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May 2016 Oil and Gas Lease Sale

Location: Color Country District, Richfield Field Office
Sevier 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 offering for lease at a May 17, 2016, oil and gas lease sale and the subsequent issuance of oil and gas leases for four parcels (proposed action), which collectively encompass approximately 6,742.75 acres of land administered by the BLM Richfield Field Office (Office) in Sevier County, Utah. This EA is a site-specific analysis of reasonably foreseeable impacts that could result from the implementation of the proposed action or alternatives to the proposed action. This EA will assist the BLM in project planning, in 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 under NEPA is defined in the Council on Environmental Quality (CEQ) regulations implementing NEPA at 40 Code of Federal Regulations (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 Impacts (FONSI). A FONSI statement based upon 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 Richfield Field Office Resource Management Plan (RMP) EIS (2008). This EA is tiered to the Richfield RMP/EIS and most of the indirect impacts from leasing have been disclosed in that document. Based upon this EA and an associated FONSI, a Decision Record may be signed authorizing an action, which could be an alternative or a modified version of an alternative addressed by this EA and described in the FONSI, for which it has been determined that significant environmental impacts are not likely to result. However, if it is determined that an alternative analyzed by this EA would likely result in a significant environmental impact, if such an alternative is to be further considered for potential approval, the potential impacts of that alternative would addressed in an EIS.

1.2 Background

The BLM policy is to make mineral resources available for use and to encourage their orderly development to meet national, regional, and local needs. This policy is based in various laws, including the Mineral Leasing Act of 1920 and the Federal Land Policy and Management Act of 1976. The Federal Onshore Oil and Gas Leasing Reform Act of 1987 (Sec. 5102(a)(b)(1)(A)) directs the BLM to conduct quarterly oil and gas lease sales in each state whenever eligible lands are available for leasing. Leases would be issued pursuant to the regulations contained in 43 CFR Subpart 3100.

Expressions of Interest (EOIs) are submitted by the public in order to identify ("nominate") specific public lands that the individuals and entities submitting the EOIs want BLM to offer oil and gas leasing and development. In general, the BLM USO conducts quarterly competitive oil and gas lease sales in order to respond to requests from the public that it offer certain nominated public lands in Utah for oil and gas lease. The BLM divides the lands nominated in EOIs into logical lease parcels, which will be considered for potential offering at a competitive oil and gas lease sale. The individuals and entities that submit EOIs which includes split estate lands – private surface/Federal minerals – must provide, with the EOI, the name and address of the current private surface owners(s). When a split estate parcel is under consideration, the BLM sends an initial letter to the surface owners(s). This letter informs the landowner that an EOI has been received which involves their surface ownership. The initial notification letter also provides notice of the scheduled lease auction and it invites the surface owner to participate in an on-

site visit to the parcel. After a parcel has gone through an interdisciplinary review, if it recommended for leasing, a second letter is sent to the private surface owners for parcels containing split estate lands. This second letter to private surface owners provides additional information regarding BLM's regulations and procedures for Federal oil and gas leasing and development on split estate lands.

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 preliminary parcel list to the appropriate District Office where the parcels are located. Field Office staff then review and verify that the parcels are in areas available for leasing and determine if any new information has become available, or any circumstances have changed in the time since the subject lands were identified as open to leasing in the applicable resource management plan (RMP). The parcels are then assessed to determine what level of analysis is required and the appropriate stipulations and notices to be applied to each parcel. Appropriate consultations are conducted, when necessary, and any special resource conditions are identified for potential bidders. In most instances, the Field Office where the parcels are located will prepare an EA in order to identify and analyze the potential impacts of leasing the parcels in accordance with the requirements of, NEPA and other applicable laws, regulations and policies.

After a draft of the EA is complete, it and an unsigned FONSI (if appropriate) are made available to the public for a 30 day public comment period by posting the documents on the BLM National Register for NEPA documents. https://eplanning.blm.gov/epl-front-office/eplanning/nepa/nepa_register. The draft EA, which includes a proposed parcel list and the lease stipulations and notices applicable to each proposed parcel, the unsigned FONSI, as well as other information and instructions for the subject oil and gas lease sale, are also made available through the BLM Utah's Oil and Gas Leasing website[1]. The BLM also typically issues press releases to publicly announce the public comment period for the draft EA and unsigned FONSI.

Following the conclusion of the public comment period for the draft EA, the BLM analyzes, responds to and incorporates (where appropriate) all substantive comments received during the public comment period and changes to the document and/or proposed lease parcel list are made, if necessary. The EA, with any revisions determined appropriate following the public comment period, and, if still considered appropriate, an unsigned FONSI are again made available to the public through the concurrent posting of those documents and a Notice of Competitive Lease Sale (NCLS) at least 90 days in advance of the scheduled lease sale. The posting of the NCLS, EA and FONSI initiates a (30 day) public protest period for the proposed lease sale offering that will end 60 days before the scheduled lease sale. The stipulations and notices applicable to each parcel proposed for lease will be specified in attachments to the NCLS. If any changes are needed to the parcels or stipulations and notices identified through the NCLS, an erratum is posted to the BLM Utah's Oil and Gas Leasing website, and in the public room for the BLM USO, in order to notify the public of any such changes. The lease parcels, as identified by the NCLS and any errata to the NCLS, would be offered for sale at a competitive oral auction tentatively scheduled to be held at the BLM USO on May 17, 2016. If a parcel of land is not purchased at the lease sale through competitive bidding, it may still be leased noncompetitively during the two year period that follows the offering of the parcel at the competitive lease auction. Any leased issued would be issued for a ten year primary term, after which the lease expires unless oil or gas is produced in paying quantities. The term for a producing lease can continue indefinitely while oil or gas is being economically produced.

Before any surface disturbances related to oil and gas development may occur on a lease, the lessee or operator for the lease must submit an Application for Permit to Drill (APD) (Form 3160-3) to the BLM for approval and an approved APD must be obtained. The standard lease terms contained in the standard lease form (Form 3100-11) along with any stipulations attached to the lease must be complied with before an APD may be approved. Following BLM approval of an APD, a lessee may produce oil and gas from a lease well in a manner approved by BLM in the applicable APD or in subsequent sundry notices to the APD. The operator must notify the appropriate authorized officer for BLM, 48 hours before starting any surface disturbing activity approved in an APD.

The BLM received nominations (EOIs) for seventeen parcels of land within the Richfield Field Office to be leased for oil and gas development (see Appendix A, May 2016 Preliminary Oil and Gas Lease Sale List; Appendix B, Maps of Parcels). After an initial review of the nominated parcels, thirteen parcels (UT0516-001, UT0516-002, UT0516-003, UT0516-004, UT0516-005, UT0516-006, UT0516-007, UT0516-008, UT0516-009, UT0516-010, UT0516-019, UT0516-022, and UT0516-75) were recommended to be deferred from the May 2016 lease sale for various reasons (see rationale in Appendix D – Deferred Parcel List). Some of these parcels may be analyzed again in future years to be leased. This EA has been prepared to disclose and analyze the potential environmental consequences of offering for sale at the May 2016 oil and gas lease sale, and the subsequent issuance of oil and gas lease, for four oil and gas lease parcels. The mineral rights for these parcels are owned by the federal government and administered by the RFO (see Appendix B). This EA is being 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.

1.3 Purpose and Need for the Proposed Action

Oil and gas production is a principal use of the public lands, as identified in sections 102(a)(12) and 103(e)(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).

The purpose of the proposed action is to provide parcels for inclusion at a competitive oil and gas lease sale to be held by the BLM USO on May 17, 2016. Pursuant to the Mineral Leasing Act of 1920, as amended, BLM Utah must hold competitive oil and gas lease sales, at least quarterly, when lands that are available for oil and gas leasing have been nominated. Moreover, BLM is required by law to review areas that have been nominated for potential inclusion at a competitive oil and gas lease sale.

