELLOW-BILLED CUCKOO	COCCYZUZ AMERICANUS OCCIDENTALIS	Candidate		N3	L1	L1		
SOUTHWESTERN WILLOW FLYCATCHER	EMPIDONAX TRAILLII EXTERMIS	FE	PCH	N1	N1	K		
LEAST BELL'S VIREO	VIREO BELLII PUSILLUS	FE	CH	N2	N2	N2		
Mammals								
BUENA VISTA LAKE SHREW	SOREX ORNATUS RELICTUS	FE		N3	K	N3		
PACIFIC LITTLE POCKET MOUSE	PEROGNATHUS LONGIMEMBRIS PACIFICUS	FE		N3	N3	N3		
MORRO BAY KANGAROO RAT	DIPODOMYS HEERMANNI MORROENSIS	FE	CH	L1	N3	N3		
GIANT KANGAROO RAT	DIPODOMYS INGENS	FE		L1	K	N3	K	x
TIPTON KANGAROO RAT	DIPODOMYS NITRATOIDES NITRTOIDES	FE		N3	K	N3		
FRESNO KANGAROO RAT	DIPODOMYS NITRATOIDES EXILIS	FE	CH	N3	L1	N3		x
SAN JOAQUIN VALLEY WOODRAT	NEOTOMA FUSCIPES RIPARIA	FC		N3	N3	N3		
SAN JOAQUIN KIT FOX	VULPES MACROTIS MUTICA	FE		K	K	K	K	x
FISHER (West Coast DPS)	MARTES PENNANTI	Candidate		N3	N3	K		?
CA BIGHORN SHEEP (Sierra Nevada pop.)	OVIS CANADENSIS CALIFORNIANA	FE		N3	N3	N2		N1
GUADALUPE FUR SEAL*	ARCTOCEPHALUS TOWNSENDI	FT		L1	N3	N3		
NORTHERN SEA LION (eastern pop.)*	EUMETOPIAS JUBATUS	FT	CH	K	N3	N3		
SOUTHERN SEA OTTER	ENHYDRA LUTRIS NEREIS	FT		H	N3	N3		
GRAY WHALE*	ESCHRICHTIUS ROBUSTUS	REC		K	N	N		
BLUE WHALE*	BALAENOPTERA MUSCULUS	FE		L	N	N		
HUMPBACK WHALE*	MEGAPTERA NOVAEANGLIAE	FE		H	N	N		

[1] **STATUS**

Species (SP)

FE	endangered
FT	threatened
FPE	proposed endangered
FPT	proposed threatened
FC	candidate
REC	recovered
90-day	90-day'may be warranted' finding
not warr	not warranted

Critical Habitat (**CH**)

CH	designated critical habitat
PCH	proposed critical habitat

[2] **OCCURRENCE** on public land

K	known
H	highly likely
M1	likely but limited habitat
M2	likely but localized species
L	unlikely
L1	unlikely - local species and limited habitat
L2	unlikely - very localized species
N	very unlikely
N1	very unlikely - no suitable habitat
N2	very unlikely - limited suitable habitat exists but known not to be occupied
N3	very unlikely - outside of normal range
U	unknown

[3] Column headings referring to **Management Areas**

C	Coast
V	Valley
S	South Sierra
CPNA	Carrizo
FM	eastern Fresno and Madera counties.

Biology Table 5.
California State Listed Only Animal Species
Species that are both federally listed and state listed are NOT repeated on this list

Techachapi slender salamander
Batrachoseps stebbinsi

Kern Canyon slender salamander
Batrachoseps simatus

Southern rubber boa
Charina bottae umbratica53

Swainson's hawk
Buteo swainsoni

American peregrine falcon
Falco peregrinus anatum

Greater sandhill crane
Grus Canadensis tabida

Western yellow-billed cuckoo
Coccyzus americanus occidentalis

Willow flycatcher
Empidonax traillii

Belding's savannah sparrow
Passerculus sandwichensis beldingi

San Joaquin antelope squirrel
Ammospermophilus nelsoni

Biology Table 6.
Federally Listed Plant Species in the Bakersfield Field Office

Family	genus	species	ssp/ var	sub taxon name	Common Name	Federal status
Apiaceae	Lomatium	shevockii			Owens Peak lomatium	threatened
Asteraceae	Calycadenia	hooveri			Hoover's calycadenia	endangered
Asteraceae	Cirsium	crassicaule			slough thistle	endangered
Asteraceae	Cirsium	fontinale	var.	obispoense	Chorro creek bog thistle	endangered
Asteraceae	Cirsium	loncholepis			La Graciosa thistle	endangered
Asteraceae	Cirsium	rhothophilum			surf thistle	endangered
Asteraceae	Erigeron	multiceps			Kern River daisy	endangered
Asteraceae	Monolopia	congdonii			San Joaquin woollythreads	endangered
Asteraceae	Pseudobahia	peirsonii			Tulare pseudobahia	threatened
Brassicaceae	Caulanthus	californicus			California jewelflower	endangered
Cactaceae	Opuntia	basilaris	var.	treleasei	Bakersfield cactus	endangered
Ericaceae	Arctostaphylos	morroensis			Morro manzanita	threatened
Fabaceae	Lupinus	nipomensis			Nipomo mesa lupine	endangered
Hydrophyllaceae	Eriodictyon	altissimum			Indian Knob mountainbalm	threatened
Hydrophyllaceae	Eriodictyon	capitatum			Lompoc yerba santa	endangered
Liliaceae	Allium	shevockii			Spanish Needle onion	threatened
Liliaceae	Brodiaea	insignis			Kaweah brodiaea	endangered
Liliaceae	Fritillaria	striata			striped adobe-lily	endangered
Malvaceae	Eremalche	parryi	ssp.	kernensis	Kern mallow	endangered
Malvaceae	Sidalcea	hickmanii	ssp.	parishii	Parish's checkerbloom	candidate
Onagraceae	Clarkia	springvillensis			Springville clarkia	threatened
Polemoniaceae	Eriastrum	Hooveri			Hoover's eriastrum	delisted
Portulacaceae	Calyptridium	pulchellum			Mariposa pussypaws	threatened
Scrophulariaceae	Castilleja	campestris	var.	succulenta	succulent owl's-clover	threatened
Scrophulariaceae	Castilleja	mollis			soft-leaved indian paintbrush	endangered
Scrophulariaceae	Mimulus	gracilipes			slender-stalked monkeyflower	threatened

