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May 2011 Oil and Gas Lease Sale

Location: Cedar City Field Office
Iron County, Utah

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1.0 PURPOSE & NEED

1.1 Introduction

The Bureau of Land Management (BLM) has prepared this environmental assessment (EA) to disclose and analyze the environmental consequences of the sale of approximately 11 parcels during the May 2011 oil and gas lease sale. The EA is a site-specific analysis of potential impacts that could result from the implementation of a proposed action or alternatives to the proposed action. The EA assists the BLM in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any significant impacts could result from the analyzed actions. *Significance* is defined by NEPA and is found in regulation 40 CFR 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of Finding of No Significant Impact (FONSI). If the decision maker determines that this project has significant impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a Decision Record may be signed for the EA approving the selected alternative, whether the proposed action or another alternative. A Decision Record (DR), including a FONSI statement, for this EA would document the reasons why implementation of the selected alternative would not result in significant environmental impacts (effects) beyond those already addressed in the Cedar Beaver Garfield Antimony Resource Management Plan (CBGA RMP; BLM, 1986) and in the Amended Decision Record of Environmental Assessment UT-040-08-036, Oil and Gas Leasing in the Eastern Portion of the Cedar City Field Office (CCFO Programmatic Oil and Gas Leasing EA; BLM, 2009).

1.2 Background

Nominations to lease for oil and gas development for the lands encompassed by 11 parcels (see Appendix A, May 2011 Preliminary Oil and Gas Lease Sale List; Appendix B, Maps of Parcels) were received by the BLM. The surface and mineral rights for the parcels—with the exception of the surface rights on split-estate portions of parcels UT0511-004 and UT0511-010 (refer to Appendix B)—are owned by the federal government and administered by the CCFO.

Four of the nominated parcels will be deferred until such time that the BLM completes the pending revision to the CBGA RMP[1]. Parcel UT0511-001 contains historic Bonneville cutthroat trout habitat, and on that basis, the CCFO Programmatic Oil and Gas Leasing EA Amended Decision Record requires deferral until the land use plan is revised or amended. After the parcels were reviewed against the CCFO Programmatic Oil and Gas EA, it was determined that parcels UT0511-002, UT0511-003, and UT0511-004 would require additional analysis which cannot be provided in time to support a May 2011 lease sale. It was determined that leasing these three parcels could lead to potential impacts to developed recreation areas within and around the Greater Three Peaks Special Recreation Management Area. A change in leasing category for this area from Category 1 (Open with Standard Stipulations) would most likely be necessary to prevent identified impacts and must be addressed in a planning level document.

[1] Additional information is provided within the Federal Register Vol. 75, No.175, Friday September 10, 2010.

1.3 Purpose and Need of the Proposed Action

The purpose of the proposed action is to provide parcels for inclusion in a competitive oil and gas lease sale to be held by the Utah BLM State Office in May 2011. Offering parcels for competitive oil and gas leasing provides for the orderly development of fluid mineral resources under BLM's jurisdiction in a manner consistent with multiple use management and environmental consideration for the resources that may be present. Adequate provisions must be included with the leases to protect public health and safety and assure full compliance with the objectives of NEPA and other federal environmental laws and regulations. Continued leasing is necessary to maintain options for production of oil and gas as companies seek new areas for production or attempt to locate and develop previously unidentified, inaccessible or uneconomical reserves.

The sale of oil and gas leases is needed to meet the growing energy needs of the United States public. The BLM is required by law to review areas that have been nominated, and there has been increased interest in oil and gas exploration in the Cedar City Field Office area in recent years. Although an oil or gas discovery is considered to be unlikely, based on the reasonably foreseeable development (RFD) scenario which the BLM has determined is valid even in today's energy driven market, such a discovery would require the completion of new analysis.

Oil and gas leasing is a principal use of the public lands as identified in Section 102(a)(12), 103(1) of the Federal Land Policy and Management Act of 1976 (FLPMA), and it is conducted to meet requirements of the Mineral Leasing Act of 1920, as amended, the Mining and Minerals Policy Act of 1970, and the Federal Onshore Oil and Gas Leasing Reform Act of 1987 (Reform Act). Leases would be issued pursuant to 43 CFR subpart 3100.

1.4 Conformance with BLM Land Use Plan

The Proposed Action and No Action alternatives described below are in conformance with CBGA RMP (BLM, 1986) because they are specifically provided for in the planning decision. They conform to Minerals Objective 1 on page 19, which states: "Provide maximum leasing opportunity for oil, gas, and geothermal exploration and development by utilizing the least restrictive leasing categories necessary to adequately protect sensitive resources." It has been determined for these parcels that the Proposed Action and No Action alternatives would not conflict with other decisions throughout the plan.

Oil and gas leasing categories were identified in the Cedar City District Oil and Gas Leasing Environmental Analysis Record (EAR) (BLM, 1976) and were subsequently reviewed within the CBGA RMP and the Supplemental EA for Oil and Gas Leasing, Cedar City District (EA #UT-040-88-69) (BLM, 1988). The original oil and gas leasing categories established in 1976 were amended in the CBGA RMP to protect other resource values. The CBGA RMP categorizes all lands in Iron County that are available for leasing along with any applicable stipulations that would be attached to leases offered for certain areas (BLM 1986; pages 25-56 and Mineral Map 1). With the exception of portions of parcel UT0511-011 designated as Category 2 (Special Stipulation 4, Riparian), the parcels are located within an area categorized in the CBGA RMP as Category 1 lands that are open to oil and gas leasing with Standard Stipulations.

Standard lease terms provide for reasonable measures to minimize adverse impacts to specific resource values, land uses, or users (Standard Lease Terms are contained in Form 3100-11, Offer to Lease and Lease for Oil and Gas, U.S. Department of the Interior, BLM, June 1988 or later edition). Although once the lease has been issued, the lessee has the right to use as much of the leased land as necessary to explore for, drill for, extract, remove, and dispose of oil and gas deposits located under the leased lands, operations must be conducted in a manner that avoids unnecessary or undue degradation of the environment and minimizes adverse impacts to the land, air, water, cultural, biological, and visual elements of the environment, as well as other land uses or users. Compliance with valid, nondiscretionary statutes (laws) is included in the standard lease terms and would apply to all lands and operations that are part of all of the alternatives.

Nondiscretionary actions include the BLM's requirements under federal environmental protection laws, such as the Clean Water Act, Clean Air Act, Endangered Species Act, National Historic Preservation Act, and Federal Land Policy Management Act, which are applicable to all actions on federal lands even though they are not reflected in the oil and gas stipulations in the RMP and would be applied to all potential leases regardless of their category. Also included in all leases are the two mandatory stipulations for the statutory protection of cultural resources (BLM Washington Office Instruction Memorandum No. 2005-03, Cultural Resources and Tribal Consultation for Fluid Minerals Leasing) and threatened or endangered species (BLM Washington Office Instruction Memorandum No. 2002-174, Endangered Species Act Section 7 Consultation), described in Sections 4.3.1.1 and 4.3.1.4, respectively. BLM would also encourage industry to consider participating in EPA's Natural Gas STAR program under all alternatives. The program is a flexible, voluntary partnership between EPA and the oil and natural gas industry wherein EPA works with companies that produce, process, transmit and distribute natural gas to identify and promote the implementation of cost-effective technologies and practices to reduce emissions of methane, a greenhouse gas.

The CCFO Programmatic Oil and Gas Leasing EA (BLM, 2009) provided additional protective measures beyond the terms and stipulations described in the CBGA RMP, and these measures would be applied to the parcels as lease notices when deemed appropriate.

1.5 Relationship to Statutes, Regulations, or Other Plans

The proposed action is consistent with federal environmental laws and regulations, Executive Orders, and Department of Interior and the BLM policies and is in compliance, to the maximum extent possible, with state laws and local and county ordinances and plans to the maximum extent possible, including the following:

- Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776, 43 U.S.C. 1761) and the regulations issued there under at 43 Code of Federal Regulations, part 2800.
- Taylor Grazing Act of 1934
- Utah Standards and Guidelines for Rangeland Health (1997)
- Federal Land Policy and Management Act of 1976
- Regulations found at 43 CFR 2800
- BLM Utah Riparian Management Policy
- Section 106 of the National Historic Preservation Act of 1966, as amended
- Memorandum of Understanding Between the BLM CCFO and Paiute Indian Tribe of Utah
- Utah Prairie Dog Habitat Conservation Plan
- Bald and Golden Eagle Protection Act of 1962

- Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), as amended.
- BLM Manual 6840- Special Status Species Management
- Migratory Bird Treaty Act
- Utah Comprehensive Wildlife Conservation Strategy (CWCS)
- Utah Partners in Flight Avian Conservation Strategy Version 2.0.
- Birds of conservation concern 2002
- Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds
- MOU between the USDI BLM and USFWS to Promote the Conservation and Management of Migratory Birds (4/2010)
- Utah Supplemental Planning Guidance: Raptor Best Management Practices (BLM UTSO IM 2006-096)
- Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (U.S. Department of Interior, Bureau of Land Management, June 2007)
- Oil and Gas Leasing Reform – Land Use Planning and Lease Parcel Reviews (BLM WO IM 2010-117)

These documents and their associated analysis are hereby incorporated by reference, based on their use and consideration by various authors of this document. The attached Interdisciplinary Team Checklist, Appendix C, was also developed after consideration of these documents and their contents. Each of these documents is available for review upon request from the Cedar City Field Office. Utah's Standards for Rangeland Health address upland soils, riparian/wetlands, desired and native species and water quality. These resources are either analyzed later in this document or, if not impacted, are also listed in Appendix C.

1.6 Identification of Issues

The proposed action was reviewed by an interdisciplinary parcel review (IDPR) team composed of resource specialists from the Cedar City Field Office. This team identified resources in the parcel areas which might be affected and considered potential impacts using current office records and geographic information system (GIS) data, and site visits. Notice of the lease sale, parcel locations and site visit date was also provided to the superintendents of Bryce, Capitol Reef, and Zion National Parks and the Cedar Breaks National Monument. The same notice and coordination efforts were also conducted with the US Fish and Wildlife Service, the State of Utah's Public Land Policy Coordination Office, and the US Forest Service. The BLM Utah State Office (USO) specialists for air quality, paleontology, and solid minerals also reviewed the proposal. The IDPR team conducted a site visit to validate existing data and gather new information in order to make an informed leasing recommendation on November 22, 2010. The results of the IDPR team review are contained in the Interdisciplinary Team Checklist, Appendix C.

Public notification was initiated by entering the project information on the Environmental Notification Bulletin Board (ENBB[2]), a BLM environmental information internet site on November 15, 2010. The EA and unsigned FONSI were also posted for public review and comment from December 17, 2010 to January 21, 2011. No comments were received from the public during this time. The protest period for the May 2011 Oil and Gas Lease Sale will run from February 16, 2011 through March 18, 2011. Additional information for the public is maintained on the Utah BLM Oil and Gas Leasing Webpage[3].

1.7 Issues Considered but Eliminated from Further Analysis

The following issues were considered, but eliminated from further analysis:

- Air Quality
- Areas of Critical Environmental Concern
- BLM Natural Areas
- Greenhouse Gas Emissions
- Environmental Justice
- Farmlands (Prime or Unique)
- Floodplains
- Fuels/Fire Management
- Geology / Mineral Resources / Energy Production
- Hydrologic Conditions
- Invasive Species / Noxious Weeds
- Lands / Access
- Livestock Grazing
- Native American Religious Concerns
- Paleontology
- Rangeland Health Standards
- Recreation
- Socio-Economics
- Soils
- Vegetation Excluding Threatened, Endangered, Candidate and Sensitive Species
- Visual Resources
- Wastes (hazardous or solid)
- Water Resources / Quality (Drinking / Surface / Ground)
- Wetlands / Riparian Zones
- Wild and Scenic Rivers
- Wild Horses and Burros
- Wilderness / WSA
- Wilderness Characteristics
- Woodland / Forestry

[2] Accessed online at: https://www.blm.gov/ut/enbb/index.php
[3] Accessed online at: http://www.blm.gov/ut/st/en/prog/energy/oil_and_gas/oil_and_gas_lease.html

These issues were eliminated from analysis because they were either not applicable to the lands considered in the proposed action or the reviewing specialists did not consider the proposed action to represent a potential impact to these issues, under applicable leasing stipulations and protective measures provided through the CBGA RMP (BLM, 1986) and the CCFO Programmatic Oil and Gas Leasing EA (BLM, 2009).

1.8 Summary

This chapter has presented the purpose and need of the proposed project, as well as the relevant issues, i.e., those elements of the human environment that could be affected by the implementation of the proposed project. In order to meet the purpose and need of the proposed project in a way that resolves the issues, the BLM has considered and/or developed a range of action alternatives. These alternatives are presented in Chapter 2. The potential environmental impacts or consequences resulting from the implementation of each alternative considered in detail are analyzed in Chapter 4 for each of the identified issues.

2.0 DESCRIPTION OF ALTERNATIVES, INCLUDING THE PROPOSED ACTION

2.1 Introduction

This environmental assessment focuses on the Proposed Action and No Action alternatives. Other alternatives were not considered because the issues identified during scoping did not indicate a need for additional alternatives or mitigation beyond those contained in the proposed action. The No Action alternative is considered and analyzed to provide a baseline for comparison of the impacts of the Proposed Action.

2.2 Alternative A – Proposed Action

Seven nominated parcels within the jurisdiction of the Cedar City Field Office have been proposed for sale in the May 2011 Oil and Gas Lease Sale to be held at the Utah BLM State Office. The nominated parcels would be offered with additional resource protection measures consistent with the CBGA RMP (BLM, 1986) CCFO Programmatic Oil and Gas Leasing EA (BLM, 2009). Legal descriptions of each nominated parcel can be found in Appendix A, and maps of the nominated parcels can be found in Appendix B.

2.3 Alternative B – No Action

The No Action alternative would not offer any of the nominated parcels for sale.

2.4 Alternatives Considered but Not Carried Forward

Leasing of All Eleven Parcels. A change of leasing category is necessary to protect resources within the Greater Three Peaks SRMA; therefore this alternative was not carried forward. The three parcels (UT0511-002, UT0511-003, and UT0511-004) are within the Greater Three Peaks SRMA and a plan amendment or Land Use Plan revision would be necessary to properly protect the resources within and surrounding these parcels. Leasing in the Greater Three Peaks SRMA would be deferred until an amendment or revision is completed (including deferral of parcels UT0511-002, UT0511-003, and UT0511-004).

3.0 AFFECTED ENVIRONMENT

3.1 Introduction

This chapter presents the potentially affected existing environment (i.e., the physical, biological, social, and economic values and resources) of the impact area as identified in the Interdisciplinary Team Checklist found in Appendix C and presented in Chapter 1 of this assessment. This chapter provides the baseline for comparison of impacts/consequences described in Chapter 4. Only those aspects of the affected environment that are potentially impacted are described in detail (see Appendix C).

3.2 General Setting

The seven nominated parcels are located in Iron County in southwestern Utah. Appendix A contains legal descriptions of the nominated parcels. Appendix B contains maps of the nominated parcels.

The area's land ownership pattern is fragmented between private, state, and federally-managed lands. Iron County is 57.2 percent federal lands (1,887 square miles), 6.7 percent state lands (221 square miles), 36.0 percent private and local government lands (1,187 square miles) and 0.1 percent Tribal lands (3 square miles). I-15 traverses northeasterly along the eastern portion of Iron County.

The area is within the Basin and Range physiographic province, which generally consists of north-south trending mountain ranges separated by broad arid valleys with interior drainage and vegetated with sagebrush and other plants typical of the Great Basin. The soil in this area consists mostly of aridisols, an iron-rich desert soil, that is used mainly for range, wildlife, and recreation. Because of the dry climate in which they are found, these soils typically are not used for agricultural production unless irrigation water is available. The valleys throughout the region contain a variety of native grasses, junipers, and pinyon pines, while xerophytic and desert scrub vegetation are common in lower and drier areas.

The climate of the area is characterized by cold winters and hot summers – average minimum temperatures are around 17°F (December – January) and average maximum temperatures are in the 90s (July). Average annual precipitation ranges from about 10 to 13 inches depending on elevation, with approximately 50 percent of the moisture coming during the period of plant growth between April and September.

The area has had a relatively long socio-cultural history of resource use and development. Since the late 1800s agricultural pursuits such as farming and cattle and sheep ranching have dominated the character of the general region. More recently, however, the dominance of the agricultural sector on the economy has somewhat given way to the service sector. This is an indication of the heavy reliance of the area's economy on tourism attracted by the several national parks, monuments, and recreation areas of the region. Despite heavy visitation to the region, much of its rural western character has been retained through its small cities and towns and its large open expanses.

3.3 Resources/Issues Brought Forward for Analysis

The affected environment of the proposed action and no action alternatives were considered and analyzed by an interdisciplinary team as documented in the Interdisciplinary Team Checklist,

Appendix C. The checklist indicates which resources of concern are either not present in the project area or would not be impacted to a degree that requires detailed analysis. Resources which could be impacted to a level requiring further analysis are described in this Chapter and impacts to these resources are analyzed in Chapter 4.