The parcels proposed for offering for lease at the May 2016 oil and gas lease sale were nominated by the public. In addition, there has been ongoing interest in oil and gas exploration in the RFO area in recent years. Thus, the proposed action and the May 2016 oil and gas lease sale are needed to respond to the public's oil and gas leasing nomination requests and, in doing so, ensure that BLM upholds the various statutorily imposed responsibilities it has been entrusted with.

1.4 Conformance with BLM Land Use Plan

The alternatives described below are in conformance with the RFO RMP, as maintained (BLM 2008) because they are specifically provided for in the planning decision. They conform to the following Land Use Plan (LUP) decisions (RMP Table 19 pages 132-133):

MIN-1. Issue oil and gas leases and allow for oil and gas exploration and development.

MIN-6. Lease split-estate lands according to BLM RMP stipulations for adjacent or nearby public lands or plans of other surface management agencies as consistent with federal laws, 43 CFR 3101, and the surface owner's rights.

MIN-9. In accordance with an UDEQ-DAQ letter dated June 6, 2008, (see Appendix 13) requesting implementation of interim nitrogen oxide control measures for compressor engines; BLM will require the following as a Lease Stipulation and a Condition of Approval for Applications for Permit to Drill:

- All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horsepower must not emit more than 2 gms of NOx per horsepower-hour. This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower.
- All new and replacement internal combustion gas field engines of greater than 300 design rated horsepower must not emit more than 1.0 gms of NOx per horsepower-hour.

MIN-10. Area closed to leasing: 447,300 acres

MIN-11. Manage fluid mineral leases as shown on Map 23:

- Areas open to leasing with standard lease terms: 608,700 acres
- Areas open to leasing subject to Controlled Surface Use (CSU) and/or timing limitations: 917,500 acres
- Areas open to leasing subject to No Surface Occupancy (NSO): 154,500 acres

It is also consistent with RMP decisions and their corresponding goals and objectives related to the management of, including but not limited to, air quality, BLM natural areas, cultural resources, recreation, riparian, soils, water, vegetation, fish & wildlife, and Areas of Critical Environmental Concern (ACEC) as well as the Surface Stipulations Applicable to Oil and Gas Leasing and Other Surface Disturbing Activities (Appendix 11 of the RMP/ROD).

1.5 Relationship to Statutes, Regulations, or Other Plans

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

- Federal Land Policy and Management Act (1976) as amended and the associated regulations at 43 CFR Part 1600
- Mineral Leasing Act (1920) as amended and the associated regulations at 43 CFR Part 3100
- National Environmental Policy Act (1969) and the associated CEQ regulations at 40 CFR Parts 1500 through 1508
- Taylor Grazing Act (1934) as amended
- Utah Standards and Guidelines for Rangeland Health (1997)
- National Historic Preservation Act (1966) as amended and the associated regulations at 36 CFR Part 800

- Endangered Species Act (1973) as amended
- BLM Manual 6840- Special Status Species Management
- Bald and Golden Eagle Protection Act (1962)
- Migratory Bird Treaty Act (1918)
- Utah Partners in Flight Avian Conservation Strategy Version 2.0 (Parrish et al., 2002)
- Birds of Conservation Concern 2002 (USFWS 2008)
- 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)
-
- BLM Manual 6310 - Conducting Wilderness Characteristics Inventory of BLM Lands
- BLM Manual 6320 - Considering Lands with Wilderness Characteristics in the BLM Land Use Planning Process
- Determining Conformity of Federal Actions to State or Federal Implementation Plans (40 CFR Part 93 Subpart E)
- MOU Among the USDA, USDI and EPA Regarding Air Quality Analysis and Mitigation for Federal Oil and Gas Decisions Through the NEPA Process (2011)
- Richfield Field Office Visual Resource Inventory (2011)
- Richfield Field Office Record of Decision and Approved Resource Management Plan (2008)

43 CFR 3101.1-2 states: "A lessee shall have the right to use as much of the leased lands as is necessary to explore for, drill for, mine, extract, remove and dispose of all the leased resources in leasehold subject to: Stipulations attached to the lease; restrictions deriving from specific, non-discretionary statutes; and such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses or users not addressed in the lease stipulations." 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 (ESA), National Historic Preservation Act (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 WO IM 2005-03, Cultural Resources and Tribal Consultation for Fluid Minerals Leasing) and threatened or endangered species (BLM WO IM-2002-174, Endangered Species Act Section 7 Consultation).

These documents, and their associated analysis or information, 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 to the RFO. 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 RFO and Utah BLM State Office. This team identified resources in the

parcel areas which might be affected and considered potential impacts using personal knowledge, the most current office records and applicable technical or scientific data for a particular resource or area, geographic information system (GIS) data, and site visits to the proposed lease parcels. The BLM USO specialists for air quality, wildlife, cultural resources, special designations, visual resources and solid minerals also reviewed this proposal.

On August 19, 2015, the IDPR team conducted site visits to the proposed parcels, including the split estate parcel, to validate existing knowledge and data and gather new information (if present) in order to make informed recommendations for the May 2016 oil and gas lease sale. Accordingly, several parcels were not included in the proposed action, and leasing stipulations were identified for those that were. None of the other agencies or private landowners participated in the site visits with the RFO IDPR team. The results of the IDPR team review are contained in the Interdisciplinary Team Checklist, Appendix C.

On August 20, 2015, the USO sent letters (or memorandum) to the National Park Service (NPS), United States Fish and Wildlife Service (USFWS), United States Forest Service (USFS) and the State of Utah's Public Lands Policy Coordination Office (PLPCO), Utah Division of Wildlife Resources (UDWR) and the State Institutional Trust Lands Administration (SITLA) to notify them of the pending lease sale, solicit comments and concerns on the preliminary parcel list and invite them to participate in site visits to the proposed parcels.

Public notification was initiated by entering the project information on the BLM eplanning website on October 20, 2015. The EA and unsigned FONSI were posted for public review and comment from December 17, 2015 through January 21, 2016. Additional information for the public is maintained on the Utah BLM Oil and Gas Leasing Webpage. Additional information on public participation is available in Section 5.3.

1.7 Summary

This chapter has presented the purpose and need of the proposed project, as well as the process for identifying issues and resources 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 alternatives. These alternatives are presented in Chapter 2. The potentially affected environment will be described in Chapter 3. The potential environmental impacts or consequences that could result from the implementation of each alternative are analyzed in Chapter 4 and Appendix C.

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 considered, but ultimately not analyzed in detail because the issues identified during scoping did not indicate a need for additional alternatives or mitigation beyond those contained in the Proposed Action and No Action alternatives. 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

Four parcels within the jurisdiction of the RFO have been proposed for sale in the May 2016 oil and gas lease sale to be held by the BLM USO. The proposed parcels would be offered for lease with resource protection measures (lease stipulations) consistent with the RFO RMP (BLM, 2008). Legal descriptions of each parcel can be found in Appendix A, and a map of the proposed parcels can be found in Appendix B. All of the acreage proposed to be leased has been identified as being either open to leasing subject to standard lease terms, open to leasing subject to minor constraints, such as seasonal restrictions, or open to leasing with no surface occupancy (NSO) in the RFO RMP (RMP; see Map 23).

Leasing is an administrative action that affects economic conditions (payment of leasing fees to the government) 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 NSO stipulation. Potential oil and gas exploration and production activities, committed to in a lease sale, could impact other 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.