Biology Table 7.
BLM Sensitive Plant Species in the Bakersfield Field Office

Family	genus	species	ssp/ var	sub taxon name	Common Name
Alismataceae	Sagittaria	sanfordii			Sanford's arrowhead
Apiaceae	Cymopterus	deserticola			desert cymopterus
Apiaceae	Eryngium	aristulatum	var.	hooveri	Hoover's button-celery
Apiaceae	Eryngium	spinosepalum			spiny-sepaled button-celery
Apiaceae	Lomatium	shevockii			Owens Peak lomatium
Apiaceae	Sanicula	maritima			Adobe Sanicle
Asteraceae	Baccharis	plummerae	ssp.	glabrata	San Simeon baccharis
Asteraceae	Calycadenia	hooveri			Hoover's calycadenia
Asteraceae	Centromadia	parryi	ssp.	congdonii	Congdon's tarplant
Asteraceae	Centromadia	parryi	ssp.	australis	southern tarplant
Asteraceae	Cirsium	crassicaule			slough thistle
Asteraceae	Cirsium	occidentale	var.	compactum	compact cobwebby thistle
Asteraceae	Cirsium	rhothophilum			surf thistle
Asteraceae	Deinandra	arida			Red Rock tarplant
Asteraceae	Deinandra	halliana			Hall's tarplant
Asteraceae	Deinandra	increscens	ssp.	villosa	Gaviota tarplant
Asteraceae	Deinandra	minthornii			Santa Susana tarplant
Asteraceae	Ericameria	gilmanii			Gilman's goldenbush
Asteraceae	Erigeron	aequifolius			Hall's daisy
Asteraceae	Erigeron	blochmaniae			Blochman's leafy daisy
Asteraceae	Erigeron	inornatus	var.	keilii	Keil's daisy
Asteraceae	Erigeron	multiceps			Kern River daisy
Asteraceae	Eriophyllum	lanatum	var.	hallii	Fort Tejon woolly sunflower
Asteraceae	Grindelia	hirsutula	var.	maritima	San Francisco gumplant
Asteraceae	Heterotheca	shevockii			Shevock's golden-aster
Asteraceae	Lasthenia	conjugens			Contra Costa goldfields
Asteraceae	Lasthenia	glabrata	ssp.	coulteri	coulter's goldfields
Asteraceae	Layia	carnosa			beach layia
Asteraceae	Layia	heterotricha			pale-yellow layia
Asteraceae	Layia	jonesii			Jones' layia
Asteraceae	Layia	leucopappa			Comanche Point layia
Asteraceae	Layia	munzii			Munz' tidy tips
Asteraceae	Madia	radiata			Showy madia
Asteraceae	Malacothrix	saxatilis	var.	arachnoidea	Carmel Valley malacothrix
Asteraceae	Pentachaeta	lyonii			Lyon's pentachaeta
Asteraceae	Pseudobahia	bahiiafolia			Hartwig’s golden sunburst
Asteraceae	Stylocline	citroleum			Oil neststraw
Asteraceae	Stylocline	masonii			Mason neststraw
Boraginaceae	Plagiobothrys	uncinatus			Hooked popcorn-flower

Family	genus	species	ssp/ var	sub taxon name	Common Name
Brassicaceae	Caulanthus	amplexicaulis	var.	barbarae	Santa Barbara Jewelflower
Brassicaceae	Caulanthus	coulteri	var.	lemmonii	Lemmon's jewelflower
Brassicaceae	Dithyrea	maritima			Beach spectaclepod
Brassicaceae	Lepidium	jaredii	ssp.	album	Panchoe pepper-grass
Brassicaceae	Lepidium	jaredii	ssp.	jaredii	Jared's peppergrass
Brassicaceae	Lepidium	virginicum	var.	robinsonii	Robinson's pepper-grass
Brassicaceae	Rorippa	gambelii			Gambel's water cress
Brassicaceae	Streptanthus	cordatus	var.	piutensis	Piute Mtns. Jewel flower
Brassicaceae	Twisselmannia	californica			Kings gold
Campanulaceae	Nemacladus	twisselmannii			Twisselmann's nemacladus
Caryophyllaceae	Arenaria	paludicola			marsh sandwort
Chenopodiaceae	Aphanisma	blitoides			Aphanisma
Chenopodiaceae	Atriplex	cordulata			heartscale
Chenopodiaceae	Atriplex	coulteri			Coulter's saltbrush
Chenopodiaceae	Atriplex	depressa			brittlescale
Chenopodiaceae	Atriplex	erecticaulis			Earlimart orache
Chenopodiaceae	Atriplex	joaquiniana			San Joaquin spearscale
Chenopodiaceae	Atriplex	minuscula			lesser saltscale
Chenopodiaceae	Atriplex	pacifica			South Coast saltscale
Chenopodiaceae	Atriplex	serenana	var.	davidsonii	Davidson's saltscale
Chenopodiaceae	Atriplex	subtilis			subtle orache
Chenopodiaceae	Atriplex	tularensis			Bakersfield smallscale
Chenopodiaceae	Atriplex	vallicola			Lost Hills saltbush
Chenopodiaceae	Suaeda	californica			California seablite
Convolvulaceae	Calystegia	subacaulis	ssp.	episcopalis	Cambria morning-glory
Crassulaceae	Dudleya	abramsii	ssp.	bettinae	San Luis Obispo serpentine dudleya
Crassulaceae	Dudleya	abramsii	ssp.	murina	San Luis Obispo dudleya
Crassulaceae	Dudleya	blochmaniae	ssp.	blochmaniae	Blochman's dudleya
Crassulaceae	Dudleya	cymosa	ssp.	marcescens	marcescent dudleya
Crassulaceae	Dudleya	cymosa	ssp.	costafolia	Pierpoint Springs dudleya
Crassulaceae	Dudleya	parva			Conejo dudleya
Crassulaceae	Dudleya	verityi			Verity's dudleya
Cupressaceae	Cupressus	arizonica	ssp.	nevadensis	Arizona Cypress
Cyperaceae	Carex	obispoensis			San Luis Obispo Sedge
Ericaceae	Arctostaphylos	luciana			Santa Lucia manzanita
Ericaceae	Arctostaphylos	osoensis			Oso manzanita
Ericaceae	Arctostaphylos	pechoensis			Pecho manzanita
Ericaceae	Arctostaphylos	pilosula			Santa Margarita manzanita
Ericaceae	Arctostaphylos	purissima			La Purisima manzanita
Ericaceae	Arctostaphylos	refugioensis			Refugio manzanita
Ericaceae	Arctostaphylos	rudis			Sand mesa manzanita
Ericaceae	Arctostaphylos	tomentosa	ssp.	daciticola	dacite manzanita
Ericaceae	Arctostaphylos	tomentosa	ssp.	eastwoodiana	Eastwood's manzanita