3.3.1 Cultural Resources

The National Historic Preservation Act (NHPA), as amended in 1992 (16 USC 40 et. seq.), requires government agencies to take into account the effects of their actions on properties listed or eligible for listing on the National Register of Historic Places (NRHP). Cultural resources are defined as any evidence of past human activities. They include structures such as historic or prehistoric buildings, bridges, homesteads, canals, roads, or shipwrecks. They also include such things as art, stone tools, food remains, ceramics, glass items, tin cans, documents, and many other items that show how people lived, thought, and felt about the world around them (Stettler and Seddon, 2005, pp. 13). Cultural resources also include places that are important to a particular group's history and traditions. These places are often called Traditional Cultural Properties (TCPs). These types of properties can be archaeological sites, such as prehistoric campsites, rock art, burials, rock shelters, lithic scatters, and village sites. They can also be non-archaeological site types such as lakes and springs, land features, and traditional gathering or collection areas (16 U.S.C. 470, Section 101 [d] [6] [a]). In accordance with law and policy, the CBGA RMP (BLM, 1986, pp. 3-42) states that cultural resources clearances and mitigation are required prior to construction or development on all projects involving surface disturbing activities.

Iron County—located within the eastern portion of the Great Basin culture area (D'Azevedo, 1986)—holds a large and varied archeological resource, with sites reflecting occupation and use by various groups over the past 12-15,000 years, including: the big game hunters of the Paleoindian Period, the Archaic hunters and gatherers, the Fremont agriculturists, and, most recently, the Paiute hunters and gatherers. As such, Native American groups, particularly local groups, have expressed interest in land use planning in the area, especially if it involves ground disturbing activities. Although several variations exist, both regionally and across the Great Basin as a whole, Jennings (Jennings, 1986, pp. 113-119) has developed a basic cultural chronology that fits well into this particular culture area. Jennings' cultural context, described briefly below, includes the Paleoindian, Archaic, Formative, and Late Prehistoric Periods.

Paleoindian Period (Approximately 12,000 – 7000 B.P./5000 B.C.): Paleoindian peoples are thought to have focused on hunting the megafauna present at the end of the Pleistocene. The typical artifacts attributed to this period include the Clovis and Folsom fluted lanceolate projectile points and the Lake Mojave lanceolate projectile points. This stage is very sparsely represented by materials and particularly by definable sites within Iron County. The majority of finds dating to this period come from surface artifact finds (Jones and Beck, 1999, pp. 83-95), including Paleoindian projectile points found on the surface within Iron County (Copeland and Fike, 1988).

Archaic Period (5000 B.C. – A.D. 300): In the early Holocene, the megafauna became extinct and subsistence strategies adapted to the new environment. Reliance on big game hunting was replaced by a broader strategy focused on hunting and gathering of resources. Represented is a very successful transient way of life, exploiting plant and animal resources where and when they became available. The projectile points became smaller during this period, more suited for hunting smaller game, and there is an increase in the number and type of stone grinding implements used for plant and seed processing. Projectile point types are the primary chronological marker, having been found in dated, stratified contexts, and serve to divide the archaic into three phases: Early, Middle, and Late (Holmer, 1978). However some types, such as the Elko series points, are found throughout the history of the Archaic Period. Archaic sites, particularly from the middle and late periods, are relatively abundant throughout Iron County. Almost all of the Archaic sites are characterized as “scatters” of widely varying sizes and complexities, but marked by often abundant chipped stone debris from artifact production, chipped stone artifacts (atlatl dart points, scrapers, knives, drills, blades, etc.), very often ground stone (manos and metates), and occasionally hearths, alignments, and other minor features. In Iron County, there are very few caves and rockshelters, which were generally favored as occupation sites by the Archaic people.

Formative Period (A.D. 300 – 1200): Near the beginning of the first millennium A.D., horticulture was introduced and adopted in portions of the Great Basin. The exact method and time of entry of cultivated crops remains a matter of debate; however, major changes in the subsistence patterns emerged in the Great Basin over the next millennium. The Fremont culture arrives in the archaeological record during this period, with evidence of a semi-sedentary lifestyle centered on horticulture, with a continued reliance on hunting and gathering (Madsen and Simms, 1998). The material culture diversifies greatly with the contemporaneous introduction of pottery and the bow-and-arrow, with its associated smaller projectile points. Pit houses in sedentary villages indicate a substantial shift in subsistence strategy. Within Iron County, agricultural sites are clustered strongly along the streams issuing from the high country on the east (e.g., Parowan Front). There are also seasonal sites associated with exploitation of the natural resources of the western valleys and ranges.

Late Prehistoric Period (A.D. 1200 – 1826): By around A.D. 1200, an expansion of Numic-speaking peoples into the area seems to have replaced or displaced the Fremont culture (Bettinger and Baumhoff, 1982). Archaeologically, the primary material culture of the Numic are Intermountain Brownware pottery and the Desert Side notched and Cottonwood Triangular arrow points. The subsistence strategy appears to shift back to one largely focused on hunting and gathering; however, there is some evidence of at least limited reliance on horticulture. The Numic-speaking peoples, including the Ute, Shoshone and Paiute, were the occupants of the Great Basin upon the initial arrival of Europeans in 1776. Sites associated with the Paiutes, who were occupying the area at the time of white contact, become definable at about the same time as the Fremont demise. Reflected is a return to a transient lifeway supported by hunting and gathering; existing sites in Iron County often appear to be clustered around springs.

Past Findings

Over the past 30 years, there has been considerable inventory and data accumulation in Iron County resultant from wildland fire rehabilitation efforts, chainings and plowings, mineral exploration, transmission lines, roads, pipelines, and a variety of other small projects. Detailed information about the specific findings and regional systems, interactions, or communities is available in files/reports at the Cedar City Field Office. Particularly good information is available for the Mineral Mountains area where there are big obsidian sources, from the big basalt flows south and north of Crater Knoll, along the Kern River Pipeline corridor, and on several west desert burns that involved springs—as well as another big obsidian source near the Nevada border.. The big projects, particularly burns, have been the best for identifying areas of high site density and/or major sites and clusters. Results of these inventories have led to the finding that archeological sites within Iron County are not scattered evenly or randomly across the landscape. Rather, they are positioned most often so as to maximize effective access to one or more resources, primarily water.

Although Iron County is on the margin of the Plateau, it is in a Great Basin high desert regime, where water and resources are scarce and often highly localized therein serving to concentrate people—and thus sites—in certain areas. While this did not serve to keep people in an area very long or over very large areas, they did return, on some sort of recurring schedule, to more or less the same areas. The majority of the site concentrations in Iron County are low (1 to 10 sites/section) to medium density (11 to 20 sites/section). High density (21 to 30 sites/ section) and very high density (30+ sites/section) sites are not as common. Over the field office area, there are almost never high density areas that cover a full cadastral section; rather, such a density is usually projected from a cluster over a quarter section or two. It is considered that low and medium density areas are essentially leasable—with appropriate cultural safeguards and stipulations. High density areas would require close scrutiny and perhaps additional mitigation; very high density areas would likely require avoidance. While these low, medium, and high categories are presented here to provide a programmatic overview of the area, more detailed information is available and would be used on a site-specific basis to address the significance of a given site at the Application for Permit to Drill (APD) stage. Surveys would be completed at the time of APD and any cultural resources found would be avoided or mitigated.

The long used obsidian quarries at the base of the Mineral Mountains represent one of the area's important resources where large sites and areas of exceptionally high site density are present. Other concentrations are found with good waters, particularly springs, and on the big basalt flows around and north of the Crater Knoll area. Concentrations are found where there is a juxtaposition of good springs and single-leaf pinyon (although most of these are on the west side of the field office area). Of the locations in Iron County with known sites, the Parowan Gap is likely the most widely known with a very extensive and impressive, but highly localized concentration of rock art. The Paiute's ancestral homelands encompassed the Gap, and the Hopi recognize clan symbols among the various figures. The approximately 40-acre core area has been listed on the NRHP since 1975. The Tribes believe that the area needs to remain undisturbed to protect the integrity of the area and they have shown support for an ethnographic overview of the area and designation of a larger area that should be included in a historic district to preserve and protect all important cultural resources in the area, not just those encompassed by the National Register property. Past consultation with the Paiute Tribe of Utah as well as the Hopi Tribe has resulted in written documentation submitted to the BLM (December 6, 2006) requesting deferral of a core area around the Parowan Gap—beyond the existing boundary—due to the presence of TCPs and sacred sites The ethnographic overview has been undertaken to determine the extent of lands that need protection.

Overall, the inventories show that there is a substantial and important archeological resource over Iron County, including numerous sites, many of which can be tied to Archaic, Fremont, and Paiute occupations, and a little material from the earlier, big-game hunting periods (Clovis, Folsom, etc.). There are some large sites as well as some strong site clusters, but overall the hunters, gatherers, and Great Basin foragers provided a whole lot of "scatters" of various sorts. These are by far the most prevalent type of site, mainly reflecting transient hunting and gathering activities—such as short-term camps, seed processing sites, kill/butchering sites, lithic source procurement/production sites, and other task-specific sites—and including flake and tool scatters—fairly often with ground stone, occasionally with features such as hearths, and sometimes, in the later periods, with ceramics. For the most part, these "scatters" of one sort or another are mostly small and not dense with material, although the big obsidian sources have led to strong concentrations of sites in some areas, as have other localized resources. Rock art is not uncommon but is generally scattered and on a small scale (with a couple of notable exceptions). Sheltered sites (caves, rock overhangs) are not common at all, nor are major, long-term camps. Historic sites are quite limited in number, and most are located on patented land.

Aside from caves and rockshelters, as well as some special sites such as rock art locales, the great majority of sites, historic and prehistoric, exist out on the landscape, basically unprotected from time, weather, and projects. Mainly the sites exist at or near ground surface (seldom are open sites more than a few tens of centimeters deep), reflect some pattern from original use, may hold fragile features (hearths, ephemeral structures), and are most valuable for research and interpretation if context and relationships are intact. Thus, sites, in addition to being subject to erosion damage, are particularly vulnerable to surface-disturbing activities. Because oil and gas development has the possibility of creating an adverse effect to cultural resources, all leases issued subsequent to October 5, 2004 would include the Cultural Resources and Tribal Consultation for Fluid Minerals Leasing stipulation described in Section 1.4. Site specific cultural resource surveys and appropriate mitigation measures are required as part of the APD process after parcels are leased. Based on an MOU Concerning Communication and Cooperation between the Paiute Tribe, each of the five Bands that comprise the Tribe, and certain BLM offices (including Cedar City), the BLM will continue to notify the Tribe of any actions that might be of interest or concern to them. The BLM will continue consultation with the State Historic Preservation Office (SHPO) based on the protocol developed with that office.

The nominated parcels contain numerous steep slopes and previously-disturbed areas that inhibit the potential for significant cultural resources. Areas within the nominated parcels that haven't been disturbed, or are on more gentle terrain, have a low to moderate cultural resource site density, based upon topography and the types of cultural resources previously found near these areas.

3.3.2 Fish and Wildlife Excluding U.S. Fish and Wildlife Service Designated Species

Several species occur within the parcels, such as mule deer, small mammals, birds, raptors, and snakes. The documented or potential occurrence of important habitat values for fish and wildlife is shown in Table 1, below.

In general, the foothills and mountain slopes in Iron County contain shrub steppe, woodland and other habitat types that provide forage and shelter for a variety of wildlife species including the golden eagle, red-tailed hawk, gray flycatcher, juniper titmouse, scrub jay, pinyon jay, olive-sided and ash-throated flycatchers, mountain bluebird, spotted towhee, wild turkey, mule deer, pronghorn, and elk. Native fish and trout species may occur in perennial streams. The proposed lease parcels are all below 7200' elevation and are not considered high elevation.

The alluvial slopes and valley bottoms contain shrub steppe, semi-desert and desert vegetation types (salt-desert shrub vegetative community) that provide habitat for a variety of wildlife species including the American kestrel, red-tailed hawk, loggerhead shrike, horned lark, Western meadowlark, sage thrasher, Brewer's sparrow, sage sparrow, black-throated sparrow, lark sparrow, sagebrush lizard, mule deer, pronghorn, badger, coyote, black-tailed jackrabbit, and elk.

Many reptile species can also be found in this vegetation type. Shrub steppe habitat functions as crucial habitat for wintering big game herds that are forced into the valleys during the winter months. Uplands provide critical thermal and hiding cover, while the lower elevation areas provide the forage necessary to sustain the wintering herds. These areas are also important to many migratory non-game bird species.

The past 100 years of fire suppression and livestock management have altered the role of fire in the ecosystem (Wright et al., 1979; Tausch, 1981). Subsequently, there has been an increasing trend towards an expansion of the pinyon pine and juniper woodland into areas once dominated by sagebrush and grasslands (shrub steppe), and an increase in annual weeds and grasses such as cheatgrass (Miller and Rose, 1999). Many species considered obligates (e.g., Brewer's sparrow and sage sparrow) to healthy sagebrush ecosystems have experienced declines in numbers and distribution as a result of pinyon pine and juniper woodland expansion.

Riparian and wetland areas provide important forage, water, shade and cover for a variety of wildlife including elk, mule deer, wild turkey, and many species of migratory birds. Riparian and wetland areas are crucial because these sites are few in number and usually widely dispersed and most animals depend on them for all or a portion of their life cycle. Riparian habitat is used year-round by mule deer, elk and wild turkeys as forage and cover, by nongame migratory birds and waterfowl as migration and nesting habitat, and by small mammals, lizards, and amphibians as year-long habitat. Riparian areas are a crucial component of mule deer fawning habitat, as well as for many other species for nesting and reproduction. This habitat is crucial for many songbird species as it provides the food sources and resting areas necessary to sustain the birds during the spring and fall migration seasons.

The Utah Division of Wildlife Resources (UDWR) has mapped elk and mule deer crucial use areas and identified areas of crucial value habitat and areas of substantial value habitat. UDWR defines crucial value as "habitat on which the local population of a wildlife species depends for survival because there are no alternative ranges or habitats available" and "...essential to the life history requirements of a wildlife species." They further state that degradation or unavailability of crucial habitat will lead to declines in carrying capacity and/or numbers of the wildlife species in question. UDWR defines substantial value as "habitat that is used by a wildlife species but is not crucial for population survival." Unlike crucial habitat, degradation or unavailability of substantial value habitat will not lead to declines in carrying capacity and/or numbers of the wildlife species in question.

A large portion of the proposed lease parcels contain crucial winter habitat for mule deer and most of the remainder has been mapped as substantial value winter habitat. Mule deer are common throughout Utah, where they can be found in habitats ranging from open deserts to high mountains to urban areas. Mule deer often migrate from high mountainous areas in the summer to lower elevations in the winter to avoid deep snow. Mule deer crucial winter range habitat within the lease parcels includes much of the lower elevation foothill and bench habitat. Sagebrush is a key component of this winter range, providing a feed source when other plants are not available. Mule deer may start moving onto winter ranges as early as September, but typically the most critical period is December through April when the temperatures are usually the coldest and the snow the deepest. Some mule deer live year round within the project area.

Rocky Mountain elk are common in most mountainous regions of Utah, where they can be found in mountain meadows and forests during the summer and foothills and valley grasslands during the winter. Elk are also found in desert mountain ranges. Although the UDWR has not mapped priority elk habitat within the lease parcels, small numbers of elk may be found in the area throughout the year.

There is no designated crucial fawning or wintering pronghorn habitat within Iron County. This does not mean that pronghorn do not fawn or winter in Iron County, just that UDWR has not designated any priority habitat areas. Yearlong crucial habitat has been mapped immediately north of the proposed parcels and pronghorn may be found on some of the parcels throughout the year.

Raptors, including the red-tailed hawk, Cooper's hawk, sharp-shinned hawk, American kestrel, northern harrier, great horned owl, golden eagle, and a few other less common species utilize each of the habitat types within the project area and may be present year round or for certain times of the year. Nesting tends to be concentrated around cliffs, large trees, embankments, and other habitat features. Raptor management is guided by BLM's Best Management Practices for Raptors and Their Associated Habitats in Utah (2006). These are best management practices which are BLM-specific recommendations for implementation of the U.S. Fish and Wildlife Service, Utah Field Office's "*Guidelines for Raptor Protection from Human and Land Use Disturbances*" ("*Guidelines*"). The "*Guidelines*" were originally developed by the Fish and Wildlife Service in 1999, and were updated during 2002 to reflect changes brought about by court and policy decisions and to incorporate Executive Order 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds.* The "*Guidelines*" were provided to BLM and other land-managing agencies in an attempt to provide raptor management consistency, while ensuring project compatibility with the biological requirements of raptors, and encouraging an ecosystem approach to habitat management. The best management practices include timing limitations and controlled surface measures to protect raptor species.