Although at this time it is unknown when, where, or if future well sites or roads might be proposed on any leased parcel, should a lease be issued, site specific analysis of individual wells or roads would occur when a lease holder submits an Application for Permit to Drill (APD). For the purposes of this analysis, the BLM assumed that one well pad with access road would be constructed on each lease parcel subject to the terms, conditions, and stipulations of the lease. This would imply that over the next 10 years (the life of a lease that is not held by production) 4 locations could be drilled, with the potential surface disturbance of approximately 48 acres (assuming approximately 12 acres per drill pad and access road). These figures are estimated in the Reasonably Foreseeable Development Scenario (Appendix 12 of the RFO RMP/ROD). In general, activities are anticipated to take place as described in the following sections.

Standard lease terms would be attached to all issued leases. These terms provide for reasonable measures to minimize adverse impacts to specific resource values, land uses, or users (the 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, October 2008). 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 subject to the standard lease terms and the lease stipulations attached to the lease; however, 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 (ESA), National Historic Preservation Act (NHPA), and Federal

Land Policy and Management Act (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.

All leases issued subsequent to October 5, 2004, would include the lease stipulation for the protection of cultural resources (WO IM 2005-003, Cultural Resources and Tribal Consultation for Fluid Minerals Leasing), which states:

> *"This lease may be found to contain historic properties and/or resources protected under the National Historic Preservation Act, American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E.O. 13007, or other statutes 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."*

All leases issued would include the lease stipulation for the protection of threatened or endangered species (WO IM 2002-174, Endangered Species Act Section 7 Consultation), which states:

> *"The lease area may now or hereafter contain plants, animals, or 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 objective to avoid BLM-approved activity that would contribute to a need to list such a species or their habitat. BLM may require modifications 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 until it completes its obligations under applicable requirements of the ESA as amended, 16 United States Code (USC) 1531 et seq. including completion of any required procedure for conference or consultation."*

In addition, BLM regulations at 43 CFR 3101.1-2 allow, at a minimum, for the relocation of proposed oil and gas leasing operations up to 200 meters and/or timing limitations up to 60 days to provide additional protection to ensure that proposed operations minimize adverse impacts to resources, uses, and users.

2.2.1 Development Scenario for Analysis of Indirect and Cumulative Impacts

2.2.1.1 Well Pad and Road Construction

Equipment for well pad construction would consist of dozers, trackhoes, and graders. All well pads would be reclaimed. Topsoil from each well pad would be stripped to a minimum depth of six inches and stockpiled for future reclamation. Interim reclamation of the pad would occur if the well produces commercial quantities of oil or gas. Interim reclamation involves a reduction of the drill pad to a size that accommodates the functions of a producing well. The topsoil would be spread over the interim reclamation area, seeded, left in place for the life of the well, and then used during the final reclamation process. If the well is not productive final reclamation of the pad and constructed road would begin. Disturbance for each well pad would be estimated at an area of approximately four acres of land, including topsoil piles. 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. 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. Construction of new roads or upgrades to existing roads would require a 12-24 foot travelway width and would be constructed of native material. 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 approximately 8 acres (2 miles of road at 4 acres per mile) per well site.

2.2.1.2 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 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) would be excluded from painting color requirements. All surface facilities would be painted immediately after installation and under the direction and approval of the BLM.

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.

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.

2.2.1.3 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 discharge to evaporation pits or underground injection. Handling of produced water is addressed in Onshore Oil and Gas Order No. 7.

2.2.1.4 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 re-contoured and reclaimed, as an interim reclamation of the site.

2.2.1.5 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 re-contoured, and topsoil would be replaced, scarified, and seeded within 180 days of the plugging the well.

2.3 Alternative B – No Action

Under the No Action alternative none of the nominated parcels would be offered for sale.

2.4 Alternatives Considered but Eliminated from Further Analysis

A total of seventeen parcels were nominated and forwarded to the Richfield Field Office for review in the May 2016 Oil and Gas Lease Sale. An alternative was considered that included leasing of all these parcels. As introduced in Section 1.2 Background, thirteen parcels (UT0516-001, UT0516-002, UT0516-003, UT0516-004, UT0516-005, UT0516-006, UT0516-007, UT0516-008, UT0516-009, UT0516-010, UT0516-019, UT0516-022, and UT0516-75) were recommended to be deferred from the lease sale for various reasons (see rationale in Appendix D – Deferred Parcel List).

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. 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 in Chapters 3 and 4 (see also Appendix C). Resources that are either not present or present, but not affected to a degree where detailed analysis in Chapters 3 and 4 is needed are addressed in Appendix C, Interdisciplinary Team Checklist, of this EA.

3.2 General Setting

The proposed action would result in the leasing for oil and gas development of four parcels within the RFO. See Appendix A for legal descriptions and Appendix B for a map of the parcels. Additional information is also contained in the Interdisciplinary Team Checklist (Appendix C).

These parcels range in size from 1045.42 to 2,239.32 acres for a total of 6,742.75 acres. The parcels are located southwest of Monroe, Sevier County, Utah (Appendix B – Parcel Map). The landscape, topography, plant and animal species throughout the proposed parcels to be leased is varied. The area is covered in a mixture of grass and shrubs. Some of the dominant vegetation species are: Wyoming sagebrush, pinyon pine, juniper, Gambel's oak, shadscale, needle and thread grass, Indian ricegrass and greasewood. Areas that have been disturbed or burned from a wildfire are predominantly cheatgrass or seeded desirable plant species. High densities of Class B roads crisscross the area. The BLM administered areas are utilized by grazing cattle for a portion of the year.

3.3 Resources/Issues Brought Forward for Analysis

3.3.1 Air Quality, Climate Change, and Greenhouse Gases

These resources are interrelated and are being combined fir discussion and analysis. Air quality is affected by various natural and anthropogenic factors. Industrial sources such as power plants, mines, and oil and gas extraction activities within Utah contribute to local and regional air pollution. Urbanization and tourism create emissions that affect air quality over a wide area. Air pollutants generated by motor vehicles include tailpipe emissions and dust from travel over dry, unpaved road surfaces. Strong winds can generate substantial amounts of windblown dust. Air pollution emissions are characterized as point, area, or mobile. Point sources are large, stationary facilities such as power plants and manufacturing facilities and are accounted for on a facility by facility basis. Area sources are smaller stationary sources and, due to their greater number, are accounted for by classes. Production emissions from an oil and gas well and dust from construction of a well pad would be considered area source emissions. Mobile sources consist of non-stationary sources such as cars and trucks. Mobile emissions are further divided into on-road and off-road sources. Engine exhaust from truck traffic to and from oil and gas locations would be considered on-road mobile emissions. Engine exhaust from drilling operations would be considered off road mobile emissions.

The Clean Air Act required the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The

Utah Division of Air Quality (UDAQ) is responsible to ensure compliance with the NAAQS within the state of Utah. Table 1 shows NAAQS for the EPA designated criteria pollutants (EPA 2008).

Table 1. National Ambient Air Quality Standards (NAAQS) for the EPA designated criteria pollutants

Pollutant [final rule cite]		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide [76 FR 54294, Aug 31, 2011]		primary	8-hour	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Lead [73 FR 66964, Nov 12, 2008]		primary and secondary	Rolling 3 month average	0.15 μg/m^3 (1)	Not to be exceeded
Nitrogen Dioxide [75 FR 6474, Feb 9, 2010] [61 FR 52852, Oct 8, 1996]		primary	1-hour	100 ppb	98th percentile, averaged over 3 years
		primary and secondary	Annual	53 ppb (2)	Annual Mean
Ozone [73 FR 16436, Mar 27, 2008]		primary and secondary	8-hour	0.075 ppm (3)	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
Particle Pollution [71 FR 61144, Oct 17, 2006]	$PM_{2.5}$	primary and secondary	Annual	15 μg/m^3	annual mean, averaged over 3 years
			24-hour	35 μg/m^3	98th percentile, averaged over 3 years
	PM_{10}	primary and secondary	24-hour	150 μg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide [75 FR 35520, Jun 22, 2010] [38 FR 25678, Sept 14, 1973]		primary	1-hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

as of October 2011

(1) Final rule signed October 15, 2008. The 1978 lead standard (1.5 μg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
(2) The official level of the annual NO2 standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard.
(3) Final rule signed March 12, 2008. The 1997 ozone standard (0.08 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place. In 1997, EPA revoked the 1-hour ozone standard (0.12 ppm, not to be exceeded more than once per year) in all areas, although some areas have continued obligations under that standard ("anti-backsliding"). The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to 1.
(4) Final rule signed June 2, 2010. The 1971 annual and 24-hour SO2 standards were revoked in that same rulemaking. However, these standards remain in effect until one year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.