Family	genus	species	ssp/ var	sub taxon name	Common Name
Ericaceae	Arctostaphylos	wellsii			Wells' manzanita
Euphorbiaceae	Chamaesyce	hooveri			Hoover's spurge
Fabaceae	Astragalus	brauntonii			Braunton's milk-vetch
Fabaceae	Astragalus	ertterae			Walker Pass milkvetch
Fabaceae	Astragalus	pycnostachyus	var.	lanosissimus	Ventura marsh milk vetch
Fabaceae	Astragalus	shevockii			Shevock's milk-vetch
Fabaceae	Lupinus	citrinus	var.	citrinus	Orange lupine
Fabaceae	Lupinus	ludovicianus			San Luis Obispo County Lupine
Fabaceae	Lupinus	padre-crowleyi			Father Crowley's lupine
Fabaceae	Trifolium	macilentum	var.	dedeckerae	DeDecker's clover
Fagaceae	Quercus	dumosa			Nuttall's scrub oak
Grossulariaceae	Ribes	tularense			Sequoia gooseberry
Hydrophyllaceae	Phacelia	nashiana			Charlotte's phacelia
Hydrophyllaceae	Phacelia	novenmillensis			Nine-mile canyon phacelia
Iridaceae	Iris	munzii			Munz's iris
Lamiaceae	Monardella	crispa			Crisp monardella
Lamiaceae	Monardella	frutescens			San Luis Obispo monardella
Lamiaceae	Monardella	linoides	ssp.	oblonga	flax-like monardella
Liliaceae	Allium	hickmanii			Hickman's onion
Liliaceae	Allium	howellii	var.	clokeyi	Mt. Pinos onion
Liliaceae	Allium	shevockii			Spanish Needle onion
Liliaceae	Bloomeria	humilis			dwarf goldenstar
Liliaceae	Brodiaea	insignis			Kaweah brodiaea
Liliaceae	Calochortus	clavatus	ssp.	recurvifolius	Arroyo De La Cruz Mariposa Lily
Liliaceae	Calochortus	obispoensis			San Luis mariposa lily
Liliaceae	Calochortus	palmeri	var.	palmeri	Palmer's mariposa lily
Liliaceae	Calochortus	plummerae			Plummer's mariposa lily
Liliaceae	Calochortus	simulans			San Luis Obispo mariposa lily
Liliaceae	Calochortus	striatus			alkali mariposa lily
Liliaceae	Calochortus	weedii	var.	vestus	late-flowered mariposa lily
Liliaceae	Calochortus	westonii			Shirley Meadows star-tulip
Liliaceae	Chlorogalum	pomeridianum	var.	minus	Dwarf soaproot
Liliaceae	Chlorogalum	pomeridianum	var.	reductum	Camatta Canyon amole
Liliaceae	Fritillaria	brandegeei			Greenhorn fritillary
Liliaceae	Fritillaria	ojaiensis			Ojai fritillary
Liliaceae	Fritillaria	striata			striped adobe-lily
Liliaceae	Fritillaria	viridea			San Benito fritillary
Malvaceae	Malacothamnus	davidsonii			Davidson's bush mallow
Malvaceae	Malacothamnus	palmeri	var.	involucratus	Carmel Valley bushmallow
Malvaceae	Sidalcea	hickmanii	ssp.	anomala	Cuesta Pass Checkerbloom
Malvaceae	Sidalcea	keckii			Keck's checkerbloom
Onagraceae	Camissonia	hardhamiae			Hardham's evening primrose
Onagraceae	Camissonia	integrifolia			Kern River evening primrose

Family	genus	species	ssp/ var	sub taxon name	Common Name
Onagraceae	Clarkia	australis			Small southern clarkia
Onagraceae	Clarkia	speciosa	ssp.	immaculata	Pismo clarkia
Onagraceae	Clarkia	tembloriensis	ssp.	calientensis	Caliente clarkia
Onagraceae	Clarkia	xantiana	ssp.	parviflora	Kern Canyon clarkia
Papaveraceae	Eschscholzia	lemmonii	ssp.	kernensis	Tejon Poppy
Papaveraceae	Eschscholzia	rhombipetala			diamond-petaled California poppy
Philadelphaceae	Carpenteria	californica			Tree anemone
Pinaceae	Pinus	radiata			Monteret pine
Poaceae	Agrostis	hooveri			Hoover's bent grass
Poaceae	Orcuttia	inaequalis			San Joaquin Valley orcutt grass
Poaceae	Tuctoria	greenei			Greene's tuctoria
Polemoniaceae	Eriastrum	luteum			Yellow-Flowered eriastrum
Polemoniaceae	Leptosiphon	serrulatus			Madera linanthus
Polemoniaceae	Navarretia	nigelliformis	ssp.	radians	shining navarretia
Polemoniaceae	Navarretia	peninsularis			Baja navarretia
Polemoniaceae	Navarretia	setiloba			Piute Mtns. Navaretia
Polygonaceae	Aristocapsa	insignis			Indian Valley spineflower
Polygonaceae	Chorizanthe	breweri			Brewer's spineflower
Polygonaceae	Chorizanthe	pungens	var.	pungens	Monterey spineflower
Polygonaceae	Chorizanthe	rectispina			Straight-awned spineflower
Polygonaceae	Eriogonum	breedlovei	var.	breedlovei	Breedlove's buckwheat
Polygonaceae	Eriogonum	crocatum			Conejo buckwheat
Polygonaceae	Eriogonum	kennedyi	var.	pinicola	Cache Peak buckwheat
Polygonaceae	Eriogonum	nudum	var.	murinum	Mouse Buckwheat
Polygonaceae	Eriogonum	temblorense			Temblor Buckwheat
Portulacaceae	Lewisia	disepala			Yosemite lewisia
Pottiaceae	Tortula	californica			California tortula moss
Ranunculaceae	Delphinium	inopinum			Unexpected larkspur
Ranunculaceae	Delphinium	parryi	ssp.	blochmaniae	Dune larkspur
Ranunculaceae	Delphinium	purpusii			Kern County larkspur
Ranunculaceae	Delphinium	recurvatum			Valley Larkspur
Ranunculaceae	Delphinium	umbraculorum			Umbrella larkspur
Rhamnaceae	Ceanothus	hearstiorum			Hearst's ceanothus
Rhamnaceae	Ceanothus	maritimus			Maritime ceanothus
Rosaceae	Horkelia	cuneata	ssp.	sericea	Kellogg's horkelia
Rosaceae	Horkelia	tularensis			Kern Plateau horkelia
Rubiaceae	Galium	angustifolium	ssp.	onycense	Onyx peak bedstraw
Rubiaceae	Galium	hardhamiae			Hardham's bedstraw
Scrophulariaceae	Castilleja	densiflora	ssp.	obispoensis	Obispo indian paintbrush
Scrophulariaceae	Cordylanthus	maritimus	ssp.	maritimus	salt marsh bird's-beak
Scrophulariaceae	Cordylanthus	mollis	ssp.	hispidus	hispid bird's beak
Scrophulariaceae	Cordylanthus	rigidus	ssp.	littoralis	Seaside Bird's-beak
Scrophulariaceae	Gratiola	heterosepala			Bogg's lake hedge-hyssop