Table 1. Potential Occurrence of Important Habitat Values within the Analyzed Parcels

Species/Habitat Value	Status	Potential Occurrence	Where/Which parcels?	Lease Stipulation or Notice Proposed	Comments
Band-tailed Pigeon Habitat	Important habitat value	Substantial value spring-early fall habitat mapped by UDWR	UT0511-005 UT0511-006 UT0511-007 UT0511-009 UT0511-010 UT0511-011	Migratory birds	
Band-tailed Pigeon Habitat	Important habitat value	Crucial value spring-early fall habitat mapped by UDWR	UT0511-005 UT0511-006 UT0511-007 UT0511-008 UT0511-009 UT0511-010 UT0511-011	Migratory birds	
Black Bear Habitat	Important habitat value	No habitat mapped by UDWR			
Elk/Calving	Important habitat value	No crucial habitat mapped by UDWR			

Species/Habitat Value	Status	Potential Occurrence	Where/Which parcels?	Lease Stipulation or Notice Proposed	Comments
Elk/Crucial Winter	Important habitat value	No crucial habitat mapped by UDWR			
Fisheries	Important habitat value	Potential habitat	UT0511-010 UT0511-011	Fisheries	Duncan Creek may contain fish species.
Golden Eagle	Eagle Protection Act	Foraging habitat, no known nest sites			The Raptor lease notice should be adequate since there are no documented nests.
Migratory Birds	Important habitat value	Habitat present	All parcels	Migratory birds	
Mule Deer/Crucial Winter	Important habitat value	Mapped by UDWR	UT0511-005 UT0511-007 UT0511-009 UT0511-010 UT0511-011	Crucial winter mule deer habitat	Apply the crucial winter mule deer habitat timing limitation and controlled surface use LNs.
Mule Deer/Fawning	Important habitat value	No crucial habitat mapped by UDWR			
Pronghorn/Crucial Habitat	Important habitat value	No crucial habitat mapped by UDWR			
Raptor Nests	Important habitat value	Documented & potential habitat	All parcels	Raptors	
Waterfowl	Important habitat value	No habitat			
Wild Turkey Habitat	Important habitat value	Crucial year long habitat mapped by UDWR	UT0511-009 UT0511-010 UT0511-011		This species would be protected by the riparian lease notice.
Wild Turkey Habitat	Important habitat value	Crucial winter habitat mapped by UDWR	UT0511-010 UT0511-011		This species would be protected by the crucial winter range lease notice.

3.3.3 Migratory Birds

The parcels contain mostly shrub steppe, pinyon pine and juniper habitat. Rocky outcrops and trees provide raptor nest sites. Duncan Creek provides riparian habitat. All of these areas provide habitat for migratory birds.

The Migratory Bird Treaty Act of 1918 protects migratory birds and their parts. Executive Order 13186, signed on January 10, 2001, directs federal agencies to evaluate the effects of actions and agency plans on migratory birds, with emphasis on species of concern. Birds of Conservation Concern (USFWS 2002) identify the migratory bird species of concern in different Bird Conservation Regions (BCRs) in the United States. The parcels are within BCR 9 (Great Basin). Species lists for BCR9 have been reviewed and the potential exists for several migratory bird species, currently designated as species of concern, to nest within the parcels, primarily between April and September.

3.3.4 Threatened, Endangered, Candidate or Sensitive Animal Species

Table 2 identifies the potential occurrence of threatened, endangered, candidate and sensitive species within the project area.

Under Section 7 of the Endangered Species Act (ESA), the BLM is required to consult with the USFWS on any proposed action which may affect federally listed threatened or endangered species or species proposed for listing. Programmatic Section 7 consultation efforts covering a wide variety of actions associated with the current BLM land use plans in Utah was completed in 2006 (BLM 2006c). Additionally, BLM and FWS personnel completed programmatic Section 7 consultation work culminating in a set of standard, species-specific lease notices for listed species in Utah. When habitat is thought to be present, these lease notices are to be attached to oil and gas leases offered in Utah. These consultation efforts resulted in a memorandum dated December 16, 2004 concurring with the BLM determination that use of the species-specific lease notices on appropriate lease parcels would result in a “may affect, but not likely to adversely affect” determination for leasing actions involving federally listed species in the state. Washington Office Instruction Memorandum No. 2002-174, Endangered Species Act Section 7 Consultation, also directs that the BLM attach an Endangered Species Act stipulation to all leases to protect threatened and endangered species. According to this stipulation, the BLM will not approve any ground-disturbing activity until obligations under applicable requirements of the ESA have been fulfilled, including completion of any required procedure for formal or informal conference or consultation.

43 CFR 3162.1(a) provides the BLM with broad authority to ensure compliance of lessees with orders of the authorized officer issued for the protection of the environment. Conservation measures (lease notices and stipulations) as discussed above increase the likelihood that the BLM and by association, the lessee, will meet the standard of “may affect, but not likely to adversely affect” for ESA-listed species. It should be noted that BLM may be required to reinitiate Section 7 consultation at the project-level, as necessary, to ensure proper management of listed species in the future. Table 2 identifies threatened, endangered, candidate and sensitive species with the potential to occur in Iron County and the presence or absence of suitable habitat for the species within the parcels.

Table 2. Potential Occurrence of Threatened, Endangered, Candidate and Sensitive Species within the Analyzed Parcels

Species/Habitat Value	Status	Potential Occurrence within Project Area	Where/Which parcels?	Lease Stipulation or Notice Proposed	Comments
American White Pelican	BLM Sensitive Species	No habitat			Species is on UDWR statewide sensitive species list but not on their Iron County list. Pelicans are known to stopover in Iron County during migrations.
Arizona Toad	BLM & UDWR Sensitive	No known occurrences			The sensitive species lease notice (LN) should be adequate.
Bald Eagle	BLM & UDWR Sensitive	Potential winter foraging habitat	All parcels	Utah sensitive species	The sensitive species lease notice (LN) should be adequate since there are no known roosts

Species/Habitat Value	Status	Potential Occurrence within Project Area	Where/Which parcels?	Lease Stipulation or Notice Proposed	Comments
Big Free-tailed Bat	BLM Sensitive	Potential habitat	All parcels	Utah sensitive species	Species is on UDWR statewide sensitive species list but not on their Iron County list. The sensitive species LN should be adequate since there are no documented sightings.
Black Swift	BLM & UDWR Sensitive	No habitat			
Bonneville Cutthroat Trout	Conservation Agreement Species	No habitat			
Brian Head Mountainsnail	UDWR Sensitive	No habitat			
Brown (Grizzly) Bear	UDWR Sensitive (threatened)	Extirpated			
Burrowing Owl	BLM & UDWR Sensitive	No known occurrences			The sensitive species LN should be adequate since there are no documented sightings.
California Condor	Endangered	Rare/foraging habitat	All parcels	Utah sensitive species	No known nests or roosts within the project area. The sensitive species LN and standard T&E stipulation should be adequate.
Common Chuckwalla	BLM & UDWR Sensitive	No habitat			
Dark Kangaroo Mouse	BLM & UDWR Sensitive	No habitat			
Ferruginous Hawk	BLM & UDWR Sensitive	Documented & within ½ mile	UT0511-006 UT0511-007 UT0511-008 UT0511-009 UT0511-010	Ferruginous hawk nest sites	Apply the Ferruginous Hawk timing limitation and controlled surface use LNs.
Fringed Myotis	BLM & UDWR Sensitive	Potential habitat	Al parcels	Utah sensitive species	The sensitive species LN should be adequate since there are no documented sightings.
Greater Sage-Grouse	Candidate	No mapped habitat			The sensitive species LN should be adequate since there is no mapped habitat within 12 miles of the project area.
Kit Fox	BLM & UDWR Sensitive	No known occurrences			The sensitive species LN should be adequate since there are no documented sightings.
Least Chub	Candidate	No known habitat			Known historical habitat is outside of project area. The Fisheries and Riparian LNs should be adequate since is no known habitat. No effect: no water depletion from HUC8.
Lewis's Woodpecker	BLM & UDWR Sensitive	Minimal potential habitat	All parcels	Utah sensitive species	The sensitive species LN should be adequate since there are no documented sightings.

Species/Habitat Value	Status	Potential Occurrence within Project Area	Where/Which parcels?	Lease Stipulation or Notice Proposed	Comments
Long-Billed Curlew	BLM & UDWR Sensitive	No known occurrences			The sensitive species LN should be adequate since there are no documented sightings.
Mexican Spotted Owl	Threatened	No habitat			
Northern Goshawk	BLM & UDWR Sensitive	Minimal potential habitat	All parcels	Utah sensitive species	The sensitive species LN should be adequate since there are no documented sightings.
Northern Leopard Frog	Petitioned	No known habitat			The sensitive species LN should be adequate since there is no known habitat.
Pygmy Rabbit	BLM & UDWR Sensitive	Within 0.5 mile of colony and historic habitat	UT0511-006 UT0511-007	Pygmy rabbit	
Short-Eared Owl	BLM & UDWR Sensitive	Potential habitat			The sensitive species LN should be adequate since there are no documented sightings.
Southern Leatherside Chub	Conservation Agreement	No known habitat			The Fisheries and Riparian LNs should be adequate since there are no documented sightings.
Southwestern Willow Flycatcher	Endangered	Potential habitat	UT0511-010 UT0511-011	T&E-07 Southwestern willow flycatcher	Potential willow flycatcher habitat occurs along Duncan Creek. The LN has been through consultation with US Fish & Wildlife Service for previous lease sales & informal consultation was conducted for this sale.
Spotted Bat	BLM & UDWR Sensitive	Potential habitat	All parcels	Utah sensitive species	The sensitive species LN should be adequate since there are no documented sightings.
Three-Toed Woodpecker	BLM & UDWR Sensitive	Minimal potential habitat	All parcels	Utah sensitive species	The sensitive species LN should be adequate since there are no documented sightings.
Townsend's Big-Eared Bat	BLM & UDWR Sensitive	Potential habitat	All parcels	Utah sensitive species	The sensitive species LN should be adequate since there are no documented sightings.
Utah Prairie Dog	Threatened	Parcels are within USFWS survey buffers	All parcels	T&E-08 Utah prairie dog	The LN has been developed through programmatic consultation with US Fish & Wildlife Service & informal consultation was conducted for this sale.
Virgin River Chub	Endangered	Does not occur in Iron County			No effect: no water depletion from HUC8.
Western Red Bat	BLM Sensitive	Potential habitat		Utah sensitive species	Species is on UDWR statewide sensitive species list but not on their Iron County list. The sensitive species LN should be adequate since there are no documented sightings.
Western Toad	BLM & UDWR Sensitive	No known habitat			No known sightings in Iron County
Western Yellow-billed Cuckoo	Candidate	No habitat			
Woundfin	Endangered	Does not occur in Iron County			No effect: no water depletion from HUC8.

Species/Habitat Value	Status	Potential Occurrence within Project Area	Where/Which parcels?	Lease Stipulation or Notice Proposed	Comments
Sensitive Wildlife Species	BLM & UDWR Sensitive	Documented & potential habitat	All parcels	Utah sensitive species	
Sensitive Plant Species	BLM Sensitive	Documented	UT0511-006	Special status plants	

Utah prairie dog

The Utah prairie dog was federally-listed as endangered in 1973 (38 FR 14678) and down-listed to threatened in 1984 (49 FR 22330). The species' range is limited to southwestern Utah and is the most restricted of all prairie dog species in the United States. Historically, Utah prairie dog colonies were found as far west as Pine and Buckskin Valleys in Iron County, and may have occurred as far north as Nephi, Utah, southeast to Bryce Canyon National Park, east to the foothills of the Aquarius Plateau, and south to the northern borders of Kane and Washington Counties. A 50 percent range reduction was estimated from 1925 to 1975, with the greatest declines occurring in the western and northern parts of the range. Factors that resulted in the historical decline of Utah prairie dogs were poisoning, drought, habitat alteration, shooting, and disease (72 FR 7843). This species is limited to seven counties in southern and central Utah, including Iron, Beaver, Garfield, Piute, Wayne, Sevier and Kane between 5,100 and 9,000 feet elevation. BLM lands, particularly within Iron County, contain some of the most important habitat of the Utah prairie dog's range.

Utah prairie dogs are typically restricted to relatively open plant communities with short-stature vegetation such as alfalfa fields and feed on a variety of grasses and forbs. Utah prairie dogs generally begin breeding in March; the young are born in April and the juveniles appear aboveground in early to mid-May. Prairie dogs are among the most social of animals and live together in large groups called colonies or towns. Most colonies are located in well-drained soils and have numerous burrows with a network of entrances. Several species are associated with or considered to be dependent on prairie dogs and their colonies and because of this they are considered to be a keystone species (Kotliar et al. 1999, Kotliar 2000). The Utah prairie dog occurs in 23 mapped complexes throughout the CCFO, representing some 16,000 acres of potential, but not necessarily suitable, habitat including areas within Iron County. The maps within the CBGA RMP identified specific lands that were known at that time to be occupied by Utah prairie dog. These lands were identified as Category 3 lands (open to leasing subject to NSO). Since that time new data has identified additional lands occupied by the Utah prairie dog, either unknown colonies at the time or new colonies that have been established by migration or translocation. The Utah prairie dog inventory areas associated with the Iron County Habitat Conservation Plan (HCP) show those areas where Utah prairie dog or their sign have been mapped since 1976, plus a buffer that encompasses an estimate of home range, disturbances distance, and mapping error (ICC and UDWR 1998).

In 2003, the FWS was petitioned to reclassify the Utah prairie dog as an endangered species under the ESA based on their decline in both numbers and sizes of populations since the early part of the 20th century. The petition stated that historic prairie dog habitat loss had occurred from brush encroachment and conversion of native ecosystems to crop agriculture and municipal development and that ongoing habitat loss and the poor quality of the remaining habitat continued to jeopardize the Utah prairie dog (Forest Guardians 2003). The petitioners asserted that a lack of suitable habitat on public lands is likely the most important factor limiting prairie dog recovery (McDonald 1993; McDonald and Bonebrake 1994; Utah Prairie Dog Recovery Implementation Team 1997).

In their finding on the petition, the FWS announced that there was not substantial scientific or commercial information available that indicated reclassification was warranted (72 FR 7843). The FWS stated that while Utah prairie dog recovery has been slow, actions taken since 1994, including research, development of new guidance documents, implementation of the 1997 Interim Conservation Strategy on Federal lands occupied by prairie dogs, and the revision of the Recovery Plan to include the conservation of prairie dog habitat on private lands, will improve the species' status over the long-term. They stated that although past translocation efforts have not always been successful, techniques and vegetation guidelines have been adapted to address the likely causes preventing success of past efforts and that 13 new complexes have been established on Federal lands within the West Desert Recovery Area as a result of these efforts. The FWS continues to monitor these efforts and update methods as necessary resulting in new recommended translocation procedures for the Utah Prairie Dog (FWS 2006, 18 pp.).

California condor

The California condor was listed as an endangered species on March 11, 1967 (32 FR 4001) and an experimental, non-essential population was designated in portions of Arizona, Nevada, and Utah in 1996 (61 FR 54043). Interstate 15 in Iron and Beaver Counties for the Cedar City Field Office forms the western boundary of the experimental population area, while I-70 forms the north boundary. California condors that occur east of I-15 are part of the experimental, nonessential population, and condors found west of I-15 are managed as an endangered species.

Historically the California condor occurred along the Pacific Coast from Baja California north to southern British Columbia, but by the 1930s only about 60 condors remained in six counties in southern California (FWS 1984). Primary causes for condor decline were lead poisoning, shooting, collisions with manmade structures, and loss of habitat. California condors are opportunistic scavengers, feeding only on the carcasses of dead animals, and are capable of flying more than 100 miles in a day in search of carrion. California condors require suitable habitat for nesting, roosting, and foraging. Nest sites are located in cavities in cliffs, in large rock outcrops, or in large trees. Traditional roosting sites include cliffs or large trees, often near feeding sites, and foraging occurs mostly in grasslands.

Approximately 90 condors have been released at two sites in northern Arizona since 1996, with about 60 surviving in the wild. Most of these birds inhabit the Colorado River drainage from the City of Page downstream to the upper end of Lake Mead, but several condors venture into Utah on a regular basis. Most of the condor excursions to Utah are to Kane, Garfield, and Washington Counties, but visits to Iron County have increased. A large segment of the reintroduced population spends the summer in Utah, and has been observed roosting just south of Iron County near Kolob Reservoir. Individuals are known to periodically forage throughout the southern portions of Iron County; however, no known roost or nest sites are known at this time.

Southwestern willow flycatcher

The southwest willow flycatcher was listed as an endangered species in 1995 (70 FR 60885). The breeding range of southwestern willow flycatcher includes southern California, southern Nevada, southern Utah, Arizona, New Mexico, western Texas, and northern Baja California, Mexico. The current range for this species in Utah includes all of Washington, Kane, and San Juan Counties, southern Iron County, and most of Garfield, Wayne, Emery, and Grand Counties (FWS 2003).

Southwestern willow flycatchers are insectivores that forage on the wing above and within riparian vegetation. These birds breed in dense riparian habitats along rivers, streams, or other wetlands and near surface water or saturated soils (Sogge et al. 1993). The southwestern willow flycatcher breeding season is from late May to early August. Egg laying occurs from late May to late June, while fledging occurs from late June to early August. Preferred southwestern willow flycatcher nesting habitat consists of dense willows, 10 to 22 feet in height, often with an overstory of cottonwood or other native broadleaf trees, with a very dense foliage structure in the lower 6 feet (Sogge et al. 1997). In areas lacking dense stands of willow habitat, southwestern willow flycatchers use dense stands of exotic saltcedar or Russian olive, 12 to 30 feet in height, or mixed stands of saltcedar, Russian olive, willow, and cottonwoods. Riparian patches used by breeding willow flycatchers vary in size from approximately one acre to several hundred acres, while patch shapes vary from broad to linear, but they have not been documented nesting in linear riparian habitats less than 30 feet in width (Sogge et al. 1997).