Prevention of Significant Deterioration

Under the Prevention of Significant Deterioration (PSD) provisions of the Clean Air Act (CAA), incremental increases of specific pollutant concentrations are limited above a legally defined baseline level. Many national parks and wilderness areas are designated as PSD Class I. The PSD program protects air quality within Class I areas by allowing only slight incremental increases in pollutant concentrations. Areas of Utah not designated as PSD Class I are classified as Class II. For Class II areas, greater incremental increases in ambient pollutant concentrations are allowed as a result of controlled growth.

Air Quality Related Values

Air Quality Related Values (AQRVs) are resources applied to all PSD Class I and sensitive Class II areas that may be affected by changes in air quality. AQRVs include visibility, dark night skies, vegetation,

wildlife, and soils. Visibility is the most sensitive AQRV in the parks. Visibility is impaired by haze caused by tiny particles that scatter and absorb light. Sulfates, crustal materials, organic carbon, elemental carbon, and nitrates, in order of decreasing contributions, comprise particles that result in the formation of haze in the western U.S. Sulfates and crustal materials are responsible for over 50 percent of the causes of visibility impairment. Sulfate particles are formed from sulfur dioxide gas released from coal-burning power plants and other industrial sources. Crustal materials are windborne dust particles from dirt roads and other open spaces. The EPA's Regional Haze regulations required states to establish goals for each Class I air quality area to improve visibility on the haziest days and ensure no degradation occurs on the clearest days. The 2008 Government Performance and Results Act (GPRA) set goals for air quality for parks on the northern Colorado Plateau, including Canyonlands and Arches NPs. While an AQRV reflects a land management agency's policy and is not a legally enforceable standard, federal regulations such as the EPA's Regional Haze rule and GPRA ensure the protection of some AQRVs.

Some aspects of air quality are monitored for Canyonlands and Arches NPs. Long-term visibility monitoring in Canyonlands NP determined that on the clearest and haziest days, this park exhibited a statistically significant improving trend (National Park Service [NPS], 2010a). During the 20 percent clearest days at Canyonlands NP, or when visibility is very good, atmospheric sulfates were identified as the largest contributor to impaired visibility; however, during the 20 percent haziest days, or when visibility is impaired, coarse particulate matter is the largest contributor to haze (Perkins, 2010). Increasing ozone concentrations also correspond to decreasing visibility (Aneja et al., 2004). Monitored ozone concentrations in Canyonlands NP were assessed as "moderate," but trend data are not available. Between 1993 and 2008, ozone levels in Canyonlands NP have generally remained under, but close to, the standard. In 2012, one ozone exceedance was measured in May and one in June. The 4th highest maximum 8-hour measurement to-date in 2012 was 72 parts per billion (NPS, 2012). Visibility at Arches NP was assessed as moderate, showing no trend. Ozone levels are not monitored at Arches NP. The National Park Service Air Resources Division expects air quality in both parks to improve as regulations that reduce tailpipe emissions from motor vehicles and pollution from electric-generating facilities take full effect over the next few years (NPS, 2010).

Soils and vegetation in the parks may be sensitive to nutrient enrichment from deposition of atmospheric nitrates and sulfates, which contribute to soil and water acidification. Fertilizer use, motor vehicles, and agricultural activities produce ammonia, which contribute to nitrogen deposition. Ammonia can be emitted from light duty vehicles, depending on fuel types and operational condition. Ammonium results primarily from crop and livestock production (NPS, 2006a). Increased nitrogen loading levels from deposition of ammonium has been observed at Canyonlands NP (NPS, 2010a); however, surface waters and soils in Canyonlands and Arches NPs, with the exception of potholes, are generally well-buffered and are not likely to be acidified by atmospheric deposition (NPS, 2006).

Table 2: Air Quality and AQRV Trends in Nearby National Parks

National Park	Visibility	Nitrogen Deposition	Sulfur Deposition	Ozone
Arches NP	Moderate condition, no trend.	No data.	No data.	No data.
Canyonlands NP	Moderate condition, no trend.	Good; no trend.	Good; no trend.	Moderate condition, no trend.

Source: NPS, 2010a

Hazardous Air Pollutants

Hazardous air pollutants (HAPs) are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental impacts. The EPA has classified 187 air pollutants as HAPs. Examples of listed HAPs associated with the oil and gas industry include formaldehyde, benzene, toluene, ethylbenzene, isomers of xylene (BTEX) compounds, and normal-hexane (n-hexane).

The CAA requires the EPA to regulate emissions of toxic air pollutants from a published list of industrial sources referred to as "source categories." The EPA has developed a list of source categories that must meet control technology requirements for these toxic air pollutants. Under Section 112(d) of the CAA, the EPA is required to develop regulations establishing national emission standards for hazardous air pollutants (NESHAP) for all industries that emit one or more of the pollutants in major source quantities. These standards are established to reflect the maximum degree of reduction in HAP emissions through application of maximum achievable control technology (MACT). Source categories for which MACT standards have been implemented include oil and natural gas production and natural gas transmission and storage.

Greenhouse Gases (GHGs) and Climate Change

According to National Oceanic and Atmospheric Administration (NOAA) and National Aeronautic and Space Administration (NASA) data, Earth's average surface temperature has increased by approximately 1.2 to 1.4 ºF in the last 100 years. The 8 warmest years on record (since 1850) have all occurred since 1998, with the warmest year being 2005. Most of the warming in recent decades is very likely the result of human activities. The past 18 years have had negligible increase in maximum temperature even though they have been some of the hottest in the continental US. Equilibrium climate sensitivity quantifies the response of the climate system to constant radiative forcing on multicentury time scales. It is defined as the change in global mean surface temperature at equilibrium that is caused by a doubling of the atmospheric CO2 concentration. Equilibrium climate sensitivity is likely in the range 1.5°C to 4.5°C (high confidence), extremely unlikely less than 1°C (high confidence), and very unlikely greater than 6°C (medium confidence). The lower temperature limit of the assessed likely range is thus less than the 2°C in the AR4, but the upper limit is the same. This assessment reflects improved understanding, the extended temperature record in the atmosphere and ocean, and new estimates of radiative forcing. No best estimate for equilibrium climate sensitivity can now be given because of a lack of agreement on values across assessed lines of evidence and studies (IPCC, 2013).

Regional Effects

The IPCC and Global Change Research Program include the planning area in the "southwest" region. Recent warming in the southwest region has been among the most rapid in the Nation, with the average temperature increasing approximately 1.5 °F compared to a 1960 through 1979 baseline period. Temperature increases are driving declines in spring snowpack in the region and flows in the Colorado River, combining with other factors to affect water supply. Projections suggest continued strong warming, with much larger increases under higher emissions scenarios. By the end of the century (2100), average annual temperature is projected to rise approximately 4º F to 10º F above the historical baseline, averaged over the southwest region.

Current Conditions

The BLM recognizes the importance of climate change and the potential effects it could have on natural and socioeconomic environments. Throughout the planning area, the BLM authorizes numerous types of activities and actions that result in GHG emissions, with the largest contributor being the combustion of fossil fuels for on-road and off-road vehicles, engines, and construction equipment. Additional activities that result in GHG emissions include prescribed burns and other fire management activities; authorization of ROWs for energy development and transmission, roads, pipelines, and other uses; grazing permits; and oil and gas and other mineral exploration and development. Although individually these activities result in small amounts of GHG emissions, they do contribute to the regional, national, and global pool of GHG emissions.