Family	genus	species	ssp/ var	sub taxon name	Common Name
Scrophulariaceae	Mimulus	gracilipes			slender-stalked monkeyflower
Scrophulariaceae	Mimulus	norrisii			Kaweah monkeyflower
Scrophulariaceae	Mimulus	pictus			Calico monkeyflower
Scrophulariaceae	Mimulus	shevockii			Kelso Creek monkeyflower
Scrophulariaceae	Pedicularis	dudleyi			Dudley's lousewort
Scrophulariaceae	Scrophularia	atrata			Black Flowered figwort

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Appendix C
Oil and Gas Management Guidelines

Oil and Gas Leasing Availability Categories

The Caliente Resource Management Plan describes the various categories of land availability for leasing for oil and gas. A determination has been made that the lands covered by this EA are open to leasing for oil and gas. In addition, the plan identifies the appropriate stipulations to be associated with each new lease.

Public lands that are closed to leasing separate into two groups. Tracts that have been closed by previous legislation or secretarial policy form one group of lands and are known as *non-discretionary closure*s. The second group of closed lands, consisting of those that would possibly be proposed for closure under this plan, is called *proposed discretionary closures*.

Lands open to oil and gas leasing separate into the following groups: open to leasing under standard lease terms and conditions; open to leasing under a no surface use stipulation; and open to leasing under a limited surface use stipulation. The standard oil and gas lease form includes those preprinted lease terms and conditions that apply to all leases. Other stipulations developed in this plan are applied in lease areas with special resource concerns, and supersede any inconsistent provisions of the standard lease form. The special stipulations proposed in this plan address limited surface use for areas with resource protection needs slightly different from the standard lease stipulation. The Limited Surface Use (LSU) stipulation provides additional protection for Federally Proposed and Listed Species; Proposed and Designated Critical Threatened and Endangered Species Habitat; and Federal Candidate, State Listed and Bureau Sensitive Species. Three additional special stipulations were contained in the Caliente RMP that are not applicable to any of the land in the subject parcels. Those special stipulations are: No surface use for areas where very unique resources exist, LSU – Department of Defense lands, and LSU – Coast (for management of Coast Area ACEC's/SMA's).

Lands Open to Oil and Gas Leasing

All public land and Federally reserved mineral estate within the area covered under this EA are open for oil and gas leasing activities.

The process of nominating a federal parcel for this lease sale was initiated when a letter of interest in oil and gas leasing was submitted to the Sacramento Office of the Bureau of Land Management. The RMP was used to determine the applicability of lease stipulations attached to the parcels in this sale. There are three categories of lease stipulations, described in detail below, and they are:

1. Offer for lease with a Standard Lease stipulation
2. Offer for lease with a No Surface Use stipulation
3. Offer for lease with a Limited Surface Use stipulation

All new leases covered by this EA would be offered with Limited Surface Use Stipulation(s) (LSU). If new leases expire or terminate and the lands are re-leased, they will also be leased with Limited Surface Use Stipulation(s).

Leasing with Standard Lease Stipulation

The Standard Lease stipulation includes the terms and conditions that are the national standards printed on Bureau of Land Management lease forms (form 3100-11, February 2003).

Under standard terms, a proposed exploration and development operation can be modified by the operator and Bureau to minimize impacts of the project's operation design. Modifications are limited to moving the proposed operation less than 200 meters and delaying the project less than 60 days in one lease year.

No lands covered by this EA are proposed to have this stipulation.

No Surface Use Stipulation

This lease is within an area that contains unique or significant natural or cultural values, or other uses preclude surface development over the entire leased area. To prevent or reduce disturbance to unique or significant natural or cultural values or other pre-existing uses that preclude surface development, No Surface Use is allowed on the lease.

Additional Information

Application. The No Surface Use stipulation is intended for use when adequate protection of surface resources cannot be provided through mitigation, and there are no suitable sites for development anywhere on the **entire** lease. Mineral development of the lease from an off-site location is recommended. **There are no lands covered by this EA that are proposed to have this stipulation.**

Review Process. If conditions change so that the NSU stipulation becomes necessary for lands to be leased at a future date, **t**he No Surface Use stipulation would be applied at the time of a lease sale. An exception or modification to the stipulation may be approved if it can be demonstrated that operations can be conducted without causing unacceptable impacts to the critical cultural or natural values or to the other pre-existing use. Any decision to grant an exception or modification would be based on field inspection and inventory and the NEPA review process. The lessee should be aware that the timing of the surveys is critical, in that some species can only be surveyed during a brief period each year. The stipulation may be waived if a determination is made by the Bureau that the resource or other use no longer exists on the leased lands.

Although there may be specific discrete areas within the parcels under this EA where No Surface Use is allowed due to pre-existing conditions, there are no leases where the entire surface is precluded from development. Consequently, there are no lands within these parcels that are proposed to have this stipulation.

Leasing with the Limited Surface Use Stipulation

Special stipulations may be proposed for use to protect unique resources or values where it may be necessary to modify surface activities beyond authorities contained under the standard lease terms (43 CFR 3103.1-3). The Limited Surface Use Stipulation allows BLM, in consultation with the applicant, to extend modification of development proposals beyond the standard 200 meters and 60-day conditions. By reserving the additional leeway in siting facilities, the BLM

and applicant can generally use the combination of increased siting and timing flexibility to modify development proposals to entirely avoid or significantly minimize surface-disturbing effects associated with lease development. The Limited Surface Use stipulation thus allows BLM to offer for lease parcels known to or suspected to contain unique resources or values and resolve any potential conflicts at the time when the lessee is prepared to design development proposals.

This stipulation also advises prospective lessees that they are considering the purchase of a lease in areas known or suspected to contain unique resources or values and advises them of potential constraints and development options available. Historically, the BLM in cooperation with the lessee has been able to find sufficient flexibility in designing lease development proposals, even in the most sensitive of locations, to facilitate development without adversely affecting either the resource values of concern or the oil and gas lease.