Presently, the only documented nesting sites in Utah occur in Washington County (70 FR 60885). Willow flycatchers have been documented nesting in southern Iron County, although the sub species determination is unknown. There is potential habitat for the species along Duncan Creek.

Sensitive Animal Species

BLM manages sensitive species in accordance with BLM Manual 6840 with the objective to initiate proactive conservation measures that reduce or eliminate threats to these species to minimize the likelihood of and need for listing of these species under the ESA. Special status species are, collectively, the federally listed or proposed and Bureau sensitive species, which include both Federal candidate species and delisted species within 5 years of delisting. There are 57 BLM Utah sensitive species, including 12 species under conservation agreement and 4 candidate species. Of these, 26 species occur or potentially occur within the Cedar City Field Office. There are also 26 State of Utah listed sensitive species identified as occurring or potentially occurring within Iron County. The Utah sensitive species lists also includes federally listed species. CCFO has used available data sources to determine if potential lease parcels fall within known habitat for BLM or UDWR sensitive species.

Table 2 lists the potential occurrence of BLM and Utah sensitive species within the analyzed parcels.

Some species and their habitat are not known to occur within the parcels. These species will not be discussed in detail in this EA; however the protection of possible habitat types used by these species will be discussed for other species more likely to occur within the area and thus potential impacts would be the same for these and other species likely to use similar habitats.

Species protections, such as important seasonal timing restrictions and riparian buffers, are important in minimizing impacts to sensitive species. To comply with BLM policy 6840 for Utah BLM Sensitive Species, lease notices are attached to appropriate parcels when sensitive species or important, associated habitats are known to occur within the immediate area. The sensitive species that occur within the parcels are primarily found within one of three main habitat types:

sagebrush grasslands, forested/woodland habitat, and riparian areas/flowing streams. The sensitive wildlife species are briefly discussed below in the context of the habitat type in which they would occur.

Sagebrush and Grassland Habitat

Sagebrush and grasslands comprise a large portion of the habitat present on the analyzed parcels at the lower elevations. The sensitive species of concern that occur within this habitat type include pygmy rabbit and ferruginous hawk. Other species that may be found in this habitat type have not been documented within the analyzed parcels, or are not known to occur in this area. They would be protected under the general sensitive species lease notice if future surveys indicate a need for protection.

Pygmy rabbit are found in the western, primarily northwestern, United States (UDWR, 2008b). The pygmy rabbit has been petition for listing as threatened or endangered under the ESA (70 FR 29253). In September 2010, the USFWS concluded that the pygmy rabbit does not warrant protection under the ESA; however, the BLM and State of Utah still consider them a sensitive species.

This species has experienced severe population declines throughout the Great Basin and adjacent intermountain areas (Janson, 2002; Flinders, 1999). These declines have primarily occurred due to anthropogenic disturbances (e.g., habitat fragmentation, increased fire frequency, overgrazing) currently impacting the sagebrush-steppe habitat type (Heady and Laundré, 2005). The species can be found in northern and western Utah, where it prefers areas with tall, dense sagebrush and loose soils. Pygmy rabbit primarily eat sagebrush, but their diet also consists of other vegetation. Much of the habitat in the Cedar City area had been altered and reduced, and recreation, housing development, and other human uses were encroaching on much of what remained (Janson, 2002). The habitat in Iron County is somewhat atypical for this species in that patches of tall sagebrush on sites with deep soils where this species is usually found are limited; however, these habitats are known to occur on BLM-managed lands within Iron County and pygmy rabbits are found in a few sagebrush areas in Iron County.

Parcels UT0511-006 and 007 are either within 0.5 mile of a known pygmy rabbit colony or are within historic habitat, generating the need for the pygmy rabbit lease notice.

Ferruginous hawks generally nest in lone juniper trees or trees near the edge of a stand adjacent to sagebrush areas. They may also nest on the ground. They generally feed in the sagebrush grassland habitat type. They are present within the area year round. Ferruginous hawks would be managed using the Best Management Practices for Raptors and Their Associated Habitats in Utah (2006) and the *"Guidelines*". Ferruginous hawks have been documented nesting on or near parcels UT0511-006, 007, 008, 009 and 010. The ferruginous hawk lease notice that would be applied to these parcels incorporates the BLM best management practices.

Bald eagles, delisted by the USFWS in 2007, have been documented as occurring within Iron County. These individuals are migratory and generally use the area during the winter months. However, a pair did nest in the County in 2007. Although no longer protected under ESA, bald eagles remain protected under the Bald Eagle Protection Act of 1940 (16 USC 668-668d, 54 Stat. 250) and BLM Special Status Species policy. Potential bald eagle winter foraging habitat is found within all of the parcels.

Forested/Woodland Habitat

There are five BLM-sensitive bat and three bird species (Northern goshawk, three-toed wood pecker and Lewis's woodpecker) with the potential to occur in forested/woodland habitat within all of the parcels. The bat species—big free-tailed bat, Townsend's big-eared bat, spotted bat, fringed myotis and Western red bat—occur in a wide variety of habitats ranging from the forested/woodland to desert habitat, but rely heavily on areas with caves, mines, rock crevices, or trees where they can roost. The highest quality habitat contains nesting and roosting locations, as well as foraging areas such as riparian or open water habitat.

As mentioned in the above section, ferruginous hawks may also use woodland habitat.

Riparian Areas/Flowing Streams

Duncan Creek flows through parcels UT0511-010 and 011. It is a perennial stream with developed riparian habitat. This habitat is important to all wildlife species due to the limited amount of free water and riparian areas within the parcels. There are no known occurrences of sensitive species such as fish and toads in or along Duncan Creek. However the potential exists since inventories are not complete or current. The sensitive species, fisheries and riparian lease notices would all be applied to these parcels and would provide protection for these species as well as other wildlife species that use this important habitat type.

3.3.5 Threatened, Endangered, Candidate or Sensitive Plant Species

There are no threatened, endangered, or candidate plant species within the Field Office. One sensitive species, *Penstemon pinorum*, has been documented on parcel UT0511-006.

4.0 ENVIRONMENTAL IMPACTS

4.1 Introduction

This chapter discusses the environmental consequences of implementing the alternatives described in Chapter 2. Under NEPA, actions with the potential to affect the quality of the human environment must be disclosed and analyzed in terms of direct and indirect effects—whether beneficial or adverse and short or long term—as well as cumulative effects. Direct effects are caused by an action and occur at the same time and place as the action. Indirect effects are caused by an action and occur later or farther away from the resource but are still reasonably foreseeable. Beneficial effects are those that involve a positive change in the condition or appearance of a resource or a change that moves the resource toward a desired condition. Adverse effects involve a change that moves the resource away from a desired condition or detracts from its appearance or condition. Cumulative effects are the effects on the environment that result from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions.

The No Action alternative (offer none of the nominated parcels for sale), serves as a baseline against which to evaluate the environmental consequences of the Proposed Action alternative (defer four of the nominated parcels and offer seven of the parcels for sale with additional resource protective measures). For each alternative, the environmental effects are analyzed for the resource topics that were carried forward for analysis in Chapter 3.

4.2 General Analysis Assumptions and Guidelines

Leasing is an administrative action that affects economic conditions but does not directly cause environmental consequences. However, leasing is considered to be an irretrievable commitment of resources because the BLM generally cannot deny all surface use of a lease unless the lease is issued with a No Surface Occupancy stipulation. Potential oil and gas exploration and production activities, committed to in a lease sale, could impact resources and uses in the planning area. Direct, indirect or cumulative effects to resources and uses could result from as yet undetermined and uncertain future levels of lease exploration or development. In order to provide a basis for analysis, the RFD scenario is applied to each of the alternatives analyzed in detail. The RFD scenario is a long term projection of oil and gas exploration, development, production, and reclamation activity in a defined area for a specified period of time and serves as an analytical baseline for identifying and quantifying direct, indirect, and cumulative effects of oil and gas activity, under standard lease terms and conditions, on all potentially productive areas open to oil and gas and leasing, and forms the foundation for the analysis of the effects of oil and gas management decisions.

In general, the BLM USO conducts a quarterly competitive lease sale to sell available oil and gas lease parcels in the state. In the process of preparing a lease sale the BLM USO compiles a list of lands nominated and legally available for leasing, and sends a draft parcel list the appropriate District Office where the parcels are located. District and field office staff then review and verify that the parcels are in areas open to leasing; that any new information that has become available, or any circumstances that have changed, are assessed to determine what level of analysis is required; that appropriate stipulations and notices can been included; that appropriate consultations have been conducted, when necessary; and that any special resource conditions are identified for potential bidders. The field office then either determines that existing analyses provide an adequate basis for leasing recommendations or that additional NEPA analysis is needed before making a leasing recommendation. In most instances an environmental analysis (EA) will be initiated for the parcels within the district or field office to meet the requirements of WO IM 2010-117. After the EA complete a list of available lease parcels and stipulations is made available as part of the analysis and it is made available to the public for a 30-day public comment period on the BLM webpage. After analyzing and incorporating all comments received during the public comment period, any changes to the document and/or lease list parcels are made if necessary. The document is made available again for the protest period (30 days). The protest period ends 60 days before the scheduled lease sale and, a list of available lease parcels and stipulations is made available to the public through a Notice of Competitive Lease Sale (NCLS). Lease stipulations and notices applicable to each parcel are specified in the sale notice.

It is unknown when, where, or if future well sites or roads might be proposed on any leased parcel. Although no site-specific activities are specified, analysis of projected surface disturbance impacts, should a lease be developed, was estimated based on the RFD in the supplemental EA for Oil and Gas Leasing, Cedar City District, prepared in 1988 (BLM, 1988). If leases are offered, purchased and issued, typical subsequent developments may include the construction of drill below. Detailed site specific analysis of individual wells or roads would occur when a lease holder submits an APD. This EA would be used to determine the necessary administrative actions, stipulations, lease notices, special conditions, or restrictions that would be made a part of an actual lease at the time of issuance. Under all alternatives, continued interdisciplinary support and consideration would be required to ensure on the ground implementation of planning objectives, including the proper implementation of stipulations, lease notices and Best Management Practices (BMPs) through the APD process.

Standard lease terms provide for reasonable measures to minimize adverse impacts to specific resource values, land uses, or users (Standard Lease Terms are contained in Form 3100-11, Offer to Lease and Lease for Oil and Gas, U.S. Department of the Interior, BLM, June 1988 or later edition). Although once the lease has been issued, the lessee has the right to use as much of the leased land as necessary to explore for, drill for, extract, remove, and dispose of oil and gas deposits located under the leased lands, operations must be conducted in a manner that avoids unnecessary or undue degradation of the environment and minimizes adverse impacts to the land, air, water, cultural, biological, and visual elements of the environment, as well as other land uses or users. Compliance with valid, nondiscretionary statutes (laws) is included in the standard lease terms and would apply to all lands and operations that are part of all of the alternatives. Nondiscretionary actions include the BLM's requirements under federal environmental protection laws, such as the Clean Water Act, Clean Air Act, ESA, NHPA, and FLPMA, which are applicable to all actions on federal lands even though they are not reflected in the oil and gas stipulations in the RMP and would be applied to all potential leases regardless of their category. Also included in all leases are the two mandatory stipulations for the statutory protection of cultural resources (BLM Washington Office Instruction Memorandum No. 2005-03, Cultural Resources and Tribal Consultation for Fluid Minerals Leasing) and threatened or endangered species (BLM Washington Office Instruction Memorandum No. 2002-174, Endangered Species Act Section 7 Consultation). BLM would also encourage industry to consider participating in EPA's Natural Gas STAR program under all alternatives. The program is a flexible, voluntary partnership between EPA and the oil and natural gas industry wherein EPA works with companies that produce, process, transmit and distribute natural gas to identify and promote the implementation of cost-effective technologies and practices to reduce emissions of methane, a greenhouse gas.

For purposes of the effects analysis, the RFD and the primary construction, operations, and abandonment elements described below would be similar for the Proposed Action and No Action alternatives.

4.2.1 Reasonably Foreseeable Development

As described above, the RFD scenario serves as an analytical baseline for identifying and quantifying direct, indirect, and cumulative effects of oil and gas activity and forms the foundation for the analysis of the effects of oil and gas management decisions in planning and environmental documents. The EAR, RMP, Supplemental EA, and Programmatic EA (BLM 1976; BLM 1986; BLM 1988; BLM 2009) describe in detail fluid minerals leasing and operations and RFD scenarios for Iron County. In those analyses it was estimated based on past drilling history that exploratory wells would continue to be drilled at the rate of about three wells per year for the foreseeable future. It was further estimated that the drilling targets would continue to be primarily anticlinal structures in the eastern part of the district where quantities were anticipated to be low. Between 1988 and 2006, five oil and gas exploration wells were drilled on public lands in Beaver and Iron Counties disturbing about 12 acres. The current rate of drilling, extent of disturbance, and magnitude of impacts are within the projection made in the Supplemental EA. A much smaller number of wells and surface disturbance has occurred since completion of that analysis. None of the wells were economically productive, and no oil and gas field developments have occurred. Consequently, the impact analysis is appropriate and within the range of those described in the Supplemental EA. If there is a discovery, the RFD scenario would change in which case additional NEPA analysis would be required.

For the purposes of this analysis, the main assumption is that the RFD over a 10-year period would be 30 exploratory wells (3 wells/year × 10 years), with a 180-acre disturbance from well sites (2 to 6 acres/well × 30 wells = 180 acres maximum) and a 150-acre disturbance from access roads (40 feet maximum road width disturbed × average of 1 mile access road length = 5 acres × 30 wells = 150 acres maximum) for a total disturbance of 330 acres (180 acres from well sites and 150 acres from access roads). These assumptions were determined to be reasonable because only about 12 acres have been disturbed in the Cedar City District from 1988 to 2006 from fluid mineral leasing activity, representing a much smaller number of wells and surface disturbance than anticipated in the Supplemental EA analysis. Thus the impacts of leasing under the alternatives analyzed in this EA are not expected to surpass or differ significantly from the effects analyzed previously; therefore the RFD scenario is still reasonable based on the actual level of activity that has occurred since planning which is well within the projected scenario.

4.2.2 Well Pad and Road Construction

Equipment for well pad construction would consist of dozers, scrapers, and graders. Topsoil from each well pad would be stripped to a depth of six inches and stockpiled for future reclamation. The topsoil would be seeded with native species of plants and left in place for the life of the well, then used during the final reclamation process. Disturbance for each well pad would be estimated at an area of approximately 350 feet by 250 feet (~2 acres of land), including topsoil piles. For this analysis, it was assumed that disturbance for well pads could be as high as 6 acres per well to account for any infrastructure (e.g., gas pipelines) that would be required if the wells were to go into production (see below). Disturbed land would be seeded with a mixture (certified weed free) and rate as recommended or required by the BLM.

Depending on the locations of the proposed wells it is anticipated that some new or upgraded access roads would be required to access well pads and maintain production facilities. Construction of new roads or upgrades to existing roads would require a 30-foot wide right of way (ROW) and would be constructed of native material. Any new roads constructed for the purposes of oil and gas development would be utilized year-round for maintenance of the proposed wells and other facilities, and for the transportation of fluids and/or equipment, and would remain open to other land users. The type of equipment required for these activities would be the same as that needed for well pad construction. After completion of road construction activities, the 30-foot wide ROW would be reclaimed to an 18-foot wide crowned running surface as well as drainage ditches. It is not possible to determine the distance of road that would be required because the location of the wells would not be known until the APD stage. However, for purposes of analyses it is assumed that disturbance from access roads would be similar to development in other areas (~5 acres of disturbance).

4.2.3 Production Operations

If wells were to go into production, facilities would be located at the well pad and typically include a well head, a dehydrator/separator unit, and storage tanks for produced fluids. The production facility would typically consist of two storage tanks, a truck load-out, separator, and dehydrator facilities. Construction of the production facility would be located on the well pad and not result in any additional surface disturbance.

All permanent surface structures would be painted a flat, non-reflective color (e.g., juniper green) specified by the BLM in order to blend with the colors of the surrounding natural environment. Facilities that are required to comply with the Occupational Safety and Health Act (OSHA) will be excluded from painting color requirements. All surface facilities would be painted immediately after installation and under the direction and approval of the BLM.

If oil is produced, the oil would be stored on location in tanks and transported by truck to a refinery. The volume of tanker truck traffic for oil production would be dependent upon production of the wells, however, it is estimated oil would be transported to a Salt Lake City refinery at least once a week, using 280-barrel tanker trucks.

If natural gas is produced, construction of a gas sales pipeline would be necessary to transport the gas. An additional Sundry Notice, right of way (ROW) and NEPA analysis would be completed, as needed, for any pipelines and/or other production facilities across public lands. BLM BMPs, such as burying the pipeline or installing the pipeline within the road ROW, would be considered at the time of the proposal.

All operations would be conducted following the “Gold Book” Surface Operating Standards for Oil and Gas Exploration and Development. The Gold Book was developed to assist operators by providing information on the requirements for conducting environmentally responsible oil and gas operations on federal lands. The Gold Book provides operators with a combination of guidance and standards for ensuring compliance with agency policies and operating requirements, such as those found at 43 CFR 3000 and 36 CFR 228 Subpart E; Onshore Oil and Gas Orders (Onshore Orders); and Notices to Lessees. Included in the Gold Book are environmental BMPs; these measures are designed to provide for safe and efficient operations while minimizing undesirable impacts to the environment.