In addition to direct GHG emissions, indirect GHG emissions and other factors potentially contributing to climate change include fires; land use changes (e.g., converting rangelands to urban use); and wind erosion, fugitive dust from roads, and entrained atmospheric dust that darkens glacial surfaces and snow packs and results in faster snowmelt. Other activities could help sequester carbon, such as managing vegetation to favor perennial grasses and increase vegetation cover, which could help build organic carbon in soils and function a "carbon sinks."

Additionally, significant research and development efforts are underway in the field of carbon capture and sequestration (CCS) technology. This technology is expected to become available in the next two decades and would allow the power generation industry to capture carbon dioxide and store it underground, drastically reducing emissions to the atmosphere (Department of Energy [DOE 2007]). There is also an increased emphasis on the development of renewable energy projects. Policy developments worldwide will likely accelerate the process of emissions reduction. In the near future, the US is expected to join the European Union and other nations in placing mandatory caps on carbon dioxide emissions (there is also a possibility of a carbon tax). Such mandatory caps would be even more effective in reducing global carbon dioxide emissions with the participation of developing nations such as China and India. Vehicle fuel economy standards will further serve to reduce carbon dioxide emissions worldwide. Ultimately, the levels of global dioxide emissions in the future will be determined by a mix of these technological, economic, and policy developments; thus, future increases and decreases in carbon dioxide emission rates remain uncertain at present.

3.3.2 Socio-Economics

Sevier County has a rural, agricultural-based economy. The Richfield Area Chamber of Commerce shows Sevier County's population is 20,802 (based on the 2010 census). The population is mostly dispersed into small communities. Richfield, the county seat, has a population of 7,551 (2010 census) and is the largest town in the county. The county's economy is currently based on livestock, coal production, oil production, manufacturing, and trade.

3.3.3 Visual Resources

The BLM uses a Visual Resource Management (VRM) system to inventory and manage visual resources on public lands. The primary objective of VRM is to manage visual resources so that the quality of scenic (visual) values is protected. The VRM system uses four classes (and their associated visual resource objectives) to describe the different degrees of surface disturbance or modification allowed on the landscape.

VRM Class VRM Objective

> Class I: The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and should not attract attention.
>
> Class II: The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
>
> Class III: The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
>
> Class IV: The objective of this class is to provide for management activities, which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements of the landscape.

The proposed lease parcels would encompass VRM management classes II and IV. A portion of parcel UT0516-024 is in VRM II. The majority of parcel UT0516-024 and all of parcels UT0516-021, UT0516-023, and UT0516-025 are in VRM IV.

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 but occur later or farther away from the resource. 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 (offer four of the parcels for sale with additional resource protective measures). For each alternative, the environmental effects are analyzed for the resources that were carried forward for analysis in Chapter 3.

4.2 Direct and Indirect Impacts

4.2.1 Alternative A – Proposed Action

This section analyzes the impacts of the proposed action to those potentially impacted resources described in the Affected Environment (Chapter 3).

4.2.1.1 Air Quality, Climate Change, and Greenhouse Gases

Existing Sources of Pollution

The Color County District (which includes Sevier County) has existing sources of pollution that vary mainly from regional ozone to particulate matter. Regional ozone is typical in the western states as forest fires, transport from shipping lanes, electric power generation and a conglomerate of other sources combine under certain meteorological conditions. Particulate matter is another issue during dust storms or kicked up from other activities in this dry region.

Table 3. Division of Air Quality – 2011 Annual Report Triennial Inventory (tons/year)

County	CO	NO_x	PM10	PM2.5	SO_x	VOC
Beaver	12,406.83	2,192.19	1,354.23	274.28	102.42	31,624.33
Sanpete	10,593.21	853.47	1,360.66	301.44	98.17	19,415.89
Sevier	14,528.92	1,892.59	1,926.47	428.14	118.78	19,678.44

The act of leasing would not result in changes to air quality. However, should the leases be issued, development of those leases could impact air quality conditions. It is not possible to accurately estimate potential air quality impacts by computer modeling from the project due to the variation in emission control technologies as well as construction, drilling, and production technologies applicable to oil versus gas production and utilized by various operators, so this discussion remains qualitative.

Prior to authorizing specific proposed projects on the subject lease parcels quantitative computer modeling using project specific emission factors and planned development parameters (including specific emission source locations) may be conducted to adequately analyze direct and indirect potential air quality impacts. In conducting subsequent project specific analysis BLM will follow the policy and procedures of the National Interagency MOU Regarding Air Quality Analysis and Mitigation for Federal Oil and Gas Decisions through NEPA, and the FLAG 2010 air quality guidance document. Air quality dispersion modeling which may be required includes impact analysis for demonstrating compliance with the NAAQS, plus analysis of impacts to Air Quality Related Values (i.e. deposition, visibility), particularly as they might affect regional Class 1 areas (national parks and wilderness areas).

An oil or gas well, including the act of drilling, is considered to be a minor source under the Clean Air Act. Minor sources are not controlled by regulatory agencies responsible for implementing the Clean Air Act. In addition, control technology is not required by regulatory agencies at this point, all of the parcels occur in NAAQS attainment areas. Different emission sources would result from the two site specific lease development phases: well development and well production. The BLM does look to mitigate pollutants via lease stipulations and further NEPA actions throughout the lease process.

Well development includes emissions from earth-moving equipment, vehicle traffic, drilling, and completion activities. NO_X, SO_2, and CO would be emitted from vehicle tailpipes. Fugitive dust concentrations would increase with additional vehicle traffic on unpaved roads and from wind erosion in areas of soil disturbance. Drill rig and fracturing engine operations would result mainly in NO_X and CO emissions, with lesser amounts of SO_2. These temporary emissions would be short-term during the drilling and completion times.

During well production there are continuous emissions from separators, condensate storage tanks, and daily tailpipe and fugitive dust emissions from operations traffic. During the operational phase of the Proposed Action, NO_X, CO, VOC, and HAP emissions would result from the long-term operation of condensate storage tank vents, and well pad separators. Additionally, road dust (PM_{10} and $PM_{2.5}$) would be produced by vehicles servicing the wells.

Project emissions of ozone precursors, whether generated by construction and drilling operations, or by production operations, would be dispersed and/ or diluted to the extent where any local ozone impacts from the Proposed Action would be indistinguishable from background or cumulative conditions. The primary sources of HAPs are from oil storage tanks and smaller amounts from other production equipment. Small amounts of HAPs are emitted by construction equipment. However, these emissions are estimated to be less than 1 ton per year. Based on the negligible amount of project-specific emissions, the Proposed Action is not likely to violate, or otherwise contribute to any violation of any applicable air quality standard, and may only contribute a small amount to any projected future potential exceedance of any applicable air quality standards.

The construction, drilling, completion, testing, and production of an oil and gas well could result in various emissions that affect air quality. Construction activities result in emissions of particulate matter. Well drilling activities result in engine exhaust emissions of NOx, CO, and VOC. Completion and testing of

the well result in emissions of VOC, NO_X, and CO. Ongoing production results in the emission of NOx, CO, VOC, and particulate matter.