Special conditions that may be attached to new leases issued in the area managed by the Bakersfield Field Office are collectively referred to as the Limited Surface Use stipulation (LSU) and supersede any inconsistent provisions of the standard lease form. The wording of the Limited Surface Use stipulation has been adjusted to address two differing resource concerns (there were six in the Caliente RMP, but four are not currently applicable because the resource values or other pertinent criteria do not exist in the subject parcels). The Limited Surface Use Stipulation would be applied at the lease sale, to parcels located as shown on the RMP map and as described below.

This stipulation has been developed to be utilized over the life of the plan without the need for further plan amendments. The LSU stipulation has been worded to allow for adjusting the geographic locations where they would be applied based on the resource condition at the time of the lease sale offering. The locations identified in this EA address 2007 resource conditions that will be updated and modified on an annual basis. Information on those updates will be available to those interested in potential lease sales.

Limited Surface Use Stipulations

a. Federally Proposed and Listed Species (LSU - Protected Species)
b. Federal Candidate, State Listed and Bureau Sensitive Species (LSU - Sensitive Species)

The following LSU categories from the Caliente RMP are shown for informational purposes only – there are currently no lands in the parcels covered by this EA area subject to these stipulations. However, if a determination is made in the future that one or more of the following stipulations would be appropriate, then the stipulation(s) would be applied according to the criteria in the Caliente RMP.

c. Proposed Critical Habitat and Designated Critical Habitat (LSU - Critical Habitat) N/A for the parcels in this EA

d. Raptor (LSU - Raptor) N/A for the parcels in this EA

e. Department of Defense lands (LSU – Defense) – N/A for the parcels in this EA

f. Coast Management Area (LSU – Coast, for management of Coast Area ACEC's/SMA's) – N/A for the parcels in this EA

Waivers, Modification, Exceptions and Deferral to Other Plans

The Authorized Officer may grant a waiver, modification, or exception to the Limited Surface Use stipulation if the factors leading to the stipulation's inclusion in the lease have changed or if new information has been made available. If the protection provided by the stipulation is no longer necessary or can be adequately mitigated and the proposed operation on a lease would not cause unacceptable impacts, a waiver would be evaluated (see 43 CFR 3101.1-4).

The Authorized Officer may also defer the addition of the Limited Surface Use stipulation referred to under b, c, and d above to requiring compliance with other existing approved plans. Those plans may include Habitat Conservation Plans, Programmatic Consultations, Conservation Agreements or others that provide for adequate protection and conservation of resources and compliance with all Federal and State laws.

As an example, once completed, the Kern County Valley Floor Habitat Conservation Plan and associated BLM Programmatic Section 7 Consultation on oil and gas development activities will provide adequate protection for resources identified in b, c, and d above for lands within CDOG administrative boundaries and for all federally reserved mineral estate in Kern County. Future lease sales covering parcels in those areas would defer the addition of a Limited Use Stipulation to notation that compliance with the above approved programs or plans is required.

a. Limited Surface Use Stipulation - Federally Proposed and Listed Species (LSU - Protected Species)

All or a portion of this lease is within the range of one or more plant or animal species (a list of species would be included with the stipulation for each lease) that are either listed as threatened or endangered, or are proposed for such listing by the U.S. Fish and Wildlife Service.

The lessee is notified that time frames for processing applications may be delayed beyond established standards to allow for species surveys, and consultation or conferencing with the U.S. Fish and Wildlife Service. Notice is also given that surface-disturbing activities may be moved or modified, and that some activities may be prohibited during seasonal time periods. Surface disturbing activities will be prohibited on the lease only where:

1. *the proposed action is likely to jeopardize the continued existence of a listed or proposed species, or*
2. *the proposed action is inconsistent with the recovery needs of a listed species as identified in an approved U.S. Fish and Wildlife Service Recovery Plan.*

Prior to the authorization of any surface disturbing activities, a preliminary environmental review will be conducted to identify the potential presence of habitat for these species. Authorizations may be delayed until completion of the necessary surveys during the appropriate time period for these species. The lessee should be aware that the timing of the surveys is critical, in that some species can only be surveyed during a brief period each year.

The BLM may need to initiate consultation or conference with the U.S. Fish and Wildlife Service if the site inspection concludes that a listed or proposed species may be affected by the proposed activity. The lessee should be aware that the U.S. Fish and Wildlife Service has up to 135 days to render their biological opinion, and that there are provisions for an additional 60 day extension. Offsite habitat protection or enhancement for wildlife or vegetation (compensation) may be required by the U.S. Fish and Wildlife Service when habitat is disturbed. The consultation may also result in some restrictions to the lessee's plan of development, including movement or modification of activities, and seasonal restrictions. Surface disturbing activities will be

prohibited on the lease if the consultation or conference concludes that either of the conditions identified in 1. or 2. above exists.

Additional Information

Application. The Limited Surface Use - Federally Proposed and Listed Species (LSU - Protected Species) stipulation would be attached, at the time of lease sale, to leases within the range of certain federally listed or proposed species, or to leases containing, or adjacent to, documented locations of certain federally listed or proposed species. (A list of species would be included with the stipulation for each lease.)

See BLM Biology Tables 4 and 6 for the Federally Proposed and Listed Species in the Bakersfield Field Office.

Documented locations for currently proposed species will be used to determine current applicability of the LSU - Protected Species stipulation for proposed species. If additional species become proposed, or new location information becomes available, the species and parcel lists will be modified and all subsequent lease sales will be evaluated against the modified parcel list.

Review Process. Generally, the following process will be used to approve surface disturbing activities on leases with the LSU - Protected Species stipulation. The proposed activity would be reviewed to determine if listed or proposed species would be affected. This review may involve site-specific surveys for plant and animal species, conducted according to established methodologies that may specify certain seasons or other conditions. In some cases, this may mean that a survey cannot be completed until the next growing season for some plant species or after seasonal appearance for some animal species.

If the review determines that listed or proposed species will not be affected, approval of the application will normally be granted within 30 days of the review.

If the review determines that listed or proposed species may be affected, but in a beneficial, insignificant or benign manner, and written concurrence is received from the U.S. Fish and Wildlife Service, approval of the application will normally be granted within 30 days of receiving U.S. Fish and Wildlife Service concurrence.

If it is determined that a listed or proposed species may be adversely affected, the BLM will work with the applicant to modify the proposal to minimize impacts. Modifications may include movement of activities, seasonal restrictions, mitigation and/or compensation. Modified proposals will be developed cooperatively with the applicant to ensure that the modified project still meets the applicant's objective. If the modified project may still adversely affect a listed or proposed species, BLM will initiate formal consultation or conference with the U.S. Fish and Wildlife Service.

Coordination with the U.S. Fish and Wildlife Service on Listed Species. Currently there are two options for meeting the formal consultation requirement. A new consultation may be initiated or a previously completed formal consultation may be utilized.