Exploration and development on split-estate lands is also addressed in the Gold Book, along with IM 2003-131, Permitting Oil and Gas on Split-estate Lands and Guidance for Onshore Oil and Gas Order No. 1, and IM 2007-165, Split-estate Report to Congress – Implementation of Fluid Mineral Leasing and Land Use Planning Recommendations. Proper planning and consultation, along with the proactive incorporation of these BMPs into the APD Surface Use Plan of Operations (SUPO) by the operator, will typically result in a more efficient APD and environmental review process, increased operating efficiency, reduced long-term operating costs, reduced final reclamation needs, and less impact to the environment.

4.2.4 Produced Water Handling

Water is often associated with either produced oil or natural gas. Water is separated out of the production stream and can be temporarily stored in the reserve pit for 90 days. Permanent disposal options include surface discharge pits or underground injection. Handling of produced water is addressed in Onshore Oil and Gas Order No. 7.

4.2.5 Maintenance Operations

Traffic volumes during production would be dependent upon whether the wells produced natural gas and/or oil, and for the latter, the volume of oil produced.

Well maintenance operations may include periodic use of work-over rigs and heavy trucks for hauling equipment to the producing well, and would include inspections of the well by a pumper on a regular basis or by remote sensing. The road and the well pad would be maintained for reasonable access and working conditions. Portions of the well pad not needed for production of the proposed well, including the reserve pit, would be recontoured and reclaimed, as an interim reclamation of the site per the SUPO.

4.2.6 Plugging and Abandonment

If the wells do not produce economic quantities of oil or gas, or when it is no longer commercially productive, the well would be plugged and abandoned. The wells would be plugged and abandoned following procedures approved by a BLM Petroleum Engineer, which would include requiring cement plugs at strategic positions in the well bore. All fluids in the reserve pit would be allowed to dry prior to reclamation work. After fluids have evaporated from the reserve pit, sub-soil would be backfilled and compacted within 90 days. If the fluids within the reserve pit have not evaporated within 90 days (weather permitting or within one evaporation cycle i.e. one summer), the fluid would be pumped from the pit and disposed of in accordance with applicable regulations. The well pad would be recontoured, and topsoil would be replaced, scarified, and seeded within 180 days of the plugging the well.

4.3 Issues Carried Forward for Analysis

4.3.1 Alternative A – Proposed Action

This section analyzes the impacts of the proposed action to those potentially impacting resources described in the affected environment Chapter 3, above.

4.3.1.1 Cultural Resources

Cultural resources on the nominated parcels would not be directly impacted by the issuance of leases. However, the issuance of leases does convey an expectation that drilling and development could occur. Indirect impacts to cultural resources could result from future lease actions, such as exploration or operational activities.

Each issued lease would contain a mandatory stipulation for the statutory protection of cultural resources (BLM Washington Office Instruction Memorandum No. 2005-03), which would be enforced through any future authorization to conduct exploration or operational activities under the lease. Potential impacts relating to future authorizations would be mitigated through avoidance whenever possible. Due to the expected site type and site density, reasonable development could occur on these parcels without effect to historic properties. To assure appropriate consideration of future effects from the lease sale, the BLM would add the following “lease stipulation” (WO-IM-2005-003), to all parcels offered for lease.

“This lease may be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E.O. 13007, or other statues and executive orders. The BLM will not approve any ground disturbing activities that may affect any such properties or resources until it completes its obligations under applicable requirements of the NHPA and other authorities. The BLM may require modification to exploration, or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated.”

4.3.1.2 Fish and Wildlife Excluding Threatened, Endangered, Candidate and Sensitive Species

The issuance of leases would not directly impact fish and wildlife resources on the nominated parcels. However, the issuance of leases does convey an expectation that drilling and development could occur. Table 1 in Chapter 3 identifies species and habitats which could be potentially impacted through future actions on leased parcels. Indirect impacts to fish and wildlife resources could result from future lease actions, such as exploration or operational activities.

Application of the appropriate species-specific lease notices would be adequate for the leasing stage to disclose potential restrictions against future authorizations. Appropriate lease stipulations and notices have been included within the Proposed Action to protect habitat values (see Appendix A). Project-specific impacts relating to future authorizations cannot be analyzed until an exploration or development application is received.

4.3.1.3 Migratory Birds

The issuance of leases would not directly impact migratory birds on the nominated parcels. However, the issuance of leases does convey an expectation that drilling and development could occur. Table 1 in Chapter 3 identifies that migratory birds occur on all parcels and could be potentially impacted through future actions on leased parcels. Indirect impacts to migratory birds could result from future lease actions, such as exploration or operational activities.

Application of the migratory bird lease notice would be adequate for the leasing stage to disclose potential restrictions against future authorizations. Appropriate lease stipulations and notices have been included within the Proposed Action to protect habitat values (see Appendix A). Project-specific impacts relating to future authorizations cannot be analyzed until an exploration or development application is received.

4.3.1.4 Threatened, Endangered, Candidate or Sensitive Animal Species

The issuance of leases would not directly impact threatened, endangered, candidate or sensitive animal species on the nominated parcels. However, the issuance of leases does convey an expectation that drilling and development could occur. Tables 1 and 2 in Chapter 3 identify species and habitats which could be potentially impacted through future actions on leased parcels. Indirect impacts to these resources could result from future lease actions, such as exploration or operational activities.

Application of the appropriate species-specific lease notices would be adequate for the leasing stage to disclose potential restrictions against future authorizations. Appropriate lease stipulations and notices have been included within the Proposed Action to protect habitat values (see Appendix A). Project-specific impacts relating to future authorizations cannot be analyzed until an exploration or development application is received.

In accordance with WO IM No. 2002-174, the following Endangered Species Act (ESA) related stipulation will be applied to all parcels:

"The lease may now and hereafter contain plants, animals, and their habitats determined to be threatened, endangered, or other special status species. BLM may recommend modifications to exploration and development proposals to further its conservation and management objectives to avoid BLM approved activity that will contribute to a need to list such a species or their habitat. BLM may require modification to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. BLM will not approve any ground-disturbing activity that may affect any such species or critical habitat until it completes its obligation under requirements of the Endangered Species Act as

amended, 16 U. S. C. § 1531 et seq. including completion of any required procedure for conference or consultation."

4.3.1.5 Threatened, Endangered, Candidate or Sensitive Plant Species

As stated in Chapter 3, there are no threatened, endangered or candidate plant species within the field office. The issuance of leases would not directly impact sensitive plant species on the nominated parcels. However, the issuance of leases does convey an expectation that drilling and development could occur. Table 2 in Chapter 3 identifies species and habitats which could be potentially impacted through future actions on leased parcels. Indirect impacts to these resources could result from future lease actions, such as exploration or operational activities.

Application of the appropriate lease notice would be adequate for the leasing stage to disclose potential restrictions against future authorizations. Appropriate lease stipulations and notices have been included within the Proposed Action to protect habitat values (see Appendix A). Particularly, the Special Status Plants: Not Federally Listed lease notice should be applied to protect the *Penstemon pinorum* habitat documented to occur on parcel UT0511-006. Project-specific impacts relating to future authorizations cannot be analyzed until an exploration or development application is received.

4.3.2 Alternative B – No Action

This alternative (not to offer any of the nominated parcels for sale) would not meet the need for the proposed action. The sale of oil and gas leases is needed to meet the growing energy needs of the United States. Furthermore, it is a stated objective of the CBGA RMP (BLM, 1986) to maximize the leasing opportunity for oil and gas exploration and development while adequately protecting sensitive resources. With the exception of a portion of parcel UT0511-011, the CBGA RMP categorizes the areas incorporated by the nominated parcels as open to leasing with the application of standard leasing stipulations.

4.3.2.1 Cultural Resources

The No Action alternative would prevent future potential impacts relating to lease operations. Although drilling and production activities on federal land surfaces are restricted to leased parcels, oil and gas exploration may also be authorized on unleased public lands, on a case-by-case basis, pursuant to 43 CFR 3150.0-1. Accordingly, this alternative would not prevent direct, indirect or cumulative environmental impacts relating to oil and gas exploration activities through denial of the proposed action. Additionally, this alternative would not prevent indirect impacts relating to rights of way authorizations to support oil and gas operations on adjacent leased parcels.

4.3.2.2 Fish and Wildlife Excluding Threatened, Endangered, Candidate and Sensitive Species

The No Action alternative would prevent future potential impacts relating to lease operations. Although drilling and production activities on federal land surfaces are restricted to leased parcels, oil and gas geophysical exploration operations may also be authorized on unleased public lands, on a case-by-case basis, pursuant to 43 CFR 3150.0-1. Accordingly, this alternative would not prevent direct, indirect or cumulative environmental impacts relating to oil and gas exploration activities through denial of the proposed action. Additionally, this alternative would not prevent indirect impacts relating to rights of way authorizations to support oil and gas operations on adjacent leased parcels.

4.3.2.3 Migratory Birds

The No Action alternative would prevent future potential impacts relating to lease operations. Although drilling and production activities on federal land surfaces are restricted to leased parcels, oil and gas exploration may also be authorized on unleased public lands, on a case-by-case basis, pursuant to 43 CFR 3150.0-1. Accordingly, this alternative would not prevent direct, indirect or cumulative environmental impacts relating to oil and gas exploration activities through denial of the proposed action. Additionally, this alternative would not prevent indirect impacts relating to rights of way authorizations to support oil and gas operations on adjacent leased parcels.

4.3.2.4 Threatened, Endangered, Candidate or Sensitive Animal Species

The No Action alternative would prevent future potential impacts relating to lease operations. Although drilling and production activities on federal land surfaces are restricted to leased parcels, oil and gas exploration may also be authorized on unleased public lands, on a case-by-case basis, pursuant to 43 CFR 3150.0-1. Accordingly, this alternative would not prevent direct, indirect or cumulative environmental impacts relating to oil and gas exploration activities through denial of the proposed action. Additionally, this alternative would not prevent indirect impacts relating to rights of way authorizations to support oil and gas operations on adjacent leased parcels.

4.3.2.5 Threatened, Endangered, Candidate or Sensitive Plant Species

The No Action alternative would prevent future potential impacts relating to lease operations. Although drilling and production activities on federal land surfaces are restricted to leased parcels, oil and gas exploration may also be authorized on unleased public lands, on a case-by-case basis, pursuant to 43 CFR 3150.0-1. Accordingly, this alternative would not prevent direct, indirect or cumulative environmental impacts relating to oil and gas exploration activities through denial of the proposed action. Additionally, this alternative would not prevent indirect impacts relating to rights of way authorizations to support oil and gas operations on adjacent leased parcels.

4.4 Cumulative Impacts Analysis

A cumulative impact is defined in CEQ regulations (40 CFR §1508.7) as "the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions." Cumulative impacts can result from individually minor but collectively major actions taking place over a period of time. The *Supplemental EA for Oil and Gas Leasing in the Cedar City District* (BLM, 1988) developed an RFD scenario and analyzed the cumulative impacts of oil and gas leasing based on that scenario. That analysis is incorporated by reference herein.

Past and present actions and reasonably foreseeable future actions with the potential to contribute to cumulative effects are discussed below followed by an analysis of cumulative effects. A variety of activities, such as sightseeing, biking, camping, and hunting, have occurred and are likely to continue to occur within the nominated parcels; these activities likely result in negligible impacts to resources because of their dispersed nature. Other activities, such as livestock grazing, vegetation projects, and wildland fire, have also occurred within the nominated parcels and are likely to occur in the future. These types of activities are likely to have a greater impact on resources in the project area because of their more concentrated nature. Because these activities are occurring within the nominated parcel boundaries, they have the potential to contribute to cumulative effects. All resource values addressed in Chapter 3 have been evaluated for cumulative effects. If, through the implementation of mitigation measures or project design features, no net effect to a particular resource results from an action, then no cumulative effects result. Therefore, resources that were not carried forward for analysis, such as wetlands / riparian zones (see Section 1.8), are not considered in this analysis, since the Proposed Action alternative would not result in effects to those resources.

4.4.1 Past and Present Actions

The Cumulative Impact Area (CIA) for the resources analyzed in this EA is the BLM-managed lands and subsurface resources within the nominated parcel boundaries. Past and/or ongoing activities in the CIA that could combine to produce cumulative impacts include oil and gas exploration and development, livestock grazing and rangeland improvements, recreational activities (particularly off-highway vehicle use), natural and prescribed fire, fire rehabilitation efforts and other vegetation treatments, invasive species/noxious weed control, and increased private land development (e.g., subdivision construction activities).

Based on the past drilling history, it is estimated that exploratory wells would continue to be drilled in the district at the rate of about three wells per year for the foreseeable future. Drilling targets would continue to be primarily anticlinal structures in the eastern part of the district. Quantities are anticipated to be low; no oil and gas fields have been discovered in Iron County and wildcat wells drilled in the past have not resulted in any usable discoveries. The current rate of drilling, extent of disturbance and magnitude of impacts are within the projection made in the Supplemental EA (BLM, 1998). In fact, the number of wells and the amount of surface disturbance that has occurred since completion of that analysis is less than predicted. Between 1988 and 2006, three oil and gas exploration wells were drilled on public lands in the Cedar City Field Office resulting in disturbance of about 12 acres, and no oil or gas production has resulted. Consequently impacts should be within the range of those described in the Supplemental EA.

Livestock grazing is currently a permitted use of public lands within the CIA and although some minor changes may be expected over the next few years, it is reasonable to expect that livestock grazing would continue to occur on public lands. Grazing in the area could impact vegetation and soils near water sources and other areas where livestock congregate and could affect wildlife habitat.

Recreation within the CIA is generally dispersed with more concentrated use occurring in other areas in the region outside of the Cedar City Field Office. Population growth in the area has increased the amount of recreation use occurring and at the same time has displaced some recreational users who enjoy dispersed activities to more remote areas. Use of the area by off-highway vehicle (OHV) recreationists has the potential to disturb soil and vegetation and affect wildlife habitat. OHV use that deviates from designated trails on a routine basis has the tendency to remove vegetation and cause rutting and localized compaction and erosion of soils.

Noxious weed treatments as well as other vegetation treatment projects may occur within the nominated parcels and result in short term ground disturbance. There is currently a NEPA effort in process to treat fire and fuels within the wildland urban interface area on or near parcels UT0511-007, UT0511-009, UT0511-010, and UT0511-011 (Duncan Creek Interface Project, DOI-BLM-UT-CO10-2010-0063-EA).

Surface disturbance associated with oil and gas development could combine with vegetation removal and ground disturbance related to livestock grazing, OHV use, and vegetation treatment projects to result in cumulative effects. Impacts from these and other uses could be locally substantial but overall they affect a small portion of the lands within the CIA. Soil disturbing activities from energy exploration and these other activities could reduce or remove the natural components that stabilize desert soils and increase soil loss through water and wind erosion. Eolian dust mobilized from wind erosion of arid-land soils generally contains high concentration of base cations, and the dust typically has high concentrations of nitrogen and phosphorous as well as elevated concentrations of a range of atmospheric pollutants (Neff et al., 2008). The increase in these inputs to ecosystems could have implications for surface-water alkalinity, aquatic productivity and terrestrial nutrient cycling (Neff et al., 2008). Best management practices would be implemented during ground disturbing activities to minimize the amount of dust generated.

There is also the potential for cumulative effects to wildlife and their habitat from these activities. Livestock grazing could reduce the amount of forage available for wildlife and could contribute to the proliferation of non-native weeds (such as cheatgrass) that out-compete native plants and provide inadequate nutrition for prairie dogs and other species. Domestic livestock grazing could also result in shrub encroachment (and subsequent loss of nutritious forbs and grasses) and alteration of fire ecology. Grazing activity in pygmy rabbit habitat could alter the composition, function and structure of habitats required by this species. Vegetation treatments that target the mature and old growth sagebrush required by the pygmy rabbit could lead to fragmentation of habitat for this species. Impacts to wildlife could also occur where OHV use denudes soil and creates gullies. OHV use could affect Utah prairie dogs through loss of habitat, proliferation of noxious weeds, and direct disturbance of individuals, resulting in interruption of above-ground foraging and other life-sustaining activities. Impacts to wildlife from the actions proposed in this analysis would be reduced by best management practices and measures implemented for their protection.

4.4.2 Reasonably Foreseeable Action Scenario (RFAS)

Many of the same actions and activities identified above as past and present actions would continue to affect the analysis area in the future and comprise the RFAS. Diffuse impacts from recreation use, livestock grazing, and other uses would continue into the future as described above. Some potential future land treatments in the CIA could help to off-set the impacts from these uses. For example, noxious weed treatment would continue and would improve rangeland health.

Private lands in rural areas are being subdivided and sold for residential housing developments or commercial ventures as the area’s population grows. Commercial and residential development is occurring on split-estate lands.

4.4.4 Cumulative Impact Analysis

Increased surface disturbance relating to future potential operational authorizations relating to the Proposed Action alternative (leasing seven nominated parcels with recommended protective measures) would impact cultural resources, soils, native vegetation, and wildlife habitat and increase the risk of noxious weed invasion and spread, which in turn could exacerbate the frequency and intensity of wildland fire. It is anticipated that the additional resource protection measures associated with the Proposed Action would reduce the impacts to specific resources and areas within the CIA. The minimal amount of disturbance associated with the expected level of development in the CIA, in combination with Gold Book standard operating practices, best management practices, and additional measures that would minimize development impacts, would result in a negligible cumulative impact on the resources within the CIA.