Due to the very small level of anticipated development, an emissions inventory (EI) has not been conducted for this lease sale. A typical oil and gas well EI is estimated for the purpose of this analysis and is based on the following assumptions:

- Each oil and gas well would cause approximately 12 acres of surface disturbance. This acreage includes access.
- Construction activity for each well is assumed to be 10 days. It is further assumed that, based on the acreage disturbed, 4.5 days would be spent in well pad construction and 5.5 days would be spent in road and pipeline construction.
- Control efficiency of 25% for dust suppression would be achieved as a result of compliance with Utah Air Quality regulation R307-205.
- Post construction particulate matter (dust) emissions are likely to occur on a short term basis due to loss of vegetation within the construction and staging areas. Assuming appropriate interim reclamation, these emissions are likely to be minimal to negligible and will not be considered in this EA.
- Drilling operations would require 20-60 days.
- Completions and testing operations would require 3 days.
- Off road mobile exhaust emissions from heavy equipment during construction activities and on road mobile emissions would not be considered as they are dispersed, sporadic, temporary, and not likely to cause or contribute to exceedence of the NAAQS.

If exploration occurs, short-term impacts would be stabilized or managed rapidly (within two to five years), and long-term impacts are those that would substantially remain for more than five years. An air quality best management practice (BMP) which discusses the amounts of NO_X emission per horse-power hour based on internal combustion engine size, would be attached to all parcels. Stipulation UT-S-01, Air Quality, would consist of the following provisions:

- All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horsepower must not emit more than 2 grams of NOx per horsepower-hour. This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower.
- All new and replacement internal combustion gas field engines of greater than 300 design rated horsepower must not emit more than 1.0 gram of NOx per horsepower-hour.

Emission factors for activities of the proposed action were based on information contained in the EPA's Emission Factors & AP 42, Volume I, Fifth Edition (EPA.1995), available at: http://www.epa.gov/ttn/chief/ap42/index.html.

The production emissions from oil storage tanks was estimated based on the emission factor contained in the Colorado Department of Public Health and Environment PS Memo 05-01, Oil & Gas Atmospheric Condensate Storage Tank Batteries Regulatory Definitions and Permitting Guidance (CDPHE 2009), available at: http://www.cdphe.state.co.us/ap/down/ps05-01.pdf.

Table 4. Emissions Estimate

	Construction Emissions (Tons)	Drilling Emissions (Tons)			Completions Emissions (Tons)				Ongoing Production Emissions (Tons/year)			
	PM_{10}	NO_X	CO	VOC	VOC	NO_X	CO	PM_{10}	NO_X	CO	VOC	PM_{10}
Typical Well	0.34	13.31	1.83	0.23	0.85	0.07	0.07	0.00	0.01	0.01	6.44	0.00000
Sub Total	0.34	13.31	1.83	0.23	0.85	0.07	0.07	0.00	0.01	0.01	6.44	0.00000
					PM_{10}	NO_X	CO	VOC				
Activity Emissions (Total emissions for drilling and completion the well)					0.34	13.37	1.89	1.08	Tons			
Production Emissions (Ongoing annual emissions for the well)					0.00000	0.01	0.01	6.44	tpy			

Emissions estimates for GHG's were not prepared, as single-well GHG emissions would be well under the 25,000 ton per year EPA reporting threshold. Based on the emissions estimates contained in Table 4, and considering the location of the proposed leasing relative to population centers and Class 1 areas, substantial air resource impacts are not anticipated as a result of this leasing action, and no further analysis or modeling is warranted. Emissions resulting from the lease sale are not likely to result in major impacts to air quality nor are they likely to cause a violation of the NAAQS.

Additional air quality control measures may be warranted and imposed at the APD stage. These control measures are dependent on future regional modeling studies, other analysis or changes in regulatory standards. As such, a lease notice would be appropriate to inform an operator or the general public that additional air quality control measures would be pursued. Lease notices UT-LN-99 (Regional Ozone Formation Controls) and UT-LN-102 (Air Quality Analysis) would be attached to all lease parcels.

To address oil and gas development emissions may have on regional ozone formation, the following Best Management Practices (BMPs) would be required through a lease notice (UT-LN-99, Regional Ozone Formation Controls) for any development projects related to this lease sale:

- Tier II or better drilling rig engines
- Stationary internal combustion engine standard of 2g NOx/bhp-hr for engines <300HP and 1g NOx/bhp-hr for engines >300HP
- Low bleed or no bleed pneumatic pump valves
- Dehydrator VOC emission controls to +95% efficiency
- Tank VOC emission controls to +95% efficiency

Green House Gases and Climate Change

There are no direct impacts related to GHG emissions and climate change in leasing EA. Likely indirect impacts could potentially include GHG emissions from a well drilling for exploratory purposes. Estimated GHG emissions can be calculated using a generic emissions calculator available on the BLM Utah Air Quality webpage (http://www.blm.gov/ut/st/en/prog/more/air_quality/airprojs.html) which shows emissions of 1,192 tons per year CO2-e for a single operational well, and 2,305 tons per year CO2-e for a single drill rig. Based on this analysis a single exploratory well is unlikely to exceed the 25,000 ton per year reference point recommended by CEQ, and no further analysis is warranted at this stage.

4.2.1.2 Socio-Economics

The social and economic environments of Sevier Counties would be positively affected by the proposed project. Exploratory drilling of oil and gas in the project area would contribute to the local economy by providing several benefits: short-term employment opportunities for construction, drilling and completion; monies to local contractors; and revenues recycled into the area's local economy. Additional revenues would be generated in the form of sales taxes and income taxes. Local workers would potentially be used in much of the project work, and they would likely spend much of their income in local economies, thus producing a "multiplier effect" that could be at least 1.5 times the revenues generated from the proposed project.

The Proposed Action would add to the short-term opportunities for employment in Sevier County, especially for workers associated with the support of the oil and gas industry. The average cost to construct, drill and complete an individual well is approximately $5,000,000 if four wells were drilled the economic impact would be approximately $20,000,000.

If the proposed well is productive, long-term employment opportunities would likely be generated for at least one pumper and three tanker truck drivers. If the well is productive, income to the federal government, State of Utah and Sevier County would be generated in the form of royalties, sales taxes, income taxes, and property taxes for the producing well. Furthermore, if the well is productive, field development would likely be pursued by the applicant, thereby potentially resulting in additional short-term and long-term employment opportunities, royalties, sales taxes, income taxes, and property taxes.

If production is established from a well and/or additional wells, the development of oil and gas could lead to long-term impacts to the social structure of the communities, changes in the economic base, and an increased demand for local government services. These impacts could include increased revenues in the local economy, an increase in the tax base, change in the social structure of the local community, and increased demand for community services and strain on the infrastructure (schools, hospitals, law enforcement, fire protection, and other community needs). These possible social and economic changes are beyond the scope of this document and to make those projections would be speculative at best.

Negative socioeconomic impacts may also stem from oil and gas exploration and development activities. These impacts are difficult to quantify accurately due to complex interactions, feedback loops, changing and unknown parameters. Adverse social and economic consequences for areas adjacent to rapid oil and gas development might include, for example, higher costs of living and decreases in recreational tourism revenue. While such impacts may occur, accurate valuation is not currently possible in a predictive capacity and, given the scale of the Proposed Action (four wells drilled); negative impacts of even a moderate degree should not be anticipated.

4.2.1.3 Visual Resources

The issuance of leases would not directly impact Visual Resources. However, as the BLM generally cannot deny all surface use of a lease unless the lease is issued as a No Surface Occupancy stipulation, the issuance of leases does convey an expectation that drilling and development would occur. For the purposes of this analysis, impacts to visual resources would be considered relevant if the impacts of the proposed project do not conform to an area's designated visual resource management (VRM) class objectives.

The potential direct adverse impacts to visual resources would include the visual contrasts created by construction equipment, pipelines, well pads, temporary and permanent access roads, and other forms of infrastructure associated with oil and gas exploration and development. In general, drilling rigs and equipment, construction and maintenance vehicles, development infrastructure, and surface disturbance, including roads, would impact an area's scenic quality and appearance of naturalness with human-made form, color, and linear contrasts. A visual contrast rating process will be used for the VRM analysis, which involves comparing the project features with the major features in the existing landscape to determine whether the Scenic Values of the BLM managed lands within each parcel have been maintained when an APD is received and if the areas are proposed for exploration. Lease stipulation UT-S-161 (VRM II) would be added to parcel UT0516-024 to disclose potential restrictions against future development in this parcel.