If a new consultation is initiated, the U.S. Fish and Wildlife Service will issue a document, called the Biological Opinion. The U.S. Fish and Wildlife Service has up to 135 days to complete a

Biological Opinion and they may request an additional 60-day extension. Extensions beyond 195 days require the consent of any applicant.

A previously completed formal consultation may also be used to meet the formal consultation requirement. An example of a previously completed consultation that may be used is the **San Joaquin Valley Oil and Gas Programmatic Biological Opinion.**

Upon completion of a new consultation or determination that a previously completed consultation can be used, approval of the application will normally be granted within 30 days. If the new consultation concludes that a listed species may be jeopardized, then surface disturbance will be prohibited on the lease. Surface disturbance will also be prohibited if the consultation concludes that the proposed action is inconsistent with the recovery needs of the listed species as identified in an approved U.S. Fish and Wildlife Service Recovery Plan.

Coordination with the U.S. Fish and Wildlife Service on Proposed Species. Bureau policy requires a conferencing with the U.S. Fish and Wildlife Service on any action that may adversely affect proposed species. Depending on the complexity of the situation, a conference may be completed in a single telephone conversation or may require the time frames of a consultation. Generally, upon completion of the conference, approval of the application will be granted within 30 days. If the conference concludes that a proposed species may be jeopardized, surface-disturbing activities will be prohibited on the lease.

Final Approval. Final approval of applications that will have no effect on listed or proposed species will normally be granted within 30 days of the review.

Final approval for projects that may affect listed or proposed species in a beneficial, insignificant or benign manner will normally be granted within 30 days of receiving U.S. Fish and Wildlife Service written concurrence. The U.S. Fish and Wildlife Service generally responds to requests for concurrence in 30 days.

For projects that require consultation or conference with the U.S. Fish and Wildlife Service, final approval will normally be granted within 30 days of consultation or conference completion. Conditions of approval will include any conditions specified by the BLM or U.S. Fish and Wildlife Service for minimizing impacts.

b. Limited Surface Use - Federal Candidate, State Listed and Bureau Sensitive Species (LSU - Sensitive Species)

All or a portion of this lease is within the range of one or more plant or animal species (see attached list) that are either Federal candidates for listing as threatened or endangered (Federal Candidate), are listed by the State of California as threatened or endangered (State Listed), or are designated by the Bureau of Land Management as Sensitive (Bureau Sensitive).

The lessee is notified that time frames for processing applications may be delayed beyond established standards to allow for species surveys and coordination with the U.S. Fish and Wildlife Service and California Department of Fish and Game. Notice is also given that surface-disturbing activities may be relocated beyond the standard 200 meters but not more than 1/4 mile and that surface disturbing activities may be prohibited during seasonal time periods.

Prior to the authorization of any surface disturbing activities, a preliminary environmental review will be conducted to identify the potential presence of habitat for these species. Authorizations may be delayed until completion of the necessary surveys during the appropriate time period for these species. The lessee should be aware that the timing of the surveys is critical, in that some species can only be surveyed during a brief period each year.

The Bureau of Land Management may need to coordinate with the U.S. Fish and Wildlife Service or the California Department of Fish and Game if the site inspection concludes that a Federal Candidate, State Listed or Bureau Sensitive species may be affected by the proposed activity. Coordination may delay application processing beyond established time frames.

To prevent or reduce disturbance to Federal Candidate, State Listed or Bureau Sensitive species, surface operations may be moved up to 1/4 mile and surface disturbing activities may be prohibited during seasonal time periods.

Additional Information

The Limited Use - Federal Candidate, State Listed and Bureau Sensitive Species (LSU - Sensitive Species) stipulation would be attached to leases that are either within the range of certain species, or that contain or are adjacent to a documented location of a certain species. A list of species would be included with the stipulation for each lease.

See Biology Tables 4, 5, 7 for the Federal Candidate, State Listed and Bureau Sensitive Species within the Bakersfield Field Office.

The current list of parcels or potential geographic area for each species will be maintained in the Bakersfield Field Office. As species are added or removed from special designation, or new location information becomes available, the species list, parcel lists and geographic area lists will be modified. All subsequent lease auctions will be evaluated against the modified species list, parcel list or geographic area list.

Generally the following process will be used to approve surface disturbing activities on leases with the LSU - Sensitive Species stipulation. The proposed activity would be reviewed to determine if special status species would be affected. This review may involve site-specific surveys for plant and animal species, conducted according to established methodologies that may specify certain seasons or other conditions. In some cases this may mean that a survey cannot be completed until the next growing season for some plants or after seasonal appearance for some animal species.

If the review determines that a special status species may be adversely affected, then surface disturbing activities may be relocated up to 1/4 mile and certain surface disturbing activities may be prohibited during seasonal periods. Bureau policy may also require coordination with the U.S. Fish and Wildlife Service or California Department of Fish and Game.

c. **Limited Surface Use Stipulation - Proposed Critical Habitat and Designated Critical Habitat (LSU - Critical Habitat)** – Although there is not currently any Proposed or Designated Critical Habitat within the areas that are identified for lease in this sale, should Proposed or Critical Habitat be designated within these lands in the future, the following stipulation would apply:

All or a portion of this lease lies within an area that is designated as critical habitat, or is proposed for designation as critical habitat (see attached species and parcel list) by the U.S. Fish and Wildlife Service.

The lessee is notified that time frames for processing applications may be delayed beyond established standards to allow for species surveys, and consultation or conferencing with the U.S. Fish and Wildlife Service. Notice is also given that surface disturbing activities may be moved or modified and that some activities may be prohibited during seasonal time periods. Surface disturbing activities will be prohibited on the lease only where:

> *1. the proposed action is likely to destroy or adversely modify critical habitat or proposed critical habitat, or*
>
> *2. the proposed action is inconsistent with the recovery needs of a listed species as identified in an approved U.S. Fish and Wildlife Service Recovery Plan.*

Prior to the authorization of any surface disturbing activities, a preliminary environmental review will be conducted to identify the potential presence of habitat for these species. Authorizations may be delayed until completion of the necessary surveys during the appropriate time period for these species. The lessee should be aware that the timing of the surveys is critical, in that some species can only be surveyed during a brief period each year.