5.0 CONSULTATION AND COORDINATION

5.1 Introduction

The issue identification section of Chapter 1 identifies those issues analyzed in detail in Chapter 4. The Interdisciplinary Team Checklist provides the rationale for issues that were considered but not analyzed further. The issues were identified through the public and agency involvement process described in sections 5.2 and 5.3 below.

5.2 Persons, Groups, and Agencies Consulted

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
U.S. Fish & Wildlife Service (US FWS)	Information on Consultation, under Section 7 of the Endangered Species Act (16 USC 1531)	Formal consultation was completed statewide in Dec. 14, 2004 for all species in CCFO except for Canada Lynx and California Condor. Formal consultation for Canada Lynx was completed in April 2007 and consultation for California Condor was completed in June 2008. Informal consultation was completed on 12/9/2010.
Utah State Historic Preservation Office (SHPO)	Consultation for undertakings, as required by the National Historic Preservation Act (NHPA) (16 USC 470)	No cultural resources would be affected. Consultation with the SHPO has been completed. The SHPO concurred with BLM's determination of "No Historic Properties Affected" in a letter dated December 27, 2010.
Paiute Indian Tribe of Utah and Hopi Tribe	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and NHPA (16 USC 1531)	Archaeologist and American Indian Consultant, Nathan Thomas and Fluid Minerals Geologist, Chris Hite met with Dorena Martineau, Cultural Resources Representative for the Paiute Tribe of Utah on December 1, 2010 at the Paiute Tribal Headquarters in Cedar City, Utah. At this time, the May 2011 Oil & Gas Lease Sale, including 11 parcels within BLM-administered lands in Iron County and Beaver County was discussed with Ms. Martineau. The BLM provided detailed maps (2) of the lease sale parcels in Iron County and in Beaver County. A list of the parcels was also provided to Ms. Martineau. She stated that they "have viewed and talked over parcels 1 – 11 and we are in agreement." Consultation with the Hopi Tribe was

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
		initiated with phone calls. A letter was sent to the Hopi tribe on December 16, 2010 and included a copy of the Class I literature search and a project description with maps. BLM received a response letter from the Hopi Tribe dated December 27, 2010. The Hopi concurred with BLM's determination of "No Historic Properties Affected" as appropriate for this proposed lease sale.
Utah Division of Wildlife Resources	Coordination with UDWR as the agency with expertise on wildlife species.	Information regarding wildlife species, provided by UDWR on December 13, 2010, was incorporated into Chapters 3 and 4.
US Forest Service	Consult as USFS as a leasing program partner.	USFS responded by letter on November 23, 2010 and identified no concerns.

5.3 Summary of Public Participation

On November 15, 2010, the public was notified of the proposed action by posting on the Utah BLM Environmental Notification Bulletin Board (https://www.blm.gov/ut/enbb). The process used to involve the public also included a 30-day public review and comment period for the EA and unsigned FONSI from December 17, 2010 to January 21, 2011. In addition to the ENBB, the EA and unsigned FONSI were posted on the BLM Utah's Oil and Gas Lease Sale webpage (http://www.blm.gov/ut/st/en/prog/energy/oil_and_gas/oil_and_gas_lease.html).

5.3.1 Comment Analysis

No comments were received during the public review and comment period from December 17, 2010 to January 21, 2011.

5.4 Modifications Based on Internal Review

The public and internal review identified necessary corrections or clarifications to this EA. These modifications include:

1. Corrections to grammar, sentence structure, and formatting were made throughout the EA to add clarity. In general, these changes were made without further explanation. Examples include: updates to the Table of Contents, reorganization of tables, and moving some text around within the document.
2. Section 2.4, Alternatives Considered but Not Carried Forward, was added to clarify why all eleven of the nominated parcels were not carried forward for analysis or consideration for inclusion in the May 2011 Oil and Gas Lease Sale.
3. Edits were made to Section 3.3.2 to focus the discussion more on the project area instead of Iron County in general. Species were added or deleted from the section as needed to be in conformance with the section heading.
4. Table 1 was edited to remove USFWS designated species and sensitive species and to add focus on fish and wildlife habitats within the project area. Additional habitat values were added to document that UDWR game species habitat layers were reviewed.

5. Table 2 was edited for conformance with Table 1 and updated to include species on the updated lists from USFWS and BLM. The updates occurred after the draft EA was released.
6. Edits were made to Section 3.3.4 to add information specific to the project area.
7. The Sensitive Animal Species discussion in Section 3.3.4 was updated and information on general wildlife species was moved to section 3.3.2.
8. Table 3 was removed because much of the information was redundant with Table 2 and with the discussion paragraphs.
9. The ESA stipulation was removed from Section 4.3.1.5 because it was not applicable.
10. Captions were added to the maps in Appendix B, in order to clarify which of the original eleven nominated parcels were analyzed for the May 2011 Oil and Gas Lease Sale and which were deferred pending revision of the CBGA RMP.

5.5 List of Preparers

5.5.1 BLM

Name	Office	Title	Responsible for the Following Section(s) of this Document
Chris Hite	CCFO	Geologist	Project Lead, Environmental Justice; Geology/Mineral Resources/Energy Production,; Paleontology; Socio-Economics; Wastes (hazardous or solid)
Gina Ginouves	CCFO	Planning Coordinator	NEPA document structure
Craig Egerton	CCFO	Natural Resource Specialist	Air Quality; Greenhouse Gas Emissions; Farmlands (Prime or Unique); Floodplains; Hydrologic Conditions; Water Resources/Quality (drinking/surface/ground); Woodland/Forestry
Elizabeth Burghard	CCFO	Assistant Field Office Manager Renewable Resources	Areas of Critical Environmental Concern; BLM Natural Areas; Recreation; Wild and Scenic Rivers; Wilderness/WSA; Visual Resources; Areas with Wilderness Characteristics
Nathan Thomas	CCFO	Archaeologist	Cultural Resources; Native American Religious Concerns
Rebecca Bonebrake	CCFO	Wildlife Biologist	Fish and Wildlife Excluding Threatened, Endangered, Candidate and Sensitive Species; Migratory Birds; Threatened, Endangered, Candidate or Sensitive Animal Species; Threatened, Endangered, Candidate or Sensitive Plant Species
Vicki Tyler	CCFO	Natural Resource Specialist	Fuels/Fire Management
Jessica Bulloch	CCFO	Range Technician	Invasive Species/Noxious Weeds
Rob Wilson	CCFO	Realty Specialist	Lands/Access
Dan Fletcher	CCFO	Rangeland Management Specialist	Livestock Grazing; Rangeland Health Standards; Vegetation Excluding Threatened, Endangered, Candidate and Sensitive Species

Name	Office	Title	Responsible for the Following Section(s) of this Document
Kevin Wright	CCFO	Rangeland Management Specialist	Wetlands/Riparian Zones
Chad Hunter	CCFO	Rangeland Management Specialist	Wild Horses and Burros

6.0 REFERENCES, GLOSSARY AND ACRONYMS

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6.2 List of Acronyms

APD	Application for Permit to Drill
BLM	Bureau of Land Management
BMP	Best Management Practice
BCR	Bird Conservation Region
CBGA RMP	Cedar Beaver Garfield Antimony Resource Management Plan; BLM 1984
CCFO	Cedar City Field Office
CFR	Code of Federal Regulations
CIA	Cumulative Impact Area
CWCS	Comprehensive Wildlife Conservation Strategy
DR	Decision Record
EA	Environmental Assessment
EAR	Environmental Analysis Record
EIS	Environmental Impact Statement
ENBB	Environmental Notification Bulletin Board
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FLPMA	Federal Land Policy and Management Act of 1976
FONSI	Finding of No Significant Impact
FR	Federal Register
FWS	United States Fish and Wildlife Service
IDPR	Interdisciplinary Parcel Review
IM	Instruction Memorandum
LN	Lease Notice
NCLS	Notice of Competitive Lease Sale
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Act
RFAS	Reasonably Foreseeable Action Scenario
RFD	Reasonably Foreseeable Development
ROD	Record of Decision
ROW	Right of Way
SHPO	State Historic Preservation Office
SUPO	Surface Use Plan of Operations
TCP	Traditional Cultural Property
UDWR	Utah Division of Wildlife Resources
US FWS	United States Fish & Wildlife Service
USC	United States Code
USO	Utah State Office
WO	Washington Office

APPENDICES

APPENDIX A, MAY 2011 PRELIMINARY OIL AND GAS LEASE SALE LIST
APPENDIX B, MAP OF PARCELS
APPENDIX C, INTERDISCIPLINARY TEAM CHECKLIST

APPENDIX A
MAY 2011 PRELIMINARY OIL AND GAS LEASE SALE LIST

UTU0511-005
T. 35 S., R. 12 W., Salt Lake
Sec. 29: SWNW, W2SW excluding patented mining claims;
Sec. 30: Lots 4, 11-16, SESW, SE;
Sec. 31: Lots 1-4, NE, E2W2, N2NESE, NWSE, N2SWSE excluding patented mining claims.
935.65 Acres
Iron County, Utah
Cedar City Field Office

Lease Notices
UT-LN-01: Crucial Winter Mule Deer and Elk Habitat
UT-LN-40: Raptors
UT-LN-42: Migratory Birds
UT-LN-46: Utah Sensitive Species
UT-LN-52: Water and Watershed Protection
UT-LN-56: Erodible Soils and Steep Slopes
UT-LN-57: Steep Slopes
T&E-08: Utah Prairie Dog

UTU0511-006
T. 36 S., R. 13 W., Salt Lake
Sec. 1: Lot 5, N2NW, SWNW excluding patented mining claims;
Sec. 2: Lots 1-3, S2NE, SENW excluding patented mining claims;
Sec. 5: Lots 2-4, SWNE, S2NW, SW, W2SE;
Sec. 6: All;
Sec. 7: Lot 1-4, NE, E2W2.
1,770.3711 Acres
Iron County, Utah
Cedar City Field Office

Lease Notices
UT-LN-35: Ferruginous Hawk Nest Sites
UT-LN-40: Raptors
UT-LN-42: Migratory Birds
UT-LN-43: Pygmy Rabbit
UT-LN-46: Utah Sensitive Species
UT-LN-48: Special Status Plants: Not Federally Listed
UT-LN-52: Water and Watershed Protection
UT-LN-56: Erodible Soils and Steep Slopes
UT-LN-57: Steep Slopes
T&E-08: Utah Prairie Dog

UTU0511-007
T. 36 S., R. 13 W., Salt Lake
Sec. 10: E2SE;
Sec. 11: S2;
Secs. 12, 13 and 14: All;
Sec. 15: SE.
2,573.11 Acres
Iron County, Utah
Cedar City Field Office

Lease Notices
UT-LN-01: Crucial Winter Mule Deer and Elk Habitat
UT-LN-35: Ferruginous Hawk Nest Sites
UT-LN-40: Raptors
UT-LN-42: Migratory Birds
UT-LN-43: Pygmy Rabbit
UT-LN-46: Utah Sensitive Species
UT-LN-52: Water and Watershed Protection
UT-LN-56: Erodible Soils and Steep Slopes
UT-LN-57: Steep Slopes
T&E-08: Utah Prairie Dog

UTU0511-008
T. 36 S., R. 13 W., Salt Lake
Sec. 18: Lot 4;
Sec. 19: Lots 1-5, 8, 9, 11, E2NW;
Sec. 30: Lots 1, 3-5, 9-11;
Sec. 31: Lots1-10, SWSE.
853.45 Acres
Iron County, Utah
Cedar City Field Office

Lease Notices
UT-LN-35: Ferruginous Hawk Nest Sites
UT-LN-40: Raptors
UT-LN-42: Migratory Birds
UT-LN-46: Utah Sensitive Species
UT-LN-52: Water and Watershed Protection
UT-LN-56: Erodible Soils and Steep Slopes
UT-LN-57: Steep Slopes
T&E-08: Utah Prairie Dog

UTU0511-009
T. 36 S., R. 13 W., Salt Lake
Secs. 21, 22 and 23: All.
1,957.15 Acres
Iron County, Utah
Cedar City Field Office

Lease Notices

UT-LN-01:	Crucial Winter Mule Deer and Elk Habitat
UT-LN-35:	Ferruginous Hawk Nest Sites
UT-LN-40:	Raptors
UT-LN-42:	Migratory Birds
UT-LN-46:	Utah Sensitive Species
UT-LN-52:	Water and Watershed Protection
UT-LN-56:	Erodible Soils and Steep Slopes
UT-LN-57:	Steep Slopes
T&E-08:	Utah Prairie Dog

UTU0511-010
T. 36 S., R. 13 W., Salt Lake
Sec. 24: All;
Sec. 25: Lot 1-2, W2NE, NW;
Sec. 26: All;
Sec. 27: Lots 1-4, N2N2, E2SW, N2SE, SWSE.
2,144.44 Acres
Iron County, Utah
Cedar City Field Office

Lease Notices

UT-LN-01:	Crucial Winter Mule Deer and Elk Habitat
UT-LN-35:	Ferruginous Hawk Nest Sites
UT-LN-40:	Raptors
UT-LN-42:	Migratory Birds
UT-LN-44:	Fisheries
UT-LN-46:	Utah Sensitive Species
UT-LN-50:	Riparian Areas
UT-LN-52:	Water and Watershed Protection
UT-LN-56:	Erodible Soils and Steep Slopes
UT-LN-57:	Steep Slopes
T&E-07:	Southwestern Willow Flycatcher
T&E-08:	Utah Prairie Dog

UTU0511-011

T. 36 S., R 13 W., Salt Lake

Sec. 28: Lots 1-8, N2NE;
Sec. 33: Lots 2-9, S2SE;
Sec. 34: S2NE, SESW, SE;
Sec. 35: All.

1,768.22 Acres
Iron County, Utah
Cedar City Field Office

Stipulation

UT-SO-145:	Controlled Surface Use - Riparian Habitat

Lease Notices

UT-LN-01:	Crucial Winter Mule Deer and Elk Habitat
UT-LN-35:	Ferruginous Hawk Nest Sites
UT-LN-40:	Raptors
UT-LN-42:	Migratory Birds
UT-LN-44:	Fisheries
UT-LN-46:	Utah Sensitive Species
UT-LN-50:	Riparian Areas
UT-LN-52:	Water and Watershed Protection
UT-LN-56:	Erodible Soils and Steep Slopes
UT-LN-57:	Steep Slopes
T&E-07:	Southwestern Willow Flycatcher
T&E-08:	Utah Prairie Dog

Stipulation and Lease Notice Summary

Number	UTAH'S STIPULATION
UT-SO-145	**CONTROLLED SURFACE USE – RIPARIAN HABITAT** No occupancy or other surface disturbance will be allowed within 400 feet of the water body. **Exception:** None **Modification:** This distance may be modified when specifically approved in writing by the authorized officer of the BLM. **Waiver:** None

Number	UTAH'S LEASE NOTICES
UT-LN-01	**CRUCIAL WINTER MULE DEER AND ELK HABITAT** The lessee/operator is given notice that this lease has been identified as containing crucial winter mule deer and elk habitat. No surface use or otherwise disruptive activity allowed from November 1 through May 15 within identified crucial winter mule deer and/or elk habitat. Modifications to the Surface Use Plan of Operations may be required in accordance with section 6 of the lease terms and 43CFR3101.1-2.
UT-LN-35	**FERRUGINOUS HAWK NEST SITES** The lessee/operator is given notice that this lease has been identified as containing ferruginous hawk nest sites. No surface use or otherwise disruptive activity allowed from March 1 through August 1 which would disrupt ferruginous hawk breeding activities within 0.5 mile of an occupied nest. No surface use or otherwise disruptive activity would be allowed which would result in an aboveground facility within 0.5 mile of known ferruginous hawk nests, which have been active within the past 3 years. Modifications to the Surface Use Plan of Operations may be required in accordance with section 6 of the lease terms and 43CFR3101.1-2.
UT-LN-40	**RAPTORS** The lessee/operator is given notice that this lease has been identified as containing raptor habitat. Surveys will be required whenever surface disturbances and/or occupancy is proposed in association with fluid mineral exploration and development within potential raptor nesting areas. Field surveys will be conducted as determined by the authorized officer of the Bureau of Land Management. Based on the result of the field survey, the authorized officer will determine appropriate buffers and timing limitations. Modifications to the Surface Use Plan of Operations may be required in accordance with section 6 of the lease terms and 43CFR3101.1-2.
UT-LN-42	**MIGRATORY BIRD** The lessee/operator is given notice that surveys for nesting migratory birds may be required during migratory bird breeding season whenever surface disturbances and/or occupancy is proposed in association with fluid mineral exploration and development within priority habitats. Surveys should focus on identified priority bird species in Utah. Field surveys will be conducted as determined by the authorized officer of the Bureau of Land Management. Based on the result of the field survey, the authorized officer will determine appropriate buffers and timing limitations. This notice may be waived, excepted, or modified by the authorized officer if either the resource values change or the lessee/operator demonstrates that adverse impacts can be mitigated.