4.2.2 Alternative B – No Action

This alternative (not to offer any of the nominated parcels for sale) may not meet the need for the proposed action.

4.2.2.1 Air Quality

The No Action alternative would not result in potential impacts because the parcels would not be leased or developed.

4.2.2.2 Socio-Economics

The No Action alternative would not result in potential impacts because the parcels would not be leased or developed.

4.2.2.3 Visual Resources

The No Action alternative would not result in potential impacts because the parcels would not be leased or developed.

4.3 Cumulative Impacts Analysis

A cumulative impact is defined in Council on Environmental Quality (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. 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. 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.

The BLM follows draft guidance released in December 2014 from the Council on Environmental Quality (CEQ) to determine the extent and adequacy of NEPA analysis related to the emissions of greenhouse gas (GHG) emissions and climate change impacts that could result from these emissions. The presentation of GHG emissions and climate change analysis in this Lease EA is consistent with that guidance based on the following rational:

Rule of Reason

Agencies should be guided by a "rule of reason" in ensuring that the level of effort expended in analyzing GHG emissions or climate change effects is reasonably proportionate to the importance of climate change related considerations to the agency action being evaluated. This concept of proportionality is grounded in the fundamental purpose of NEPA to concentrate on matters that are truly significant to the proposed action (40 CFR §§ 1500.4(b), 1500.4(g), 1501.7.). In a leasing EA there is no substantive difference between any possible alternative, including the no action alternative, when addressing GHG emissions and their potential to impact global climate. Project-specific impacts from GHG's are by definition not project-area specific, but global in nature. While CEQ guidance cautions against using a comparison of global GHG emissions to project-specific GHG emissions as a stand-alone reason for no detailed analysis, that comparison related to potential impacts is crucial to an understanding on why project-specific GHG emissions can't be reasonably analyzed in a leasing EA. Any potential estimation of GHG emissions in a leasing EA will only represent a minute fraction of global GHG emissions, and by extension only represent an even smaller fraction of any potential impacts. It is not possible, nor reasonable, to try to calculate an exceedingly small fraction of potential impacts to some specific defined impact (e.g. average global temperature at X time in the future) using these metrics. What this means in practice is that a predication of a specific global impact based on project-specific GHG emissions estimations will invariably be so small as to be indistinguishable from no project-specific impact(i.e. no action alternative).

CEQ recommends that when an agency determines that evaluating the effects of GHG emissions from a proposed Federal action would not be useful to the decision-making process and the public to distinguish between the no-action and proposed alternatives and mitigations, the agency should document the rationale. This Lease EA discloses why additional analysis on GHG emissions and their relation to climate change is not possible, and is based on the relationship between project-specific emissions to potential predicted project-specific impacts. This rational is not a stand-alone reason for why no detailed analysis is possible, instead being part of a reasoned evaluation of the potential for the NEPA analysis to produce information useful to the decision-making process.

Availability of Input Data

In light of the difficulties in attributing specific climate impacts to individual projects, CEQ recommends agencies use the projected GHG emissions as a proxy for assessing a proposed action's potential climate change impacts. CEQ provides a reference point of 25,000 metric tons of CO2-e emissions on an annual basis below which a GHG emissions quantitative analysis is not warranted unless quantification below

that reference point is easily accomplished. This is considered an appropriate reference point that would allow agencies to focus their attention on proposed projects with potentially large GHG emissions.

A leasing EA by its nature does not include input data necessary to develop a reasonably accurate estimate of potential GHG emissions. There are many factors that significantly impact the potential for GHG emissions estimates within specific lease sales: a lease could not be purchased so no GHG emissions likely; a lease could be purchased but never explored so again no GHG emissions; a lease could be purchased and an exploratory (or wildcat) well drilled that showed no development potential, so minimal GHG emissions; or a lease could be purchased, explored, and developed. If developed there are huge differences in the potential for emissions related to a wide variety of variables, including the production potential of the well, economic considerations, regulatory considerations, and company dynamics to name a few. Given the extremely wide variety of potential GHG emissions scenarios resulting from a lease sale it is not reasonable, nor good NEPA practice, to analyze all these speculative outcomes. If a lease parcel is sold, explored, and developed a separate NEPA analysis will be required to implement a field development project. At that time more complete data will be available to analyze potential GHG emissions and their relationship to climate impacts.

Appropriate Level of Action for NEPA Review

CEQ recommends that an agency select the appropriate level of action for NEPA review at which to assess the effects of GHG emissions and climate change, either at a broad programmatic or landscape-scale level or at a project- specific level, and that the agency set forth a reasoned explanation for its approach. A specific example CEQ cited of a project- specific action that can benefit from a programmatic NEPA review is authorizing leases for oil and gas drilling. Given the aggregate nature of GHG contributions to global climate change, and the aggregate nature of climate change impacts to area-specific impacts analyzed in a field office NEPA document, it is readily apparent that the type of analysis suggested in the comments is more appropriate at a programmatic level, preferably at the regional or larger scale.

The past, current and future activities would cumulatively increase the modification done to the landscape and hence visual resources. This is viewed as negative impact when assessing the scenic quality of an area. The proposed action would contribute to these cumulative impacts by making four parcels available for lease and mineral development (one with VRM Class II areas, and three in VRM Class IV areas). Visual contrast analysis will be conducted to determine if development is in compliance with VRM standards when/if the project proponents begin the work of developing the minerals within the parcels. When a plan of development is created, site specific VRM analysis will be conducted.

A variety of activities, such as sightseeing, biking, camping, and hunting, have occurred and are likely to continue to occur near or within some or all of the nominated parcels; these activities likely result in positive impacts to the socio-economics of Sevier County. Other activities, such as farming, livestock grazing, vegetation projects, and wildland fire, have also occurred within some or all of 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.

The cumulative impacts as described in the Richfield RMP/FEIS are incorporated by reference to Chapter 4. The past, present, and foreseeable future actions with the potential to contribute to surface

disturbance include development of new and existing mineral rights or realty actions (for example, pipeline or road rights of way) or the continuation of agricultural & recreational activities. The No Action alternative would not contribute any cumulative impacts.

5.0 CONSULTATION AND COORDINATION

5.1 Introduction

Public and agency involvement has occurred as 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	Section 7 ESA	A letter was sent to the USFWS on August 20, 2015 which provided the preliminary list and notified them of the May 2016 lease sale. Coordination with USFWS for the May 2016 lease sale is ongoing. Formal consultation was completed as part of the RFO RMP/ROD in the form of the Biological Opinion. Threatened and endangered species are not present on the subject parcels.
Utah State Historic Preservation Office	Section 106 NHPA	A consultation request letter was sent to SHPO with a determination of no adverse effect.
State of Utah's Public Lands Policy Coordination Office	Coordinated with as leasing program partner.	A letter was sent on August 20, 2015 which provided the preliminary list and notified them of the May 2016 lease sale.
Utah Division of Wildlife Resources	Agency with expertise.	A letter was sent on August 20, 2015 which provided the preliminary list and notified them of the May 2016 lease sale.
National Park Service, Salt Lake City Office	Coordinated with as leasing program partner.	A letter was sent on August 20, 2015 which provided the preliminary list and notified them of the May 2016 lease sale.
U.S. Forest Service, Intermountain Region	Coordinated with as leasing program partner.	A letter was sent on August 20, 2015 which provided the preliminary list and notified them of the May 2016 lease sale.
Utah School and Institutional Trust Lands Administration	Coordinated with as leasing program partner.	A letter was sent on August 20, 2015 which provided the preliminary list and notified them of the May 2016 lease sale.
Paiute Indian Tribe of Utah Ute Indian Tribe Hopi Tribe Navajo Nation Utah Navajo Commission	American Indian Religious Freedom Act (1978) NHPA	A letter was sent to each of these tribes on October 13, 2015 informing them of the proposed action and soliciting any comments. A letter was received from the

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Southern Ute Tribe Ute Mountain Ute Kaibab Paiute Tribe Moapa Band of Paiute Indians Zuni Tribe		Hopi Tribe on October 26, 2015.
Sevier County Commissioners	Coordination	Proposed project was discussed at a Sevier County Commissioners meeting in August 2015. The County is in favor of leasing parcels and oil and gas development as proposed.
Split Estate Owners	Coordination	A letter was sent to the surface land owners of parcel UT0516-075 on August 20, 2015 notifying them of the May 2016 sale and inviting them to participate in the parcel site visit. One of the land owners called on September 14, 2015 to the Richfield Field Office to express their concern and to oppose leasing and development on this parcel.