The Bureau of Land Management may need to initiate consultation or conference with the U.S. Fish and Wildlife Service if the site inspection concludes that designated or proposed critical habitat may be affected by the proposed activity. The lessee should be aware that the U.S. Fish and Wildlife Service has up to 135 days to render their biological opinion, and that there are provisions for an additional 60 day extension. Offsite habitat protection or enhancement for wildlife or vegetation (compensation) may be required by the U.S. Fish and Wildlife Service when designated or proposed critical habitat is disturbed. The consultation may also result in some restrictions to the lessee's plan of development, including movement or modification of activities, and seasonal restrictions. Surface disturbing activities will be prohibited on the lease only if the consultation or conference concludes that either of the conditions identified in 1. or 2. above exist.

Additional Information

Application. The Limited Surface Use - Designated and Proposed Critical Habitat (LSU - Critical Habitat) stipulation would be attached to leases within areas that are designated as critical habitat, or proposed for designation as critical habitat for certain species. A list of species and parcels would be included with the stipulation for each lease. Critical habitat is designated or proposed by the U.S. Fish and Wildlife Service according to the regulations found in 50 CFR 424. Critical habitat means (1) the specific areas within geographical area currently occupied by a species, at the time it is listed in accordance with the Endangered Species Act, on which are found those physical or biological features (i) essential to the conservation of the species and (ii) that may require special management considerations or protection, and (2) specific areas outside the geographical area occupied by a species at the time it is listed upon a determination by the Secretary that such areas are essential for conservation of the species (50 CFR 424.02).

There is currently no designated or proposed critical habitat, or else the constituent elements do not exist, within the parcels covered by this EA. Consequently, no critical habitat would be

affected by leasing and developing these parcels, and none of the parcels would have this stipulation. If additional areas are designated within these parcels, future permit approvals would be evaluated using those criteria as appropriate

Review Process. Generally, the following process will be used to approve surface disturbing activities on leases with the LSU - Critical Habitat stipulation. The proposed activity would be reviewed to determine if designated or proposed critical habitat would be affected. This review may involve site specific surveys for plant and animal species, conducted according to established methodologies which may specify certain seasons or other conditions. In some cases this may mean that a survey cannot be completed until the next growing season for some plant species or after seasonal appearance for some animal species.

If the review determines that listed or proposed critical habitat will not be affected, approval of the application will normally be granted within 30 days of the review.

If the review determines that listed or proposed critical habitat may be affected, but in a beneficial, insignificant or benign manner, and written concurrence is received from the U.S. Fish and Wildlife Service, approval of the application will normally be granted within 30 days of receiving U.S. Fish and Wildlife Service concurrence.

If it is determined that a listed or proposed critical habitat may be adversely affected, the BLM will work with the applicant to modify the proposal to minimize impacts. Modifications may include movement of activities, seasonal restrictions, mitigation and compensation. Modified proposals will be developed cooperatively with the applicant to ensure that the modified project still meets the applicant's objective. If the modified project may still adversely affect designated or proposed critical habitat, BLM will initiate formal consultation or conference with the U.S. Fish and Wildlife Service.

Coordination with the U.S. Fish and Wildlife Service on Designated Critical Habitat. The BLM is required to initiate formal consultation with the U.S. Fish and Wildlife Service for any action that may adversely affect designated critical habitat. As a result of the consultation, the U.S. Fish and Wildlife Service issues a document, called the Biological Opinion. The U.S. Fish and Wildlife Service has up to 135 days to complete a Biological Opinion and they may request an additional 60 day extension. Extensions beyond 195 days require the consent of any applicant.

As part of the Biological Opinion, the U.S. Fish and Wildlife Service will determine if the proposed action is likely to destroy or adversely modify critical habitat. Destruction or adverse modification of critical habitat means a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species. Such alterations include, but are not limited to, alterations adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical (50 CFR 402.02).

If consultation concludes that critical habitat will be destroyed or adversely modified, then surface disturbance will be prohibited on the affected portion of the lease. Surface disturbance will also be prohibited if the consultation concludes that the proposed action is inconsistent with the recovery needs of the listed species as identified in an approved U.S. Fish and Wildlife Service Recovery Plan.

Coordination with the U.S. Fish and Wildlife Service on Proposed Critical Habitat. Bureau policy requires conferencing with the U.S. Fish and Wildlife Service on any action that may

adversely affect proposed critical habitat. Depending on the complexity of the situation, a conference may be completed in a single telephone conversation or may require the time frames of a consultation. Generally, upon completion of the conference, approval of the application will be granted within 30 days. If the conference concludes that proposed critical habitat will be destroyed or adversely modified, then surface disturbance will be prohibited on the affected portion of the lease.

Final Approval. Final approval of applications that will have no effect on designated or proposed critical habitat will normally be granted within 30 days of the review.

Final approval for projects that may affect designated or proposed critical habitat in a beneficial, insignificant or benign manner will normally be granted within 30 days of receiving U.S. Fish and Wildlife Service written concurrence. The U.S. Fish and Wildlife Service generally responds to requests for concurrence in 30 days.

For projects that require consultation or conference with the U.S. Fish and Wildlife Service, final approval will normally be granted within 30 days of consultation or conference completion. Conditions of approval will include any conditions specified by the BLM or U.S. Fish and Wildlife Service for minimizing impacts.

d. Limited Surface Use - Raptor (LSU - Raptor) – N/A

e. Department of Defense lands (LSU – Defense) – N/A

f. Coast Management Area (LSU – Coast, for management of Coast Area ACEC's/SMA's) – N/A

Standard Engineering Practices

Recognized engineering practices for the routine operation of oil and gas exploration and development are known as Conditions of Approval or COAs. These standard procedures are described in the Federal Onshore Orders and further clarified in the Code of Federal Regulations (CFR 43, October, 2005).

Standard regulations may be supplemented with additional COAs. The additional COAs address sensitive issues within the Area managed by the Bakersfield Field Office. Critical issues underlying the federal regulations and supplemental COAs are the protection of usable aquifers, mineral zones including hydrocarbons, surface environmental issues, site safety and well control, and site reclamation.

Bureau inspection and monitoring of oil field activity on public lands is discussed within the phases of oil and gas development:

a. Drilling a New Well
b. Temporary Abandonment of a Producing Well (Idle Well)
c. Plugging and Abandonment of a Well
d. Surface Reclamation

No special COAs are normally added for routine producing operations.

Drilling a New Well

After an Application for Permit to Drill (APD) has been received by the Bakersfield Office of the Bureau of Land Management, a review of engineering design as well as potential effects to sensitive resources is undertaken. Special conditions would be noted on the application at this review stage of an oil and gas project by either the operator or the Bureau of Land Management. Modified proposals would be developed cooperatively with the applicant to ensure that the modified project still meets the applicant's objective. Any special conditions would be attached to the APD by the Bureau and the applicant would be informed within seven days of receipt of the APD. In addition to Bureau-wide regulations, the Bakersfield Field Office has developed procedures - these may include but are not limited to:

Steam Injectors. All steam injection wells within a 300' radius of a new location must be shut-in a minimum of 3 days prior to the spudding of a new well.