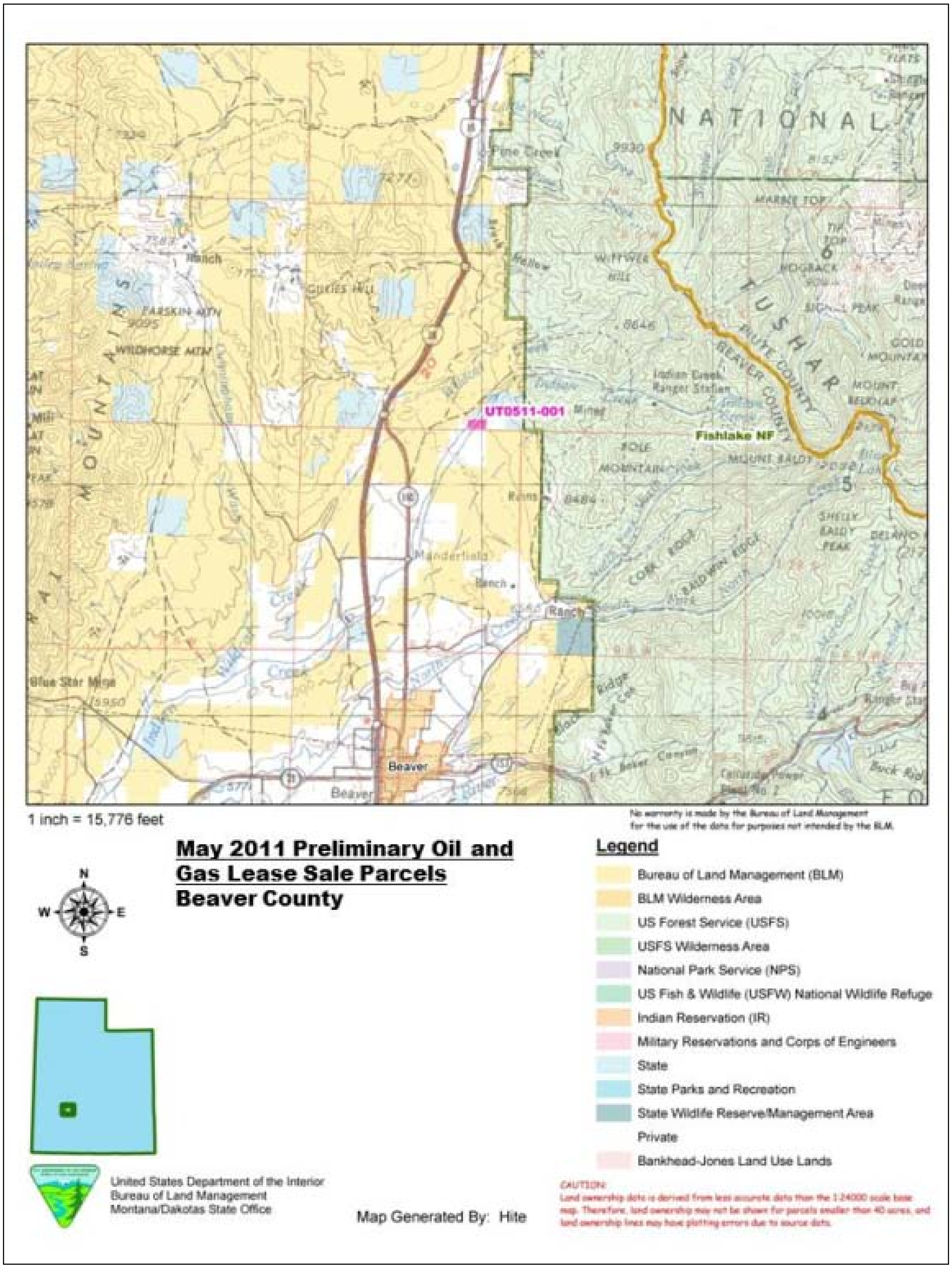
Number	UTAH'S LEASE NOTICES
UT-LN-43	**PYGMY RABBIT** The lessee/operator is given notice that this lease has been identified as containing pygmy rabbit habitat. No surface use or otherwise disruptive activity allowed which would result in an aboveground facility or semi-permanent (e.g., roads, pipelines, reservoirs, etc.) within 300 feet of pygmy rabbit habitat. Modifications to the Surface Use Plan of Operations may be required in accordance with section 6 of the lease terms and 43CFR3101.1-2.
UT-LN-44	**FISHERIES** The lessee/operator is given notice that this lease has been identified as containing fisheries habitat. No surface use or otherwise disruptive activity allowed within 400 feet of live water or the reservoirs located in the Beaver and Sevier River drainages, Parowan and Cedar Valley drainages, or Pinto Creek/Newcastle Reservoir drainage in order to prevent fisheries degradation.
UT-LN-46	**UTAH SENSITIVE SPECIES** The lessee/operator is given notice that no surface use or otherwise disruptive activity would be allowed that would result in direct disturbance to populations or individual special status plant and animal species, including those listed on the BLM sensitive species list and the Utah sensitive species list. The lessee/operator is also given notice that lands in this parcel have been identified as containing potential habitat for species on the Utah Sensitive Species List. Modifications to the Surface Use Plan of Operations may be required in order to protect these resources from surface disturbing activities in accordance with Section 6 of the lease terms, Endangered Species Act, Migratory Bird Treaty Act and 43 CFR 3101.1-2.
UT-LN-48	**SPECIAL STATUS PLANTS: NOT FEDERALLY LISTED** The lessee/operator is given notice that lands in this lease have been identified as containing special status plants, not federally listed, and their habitats. Modifications to the Surface Use Plan of Operations may be required in order to protect the special status plants and/or habitat from surface disturbing activities in accordance with Section 6 of the lease terms, Endangered Species Act, and 43 CFR 3101.1-2.
UT-LN-50	**RIPARIAN AREAS** The lessee/operator is given notice that this lease has been identified as containing riparian areas. No surface use or otherwise disruptive activity allowed within 100 meters of riparian areas unless it can be shown that (1) there is no practicable alternative; (2) that all long-term impacts are fully mitigated; or (3) that the construction is an enhancement to the riparian areas. Modifications to the Surface Use Plan of Operations may be required in accordance with section 6 of the lease terms and 43CFR3101.1-2.
UT-LN-52	**WATER AND WATERSHED PROTECTION** The lessee/operator is given notice that this lease may need modifications to the Surface Use Plan of Operations in order to prevent water pollution and protect municipal and non-municipal watershed areas. No surface use or otherwise disruptive activity allowed within 500 feet of live water or the reservoirs located in the Beaver, Milford and Sevier River drainages, Parowan and Cedar Valley drainages, or Pinto Creek/Newcastle Reservoir drainage in order to prevent water quality degradation in accordance with section 6 of the lease terms and 43CFR3101.1-2.

Number	UTAH'S LEASE NOTICES
UT-LN-56	**ERODIBLE SOILS AND STEEP SLOPES** The lessee/operator is given notice that the area is a municipal or non-municipal watershed and has steep slopes and erosive soils. New roads will be constructed to avoid soils that are highly erosive and / or in critical or severe erosion conditions. New roads will be constructed with water bars. Riprap may be required. Road grades in excess of 8 percent will normally not be allowed. In special circumstances, where a road grade of more than 10 percent is allowed, its maximum length will be 1,000 feet. Access grading along with exploration, drilling, construction, or other activities will be prohibited during wet or muddy conditions (usually during spring runoff and summer monsoon rains). Based on the result of the field survey, the authorized officer will determine appropriate buffers and timing limitations. Modifications to the Surface Use Plan of Operations may be required in accordance with section 6 of the lease terms and 43CFR3101.1-2.
UT-LN-57	**STEEP SLOPES** The lessee/operator is given notice that this lease has been identified as containing steep slopes. No surface use or otherwise disruptive activity allowed on slopes in excess of 30 percent without written permission from the Authorized Officer. Modifications to the Surface Use Plan of Operations may be required in accordance with section 6 of the lease terms and 43CFR3101.1-2.

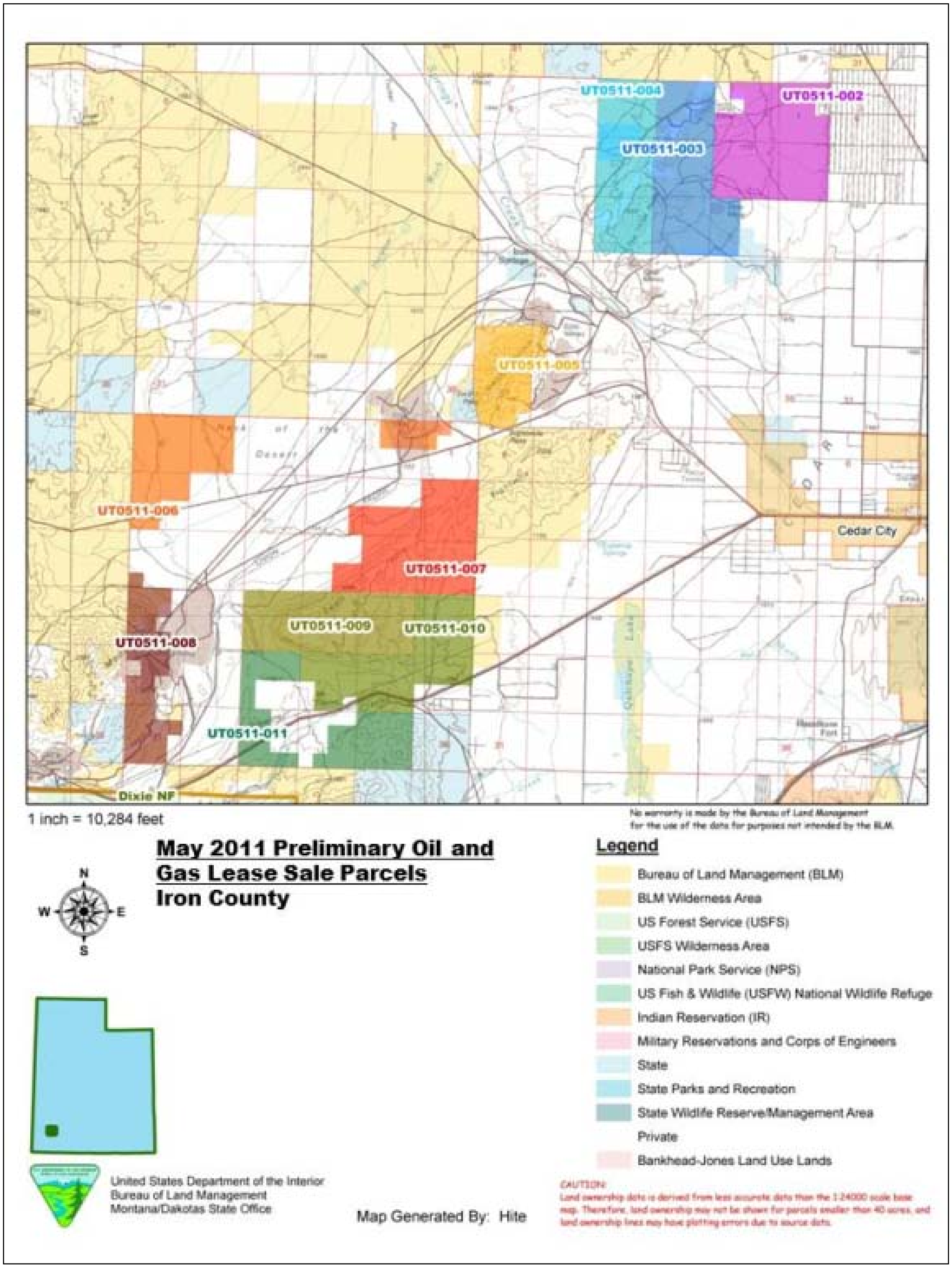
Number	UTAH'S LEASE NOTICES
T&E-07	**SOUTHWESTERN WILLOW FLYCATCHER** The Lessee/Operator is given notice that the lands in this parcel contains riparian habitat that falls within the range for southwestern willow flycatcher, a federally listed species. Avoidance or use restrictions may be placed on portions of the lease. Application of appropriate measures will depend whether the action is temporary or permanent, and whether it occurs within or outside the nesting season. A <u>temporary</u> action is completed prior to the following breeding season leaving no permanent structures and resulting in no permanent habitat loss. A <u>permanent</u> action continues for more than one breeding season and/or causes a loss of habitat or displaces flycatchers through disturbances, i.e. creation of a permanent structure. The following avoidance and minimization measures have been designed to ensure activities carried out on the lease are in compliance with the Endangered Species Act. Integration of, and adherence to these measures, will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of Endangered Species Act, Section 7 consultation at the permit stage. Current avoidance and minimization measures include the following: 1. Surveys will be required prior to operations unless species occupancy and distribution information is complete and available. All Surveys must be conducted by qualified individual(s), and be conducted according to protocol. 2. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated. 3. Water production will be managed to ensure maintenance or enhancement of riparian habitat. 4. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in suitable riparian habitat. Ensure that such directional drilling does not intercept or degrade alluvial aquifers. 5. Drilling activities will maintain a 300 ft. Buffer from suitable riparian habitat year long. 6. Drilling activities within 0.25 mile of occupied breeding habitat will not occur during the breeding season of May 1 to August 15. 7. Ensure that water extraction or disposal practices do not result in change of hydrologic regime that would result in loss or degradation of riparian habitat. **8.** Re-vegetate with native species all areas of surface disturbance within riparian areas and/or adjacent uplands. Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the U.S. Fish and Wildlife Service between the lease sale stage and lease development stage to ensure continued compliance with the ESA.

Number	UTAH’S LEASE NOTICES
T&E-08	**UTAH PRAIRIE DOG** The lessee/operator is given notice that lands in this lease may contain historic and/or occupied Utah prairie dog habitat, a threatened species under the Endangered Species Act. Avoidance or use restrictions may be placed on portions of the lease. Application of appropriate measures will depend whether the action is temporary or permanent, and whether it occurs when prairie dogs are active or hibernating. A <u>temporary</u> action is completed prior to the following active season leaving no permanent structures and resulting in no permanent habitat loss. A <u>permanent</u> action continues for more than one activity/hibernation season and/or causes a loss of Utah prairie dog habitat or displaces prairie dogs through disturbances, i.e. creation of a permanent structure. The following avoidance and minimization measures have been designed to ensure activities carried out on the lease are in compliance with the Endangered Species Act. Integration of, and adherence to these measures will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of Endangered Species Act, Section 7 consultation at the permit stage. Current avoidance and minimization measures include the following: 1. Surveys will be required prior to operations unless species occupancy and distribution information is complete and available. All Surveys must be conducted by qualified individual(s). 2. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated. 3. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in prairie dog habitat. 4. Surface occupancy or other surface disturbing activity will be avoided within 0.5 mile of active prairie dog colonies. 5. Permanent surface disturbance or facilities will be avoided within 0.5 mile of potentially suitable, unoccupied prairie dog habitat, identified and mapped by Utah Division of Wildlife Resources since 1976. 6. The lessee/operator should consider if fencing infrastructure on well pad, e.g., drill pads, tank batteries, and compressors, would be needed to protect equipment from burrowing activities. In addition, the operator should consider if future surface disturbing activities would be required at the site. 7. Within occupied habitat, set a 25 mph speed limit on operator-created and maintained roads. 8. Limit disturbances to and within suitable habitat by staying on designated routes. 9. Limit new access routes created by the project. Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the U.S. Fish and Wildlife Service between the lease sale stage and lease development stage to ensure continued compliance with the ESA.

APPENDIX B, MAPS OF PARCELS



Map 1. Nominated parcel UT0511-001, Beaver County. Deferred pending revision to the CBGA RMP.



Map 2. Nominated parcels UT0511-002 through 011, Iron County. Parcels UT0511-002 through 004 deferred pending revision to the CBGA RMP. Parcels UT0511-005 through 011 analyzed for inclusion in the May 2011 Oil and Gas Lease Sale.

APPENDIX C, INTERDISCIPLINARY TEAM CHECKLIST

Project Title: May 2011 Oil and Gas Lease Sale

NEPA Log Number: DOI-BLM-UT-9100-2011-0001-EA

File/Serial Number: N/A

Project Leader: Chris Hite

DETERMINATION OF STAFF:

NP = not present in the area impacted by the proposed or alternative actions
NI = present, but not affected to a degree that detailed analysis is required
PI = present with potential for relevant impact that need to be analyzed in detail in the EA
NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

Determi-nation	Resource	Rationale for Determination	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
NI	Air Quality	Iron county is in attainment of the National Ambient Air Quality Standards (NAAQS) for all pollutants. Currently air quality in the area of the proposed leases meets State Department of Environmental Quality and the Division of Air Quality Standards. Leasing, per se, these parcels would have no impact on air quality. However, there is some expectation that drilling and development could occur. Any ground disturbing activity would have to first be authorized as a lease operation but only through additional NEPA analysis. Given the low level of activity anticipated, only minimal emissions would be expected and effects to air quality would be expected to be negligible. See also EA #UT-040-08-036, Oil and Gas Leasing in the Eastern Portion of the Cedar City Field Office.	C. Egerton	11/26/10
NP	Areas of Critical Environmental Concern	None within Field Office boundaries.	E. Burghard	12/09/10
NP	BLM Natural Areas	None within Field Office boundaries.	E. Burghard	12/09/10
PI/NI (NI based upon rationale)	Cultural Resources	A Class I literature search and cultural resource analysis was completed for the proposed lease sale. The proposed lease sale contains numerous steep slopes and previous disturbance that inhibit the potential for significant cultural resources. The areas of the lease sale that haven't been disturbed or are on more gentle terrain have a low to moderate cultural resource site density. This is based on the topography and what types of cultural resources have been previously found near these areas. Due to the expected site type and site density, it has been determined that reasonable development could occur on these parcels without effect to historic properties. The Utah Protocol Part VII.A.B. was applied to the cultural resource review for the May 2010 Oil and Gas Lease Sale. The CCFO determination, under the Utah Protocol review threshold at Part VII. A. C(4), is: "No Historic Properties Affected." The State Historic Preservation Office (SHPO) concurred with BLM's determination of "No Historic Properties Affected" in a letter dated December 27, 2010.	N. Thomas	12/10/10

Determi-nation	Resource	Rationale for Determination	Signature	Date
NI	Greenhouse Gas Emissions	Ongoing research has identified the potential effects of “greenhouse gas” (ghg) emissions (including CO2, methane, nitrous oxide, water vapor and several trace gasses) on global climate. The leasing of these parcels would have no impact on greenhouse gas. However, there is some (low) expectation that drilling and development could occur. Any ground disturbing activity would have to first be authorized as a lease operation but only through additional NEPA analysis. At that point, carbon emissions due to well pad and road construction, earth-moving, drilling, etc. as well as any other emissions would be discussed in relation to global warming.	C. Egerton	11/26/10
NI	Environmental Justice	Leasing the nominated parcels would not cause any disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, or Native American Tribes.	C. Hite	12/04/10
NP	Farmlands (Prime or Unique)	While there may be some soils in the area capable of becoming prime or unique farmlands if supplemented with irrigation water. Since no irrigation water is supplied, no prime or unique farmlands are present.	C. Egerton	11/26/10
PI/NI (NI based upon rationale)	Fish and Wildlife Excluding USFWS Designated Species	Several species occur within the proposed parcels such as big game, non-game and fish. Application of the appropriate species specific lease notices (see EA for list) would be adequate for the leasing stage and change the PI to an NI. Site specific impacts cannot be analyzed until an exploration or development application is received.	R. Bonebrake	12/08/10
PI / NI (NI based upon rationale)	Floodplains	The act of leasing, per se, would not affect floodplains. However, there is some (low) expectation that drilling and development could occur, at which time additional NEPA would be conducted. An examination of Iron County and FEMA floodplain mapping revealed no 100 year floodplains on the parcels proposed for leasing. In Iron County, Duncan Creek is not mapped as a 100 year floodplain, though it should be considered a “lesser” floodplain (e.g. damaging floods occur, on average, less than every 100 years). Resource Protection Measures (RPMs) were developed in the EA for Oil and Gas Leasing in the Eastern Portion of the Cedar City Field Office for various resources. If **parcels 10 or 11** are leased, Duncan Creek’s floodplain values would be adequately protected through application of the RPMs as lease notices for Water and Watershed Protection. Those RPMs for riparian areas, Southwestern Willow Flycatcher, etc., may also apply. This proposal has been reviewed against Executive Order 11988 and has been found to comply. Application of RPMs to the named parcels as lease notices would provide the protection necessary to change and this determination from a “PI” to an “NI”.	C. Egerton	11/29/10

Determi-nation	Resource	Rationale for Determination	Signature	Date
NI	Fuels/Fire Management	Lease of these parcels will not impact fuels/fire management within the Color Country Resource Area. There is currently a NEPA effort in process to treat fire and fuels within the wildland urban interface area on or near Parcels UT0511-007, UT0511-009, UT0511-010, and UT0511-011 (Duncan Creek Interface Project – DOI-BLM-UT-CO10-2010-0063-EA). There is the potential with these leased parcels, ground disturbing operations may occur in the future. Any activity that involves surface disturbance or direct resource impacts will have to be authorized as a lease operation through future NEPA analysis, on a case-by-case basis. BLM may invest significant resources (mechanical treatments, seeding, etc.) to alter fire and fuels on these parcels as part of the Duncan Creek Interface project. Should these mineral lease operations occur on these parcels, conditions of approval for re-vegetation would need to be considered at that time.	V. Tyler	11/22/10
NI	Geology / Mineral Resources/Energy Production	Active placer and lode mining claims occur on parcel UT0511-008. No mineral materials site authorizations occur within any of the nominated parcels. No geothermal leases occur within any of the nominated parcels. Any conflicts between fluid mineral operations and other mineral operations would be resolved at the time of any application related to fluid mineral exploration and development.	C. Hite	12/11/10
PI / NI (NI based upon rationale)	Hydrologic Conditions	Leasing the parcels, per se, would not affect hydrologic conditions or the soil resource. However, there is some (low) expectation that drilling and development could occur, at which time additional NEPA would be conducted. Resource Protection Measures (RPMs) were developed in the EA for Oil and Gas Leasing in the Eastern Portion of the Cedar City Field Office for parcels within watersheds having erodible soils and steep slopes. Hydrologic and soil conditions are variable across the proposed parcels. Parcels 5 through 11 all contain steep slopes and may contain highly sensitive soils. Applying the RPM for Erodible Soils and Steep Slopes from the EA to parcels 5 through 11 as a lease notice would change this determination from a “PI” to an “NI”. If additional, site specific resource protection measures are needed to prevent unnecessary or undue degradation, these would be developed at the time of the site specific NEPA.	C. Egerton	11/29/10

Determi-nation	Resource	Rationale for Determination	Signature	Date
PI/NI (NI based upon rationale)	Invasive Species/Noxious Weeds (EO 13112)	The act of leasing, per se, would not affect Noxious weeds. However, there is some (low) expectation that drilling and development could occur, at which time additional NEPA would be conducted. NI during the leasing stage of the project, once it turns to an operational stage mitigation measures and best management practices should be incorporated to avoid spread of noxious weeds. Scotch Thistle, Whorled Milkweed, Black Henbane and non-native invasive species are present within the parcels. Additional NEPA should then discuss the species present, the likelihood they would be spread and include any additional management measures (mitigation). If any noxious weeds are present during construction phase, treating &/or avoiding is necessary to avoid spreading. Company responsible for noxious weed control and reclamation and rehabilitation of the site through reseeding with a certified weed free seed mix approved by the Authorized Officer is recommended to reduce the amount of invasion. Power washing vehicles before entering and leaving to prevent the spread of weed seed.	J. Bulloch	11/18/10
NI	Lands/Access	No Impact as long as all valid existing rights are adhered to for grant, lease, or permit holders.	R. Wilson	12/06/10
NI	Livestock Grazing	The following allotments are located in the parcels identified in the May 2011 Oil and Gas Lease sale: UT-0511-005 – Big Hollow Wash, UT-511-006 – Neck of the Desert, UT0511-009 – Swett Hills, Swett Hills, UT0511-010 – Eight Mile Hills and Swett Hills, UT0511-011 – New Harmony and Swett Hills. Lease of the parcels will not impact livestock grazing within the identified grazing allotments. However, there is an inherent expectation to conduct operations on each leased parcel. Any activity that involves surface disturbance or direct resource impacts would have to be authorized as a lease operation through future NEPA analysis, on a case-by-case basis. Impacts to livestock grazing may occur as a result of subsequent actions including exploration development, production, etc. Therefore, reclamation provision/procedures including re-vegetation (utilizing appropriate seed mix based on ecological site, elevation and topography), road reclamation, Range Improvement Project replacement/restoration (fences, cattle guards, etc…), noxious weed controls, etc… would be identified in future NEPA/Decision documents on a case-by-case basis. In addition, if any range improvement projects could be impacted by wells or associated infrastructure, wells would be moved 200 meters to avoid these impacts (Code of Federal Regulations (CFR), 43 CFR 3101.1-2). The issues identified above would be addressed further on a project site specific level if an Application for Permit to Drill (APD) is filed.	D. Fletcher	11/22/10

Determi-nation	Resource	Rationale for Determination	Signature	Date
PI/NI (NI, based upon rationale)	Migratory Birds	Several species of migratory birds would occur on the proposed parcels. Application of the migratory bird lease notice to all parcels would be adequate for the leasing stage and change the PI to an NI. Site specific impacts cannot be analyzed until an exploration or development application is received.	R. Bonebrake	12/08/10
NI	Native American Religious Concerns	Archaeologist and American Indian Consultant, Nathan Thomas and Fluid Minerals Geologist, Chris Hite met with Dorena Martineau, Cultural Resources Representative for the Paiute Tribe of Utah on December 1, 2010 at the Paiute Tribal Headquarters in Cedar City, Utah. At this time, the May 2011 Oil & Gas Lease Sale, including 11 parcels within BLM-administered lands in Iron County and Beaver County was discussed with Ms. Martineau. The BLM provided detailed maps (2) of the lease sale parcels in Iron County and in Beaver County. A list of the parcels was also provided to Ms. Martineau. She stated that they "have viewed and talked over parcels 1 – 11 and we are in agreement." Consultation with the Hopi Tribe was initiated with phone calls. A letter was sent to the Hopi tribe on December 16, 2010 and included a copy of the Class I literature search and a project description with maps. BLM received a response letter from the Hopi Tribe dated December 27, 2010. The Hopi concurred with BLM's determination of "No Historic Properties Affected" as appropriate for this proposed lease sale.	N. Thomas	12/06/10
NI	Paleontology	None of the nominated parcels include geologic units with a Potential Fossil Yield Classification (PFYC) of 5 (high). Eight of the parcels include geologic units with a PFYC of 4 (moderately high) and portions of the Historic Lake Bonneville shoreline: UT0511-006, UT0511-007, UT0511-009, UT0511-010, and UT0511-011. No documented occurrences of valuable paleontological resources occur within the nominated parcels. Any future analysis required for an authorization to conduct exploratory or operational activities would include a review of findings to date, and would incorporate appropriate mitigation measures to protect valuable paleontological resources.	C. Hite	12/11/10
NI	Rangeland Health Standards	Refer to livestock grazing section. Leasing of the parcels would not impact Rangeland Health Standards within the identified allotments. However, there is an inherent expectation to conduct operations on each leased parcel. Any activity that involves surface disturbance or direct resource impacts would have to be authorized as a lease operation through future NEPA analysis, on a case-by-case basis. It would be expected that reclamation procedures identified in the livestock grazing section would be required to ensure impacts to Rangeland Health Standards are minimized. The Gold Book standards also provide mechanisms to achieve rangeland health. These include weed control, siting considerations(e.g., well pad, contouring, road alignment), and re-vegetation etc.	D. Fletcher	11/22/10

Determi-nation	Resource	Rationale for Determination	Signature	Date
PI	Recreation	As deferred, three parcels occur within the Greater Three Peaks SRMA. See page 37 of Environmental Assessment UT-040-08-036 *Oil and Gas Leasing in the Eastern Portion of the Cedar City Field Office*, for a discussion of recreation resources affected by the proposed action. See pages 60 through 62 of EA UT-040-08-036 for a discussion of impacts to the Greater Three Peaks SRMA, plus to dispersed recreation resources. Include No Surface Occupancy – Developed or Potential Recreation Sites- for parcels within GTPSRMA (p. 92 of EA UT-040-08-036). For dispersed recreation, while some users may be displaced, there would be no net loss in recreation opportunities, considering the reseasonable forseeable development scenario.	E. Burghard	12/10/10
NI	Socio-Economics	There has been no change to the anticipated social and economic impacts of oil and gas leasing in this area of Iron County, since EA UT-040-08-036 was last amended in September 2009. Previous analysis is adequate. Given the low degree of anticipated exploration and development (three wells per year for the next 10 years with a total surface disturbance of 310 acres), socio-economic impacts are expected to be low. Parcel UT0511- 010 contains split-estate lands, meaning the surface rights and subsurface rights are owned by different parties. Development of an oil and gas lease on split-estate lands has the potential to affect land/property values in an area. All nominated parcels are located in a rural area with low commercial and residential development.	C. Hite	12/11/10
PI / NI (NI based upon rationale)	Soils	Please see "Hydrologic Conditions"	C. Egerton	11/29/10
PI/NI (NI based upon rationale)	Threatened, Endangered, Candidate or Sensitive Animal Species	Some of the proposed parcels contain habitat for TEC and sensitive species. Application of the appropriate species specific lease notices (see EA for list) would be adequate for the leasing stage and change the PI to an NI. Site specific impacts cannot be analyzed until an exploration or development application is received.	R. Bonebrake	12/08/10
PI/NI (NI based upon rationale)	Threatened, Endangered, Candidate or Sensitive Plant Species	There are no TEC plant species in the FO. One sensitive species, *Penstemon pinorum*, has been documented on parcel UT0511-006 and the Utah sensitive species lease notice should be applied. Application of the appropriate lease notice would be adequate for the leasing stage and change the PI to an NI. Site specific impacts cannot be analyzed until an exploration or development application is received.	R. Bonebrake	12/08/10
NI	Wastes (hazardous or solid)	The act of leasing will not result in the production of hazardous or solid wastes within the nominated parcels. Proper disposal of any generated hazardous or solid wastes would be addressed within any future authorization for exploratory or operational action.	C. Hite	12/11/10

Determi-nation	Resource	Rationale for Determination	Signature	Date
PI / NI (NI based upon rationale)	Water Resources/Quality (drinking/surface/ground)	The act of leasing, per se, would not affect water quality. However, there is some (low) expectation that drilling and development could occur, at which time additional NEPA would be conducted. Since parcels 5-11 are all located within the Cedar or Beaver drainages, applying the Resource Protection Measure from the Oil and Gas EA for the Eastern Cedar City Field Office for Water and Watershed Protection to each lease as a lease notice would be appropriate. Application of this notice would prevent water quality degradation.	C. Egerton	11/29/10
NI	Wetlands/Riparian Zones	Duncan Creek occurs in Parcel UT0511-011. Leasing this parcel would not impact riparian resources. Additional NEPA analyzing impacts to riparian resources would need to be conducted prior to any ground disturbing activities and would depend on location of activities. Activities would need to comply with Utah BLM Riparian Policy (IM UT 2005-091), which states: “No new surface disturbing activities will be allowed within 100 meters of riparian areas unless it can be shown that: -there are not practical alternatives or, -all long term impacts can be fully mitigated or, -the activity will benefit and enhance the riparian area.”	K. Wright	11/30/10
NP	Wild and Scenic Rivers	None within Field Office boundaries.	E. Burghard	12/09/10
NP	Wilderness/WSA	No designated wilderness or wilderness study areas occur either within or adjacent to the proposed leasing areas.	E. Burghard	12/10/10
NI	Woodland / Forestry	The act of leasing, per se, would not affect woodland or forest resources. However, there is a low expectation that drilling and development could occur, at which time additional NEPA would be conducted. All of the parcels being considered for leasing contain some woodland resource but contain no timber. Given the low degree of anticipated exploration and development, sparse potential well placement, application of Standard Operating Procedures and the ability to require relocation of proposed operations by up to 200 meters, it is anticipated that any impacts to woodlands would be negligible. If additional, site specific resource protection measures are needed to prevent unnecessary or undue degradation, these would be developed at the time of the site specific NEPA.	C. Egerton	11/29/10
NI	Vegetation Excluding Threatened, Endangered, Candidate and Sensitive Species	Refer to livestock grazing and Rangeland Health Standards sections. Lease of the parcels may impact vegetation within the identified allotments if an APD is granted. Any activity that involves surface disturbance or direct resource impacts will have to be authorized as a lease operation through future NEPA analysis, on a case-by-case basis. It would be expected that reclamation procedures identified in the livestock grazing and Rangeland Health sections would be required to ensure impacts to vegetation are minimized and disturbed areas are reclaimed.	D. Fletcher	11/22/10

Determi-nation	Resource	Rationale for Determination	Signature	Date
NI	Visual Resources	Approximately 600 acres of proposed lease parcel UT-511-011 occurs within a Visual Resource Management Class III. The rest of that lease parcel, as well as other parcels occur within VRM class IV. See page 62 of Environmental Assessment UT-040-08-036 Oil and Gas Leasing in the Eastern Portion of the Cedar City Field Office, for a discussion of visual resources and oil and gas leasing. Standard lease terms and mitigations in the Gold Book for visual resources and the ability to relocate operations up to 200 meters should allow development of the leases consistent with visual resource management objectives.	E. Burghard	12/10/10
NI	Wild Horses and Burros	Parcels UT0511-006 and UT0511-008 are within the Chloride wild horse herd management area (HMA). Three other parcels are within approximately 1-2 miles of the Chloride HMA. Lease of these parcels will not impact wild horses within this HMA. There is an inherent expectation to conduct operations on each leased parcel. Any activity that involves surface disturbance or direct resource impacts will have to be authorized as a lease operation through future NEPA analysis, on a case-by-case basis. Stipulations would be added at that time to protect wild horse foaling season, forage vegetation, water resources, and the free roaming behavior of the wild horses in the area where the activities are going to occur.	C. Hunter	11/19/10
NP	Areas with Wilderness Characteristics	In compliance with Secretarial Order 3310, the proposed lease parcels have been determined to be located on lands which clearly lack wilderness characteristics because these lands do not meet wilderness character inventory size criterion and/or they lack the appearance of naturalness due to existing development.	E. Burghard	12/10/10

FINAL REVIEW:

Reviewer Title	Signature	Date	Comments
Environmental Coordinator	*unsigned*	--	--
Authorized Officer	*unsigned*	--	--