Conductor Pipe. A minimum of 50' of conductor pipe is to be set and cemented to surface. The conductor pipe must be equivalent to or exceed the properties of A-25 grade line pipe.

Diverter. Prior to spud, a diverter system will be installed on the conductor pipe and function tested. The test will be recorded in the drilling log. The diverter system, at a minimum, will consist of an annular type preventer (minimum working pressure 1000 psi), 2" (minimum ID) kill line, and 6" (minimum ID) diverter line with no internal restrictions or turns. A full opening hydraulically-controlled valve will be installed in the diverter line which will automatically open when the annular preventer is closed. The accumulator system will have sufficient capacity to close the annular preventer and open the hydraulically-controlled valve.

Remote controls for the diverter system will be located on the rig floor and readily accessible to the driller. Remote controls will be capable of closing the annular preventer and opening the hydraulically-controlled valve. Master controls will be located at the accumulator and will be capable of closing and opening the annular preventer and opening the hydraulically-controlled valve. The diverter system will be function-tested daily and the test recorded in the drilling log.

General Casing and Cementing. A Subsequent Report (Form 3160-5) detailing the size, weight, and grade of the casing; the amount and type of cement, including additives; and a copy of the service company's materials ticket and job log will be submitted to the BLM within five (5) business days following the cementing of the casing string. Each casing string (except conductor pipe) will be pressure tested, prior to drilling out the casing shoe, to 0.22 psi/ft of casing string length or 1000 psi, whichever is greater, but not to exceed 70% of the internal yield pressure of the casing. The casing pressure test will be recorded in the drilling log. The wait-on-cement (WOC) time for each casing string will be adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

Drilling Fluids. Sufficient quantities of drilling fluid (mud and water) will be maintained at the well site, at all times, for the purpose of controlling steam kicks.

Temporary Abandonment of a Producing Well (Idle Well)

Economic conditions often depress the California market for the typical heavy oil produced in the area managed by the Bakersfield Field Office. When the producing market is depressed, an operator may decide to shut-in his uneconomic, producing wells and wait for conditions to improve. The highly viscous nature of most Kern County crude oil, typical low well head pressures, and the relatively low corrosive properties of the fluids (low sulfur crude) make the known dangers of shutting in a well for long periods and then bringing it back on-line less of a mechanical problem here in this Field Office Area than in other producing regions of the country. As a result, by 1990, a large number of wells were remaining idle for longer and longer periods.

Monitoring and correction of the problem have been successfully undertaken by the California Division of Oil, Gas, and Geothermal Resources and the local BLM Field Office. The following additional conditions *may* be required as applicable prior to the temporary abandonment (TA) of a producing oil/gas well, service well, or an injection well.

Zone Isolation. The requirement to isolate the producing interval (General Requirement #4) is waived. This waiver is based on the information submitted with the application and the geologic data in Volume # 1 California Oil and Gas Fields, Central California, (Buena Vista Oil field) which indicates the absence of usable water aquifers above the producing horizon in (section in which well is located).

Mechanical Integrity of Casing. The mechanical integrity of the casing may be determined using the ADA pressure test method.

Fluid Surveys. A fluid level survey will be performed at 2-5 year intervals during the period the well is temporarily abandoned. A copy of the survey will be submitted to the BLM with the TA well request (sundry notice form 3160-5).

Monitoring of Wellhead Pressures and Temperatures. Wellhead pressure and temperature will be continuously monitored throughout the period the well is temporarily abandoned. Any pressure/temperature change will be promptly reported to the BLM.

Isolation of the Producing Interval. The producing interval will be isolated by setting a plug in the casing within 100' above the producing interval if a rising fluid level, an increasing wellhead pressure, or an increasing wellhead temperature is detected. The plug can be either a retrievable or drillable-type bridge plug or a cement plug of at least 100' in length.

Plugging and Abandonment of a Well

No additional conditions are typically attached to the abandonment of a well in California. Onshore Orders describe the plugging procedure. While final abandonment will normally be witnessed by the BLM, no final site marker is currently required by the Bakersfield field office.

Surface Reclamation

Conditions for the recovery of an oil well site are unique to each area's ecosystem and habitat. The following examples of Conditions of Approval have been developed for use within the Area managed by the Bakersfield Field Office. The applicability of any or all of these COAs will be determined based on site-specific conditions.

General. The operator (or holder) will prepare a seedbed by: a) scarifying the disturbed area, (b) distributing topsoil uniformly, or c) disking the topsoil, as directed by the BLM Authorized Officer (use one as appropriate).

The operator will recontour the disturbed area and obliterate all earthwork by removing embankments, backfilling excavations, and grading to re-establish the approximate original contours of the land in the area of operation.

The operator will uniformly spread topsoil over all unoccupied disturbed area (outside the ditch line, fence line, work area). Spreading will not be done when the ground or topsoil is frozen or wet.

The operator will seed all disturbed area, using an agreed upon method suitable for the location. Seeding will be repeated if a satisfactory stand is not obtained as determined by the BLM Authorized Officer upon evaluation after the first growing season.

The operator will arrange to have a biologist available to assist the construction workers in the identification and avoidance of endangered species.

Producing Wells. Site reclamation for producing wells will be accomplished for portions of the site not required for continued operation of the well. The following measures are typical reclamation requirements, and any or all of these may be required on a site by site basis:

Reclamation of drilling fluid pit (mud pit).
Polluting substances, contaminated materials moved offsite or buried.
Site fencing.
Berm removal and site grading.
Cut and fill slope vegetation.

Non-producing Wells. Rehabilitation on the entire site will be required and will commence as soon as practical, dependent upon prevailing weather conditions. Cut and fill slopes will be reduced and graded to blend to the adjacent terrain.

Drilling fluids held within pits may be allowed to dry. Fluids that will not dry must be removed. All polluting substances or contaminated materials such as oil, oil-saturated soils, and gravels will be buried with a minimum of 2 feet of clean soil as cover, or be removed to an approved site.

Drainages will be re-established and temporary measures will be required to prevent erosion to the site until vegetation is established.

After final grading and before replacement of topsoil, the entire surface of the site will be scarified to eliminate slippage surfaces and to promote root penetration. Topsoil will then be spread over the site to achieve an approximate uniform, stable thickness consistent with the established contours.

Permanent Well Abandonment. The surface management agency is responsible for establishing and approving methods for surface rehabilitation and determining when this rehabilitation has been satisfactorily accomplished. At this point, a Subsequent (Final) Report of Abandonment will be proved.