5.3 Summary of Public Participation

In order to meet the intent of the CEQ regulations that require an "early and open process for determining the scope of issues to be addressed and for identifying significant issues related to a Proposed Action" (40 CFR 1501.7) several actions were taken to involve the public.

On October 20, 2015 the public was notified of the proposed action by posting on the BLM eplanning website. The process used to involve the public also includes a 30-day public review and comment period for the EA and unsigned FONSI offered from December 17, 2015 to January 21, 2016.

The BLM also refers to the public involvement processes utilized in developing the RFO ROD/RMP.

All the information related to this EA is maintained on the identified websites (eplanning and Oil and Gas Leasing).

BLM utilized and coordinated the NEPA public participation requirements to assist the agency in satisfying the public involvement requirements under Section 106 of the National Historic Preservation Act (NHPA) (16 U.S.C. 470(f) pursuant to 36 CFR 800.2(d)(3). The information about historic and cultural resources within the area potentially affected by the proposed project/action/approval will assist the BLM in identifying and evaluating impacts to such resources in the context of both NEPA and Section 106 of the NHPA. BLM consulted with Indian tribes on a government-to-government basis in accordance with Executive Order 13175 and other policies. Tribal concerns, including impacts on Indian trust assets and potential impacts to cultural resources, were given due consideration. Federal, State, and local agencies, along with tribes and other stakeholders that may be interested in or affected by the proposed project/action/approval were invited to participate in the scoping process.

5.3.1 Modifications Based on Public Comment and Internal Review

An 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. In general, these changes were made without further clarification. Examples include: updates to the Table of Contents, changes in font size, changes in verb tense and style or insertion of footnotes.
2. Appendix E – Response to Public Comments has been added which addresses issues raised from the draft EA.
3. Appendix F – Parcel Photos has been added to the EA.

5.3.2 Response to Public Comment

A 30-day public review and comment period for the EA and unsigned FONSI was offered from December 17, 2015 to January 21, 2016. BLM received comment letters from individuals and organizations including: the Hopi Tribe, Kathryn Albury, Alish Anderson, Trout Unlimited, and WildEarth Guardians.

The BLM acknowledges the support and concerns expressed by the public regarding the leasing of oil and gas resources on the public lands within the Richfield Field Office, including the subject lease parcels.

Information within the comments that is background or general in nature was reviewed; however, responses to or clarifications made to the EA from these items are not necessary. Likewise, expressions of position or opinion are acknowledged but do not cause a change in the analysis. As identified in the NEPA Handbook (H-1790-1, section 6.9.2.2 comment response), BLM looked for modifications to the alternatives and the analysis as well as factual corrections while reviewing public comments.

5.4 List of Preparers

Name	Title	Responsible for the Following Section(s) of this Document
Stan Andersen	Supervisory Natural Resource Specialist	Team Lead; Environmental Justice; Wastes (Hazardous or Solid), Geology/Mineral Resources/Energy Production; Paleontology; and Socio-Economics
Leonard Herr	Physical Scientist	Air Quality; and Greenhouse Gases and Climate Change
Jennifer Christensen	Outdoor Recreation Specialist	ACEC's; BLM Natural Areas; Recreation; Visual Resources; Wild and Scenic Rivers; and Wilderness/WSA
Lauren Kingston	Archeologist	Cultural Resources; and Native American Religious Concerns
Brant Hallows	Soil Scientist	Invasive Species/Non-Native Species (Noxious Weeds); Floodplains; Farmlands (Prime or Unique); and Soils/Watershed
Larry Greenwood	Wildlife Biologist	Fish and Wildlife; Migratory Birds; Utah Sensitive Plant and Animal Species other than FWS Candidate or Listed Species; Vegetation; Threatened, Endangered, or Candidate Animal Species; and Threatened, Endangered, or Candidate Plant Species
Bob Bate	Fuels Specialist	Fuels/Fire Management; and Woodland/Forestry
Mike Utley	Realty Specialist	Lands/Access
Mark Dean	Hydrologist	Water Resources/Quality (drinking/surface/ground); Wetlands /Riparian Zones; Hydrology
Brandon Jolley	Range Specialist	Livestock Grazing/Range; Rangeland Health Standards and Guidelines
Sue Fivecoat	Assistant Field Office Manager	Wild Horse and Burros

6.0 REFERENCES, ACRONYMS AND APPENDICES

6.1 References Cited

BLM. 2008. Richfield Field Office Record of Decision and Approved Resource Management Plan. Richfield Field Office, Utah, October 2008.

Parrish, J. R., F. P. Howe, and R. Norvell. 2002. The Utah avian conservation strategy, version 2.0. Salt Lake City, UT: Utah Partners in Flight Program, Utah Division of Wildlife Resources.

Utah Division of Air Quality, 2011, Annual Report for the Year 2011, Salt Lake City, Utah, 38 pp.

US Department of Interior and US Department of Agriculture. 2007. Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. 84 pp.

6.2 List of Acronyms

ACEC	Areas of Critical Environmental Concern
APD	Application for Permit to Drill
BLM	Bureau of Land Management
BMP	Best Management Practice
BCR	Bird Conservation Region
CFR	Code of Federal Regulations
CIA	Cumulative Impact Area
CSU	Controlled Surface Use
CWCS	Comprehensive Wildlife Conservation Strategy
DR	Decision Record
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FLPMA	Federal Land Policy and Management Act of 1976
FONSI	Finding of No Significant Impact
IDPR	Interdisciplinary Parcel Review
IM	Instruction Memorandum
LN	Lease Notice
LUP	Land Use Plan
NCLS	Notice of Competitive Lease Sale
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NSO	No Surface Occupancy
OSHA	Occupational Safety and Health Act
RFAS	Reasonably Foreseeable Action Scenario
RFD	Reasonably Foreseeable Development
RFO	Richfield Field Office
ROD	Record of Decision
ROW	Right-of-Way

SHPO	State Historic Preservation Office
UDWR	Utah Division of Wildlife Resources
USFWS	United States Fish & Wildlife Service
USC	United States Code
USO	Utah State Office
WO	Washington Office

6.3 List of Appendices

A. Oil and Gas Lease Sale List with Stipulations and Lease Notices
B. Parcel Map
C. Interdisciplinary Team Checklist
D. Deferred Parcel List
E. Response to Comments

APPENDIX A, OIL AND GAS LEASE SALE LIST

OIL AND GAS LEASE SALE LIST

In addition to the Stipulations listed below, the direction provided in Washington Office Memorandums WO-IM-2005-003 (Cultural Resources Stipulation) and WO-IM-2002-174 (Endangered Species Act Stipulation) should be applied to all parcels.

UT0516 - 021
T. 26 S., R. 4 W., Salt Lake
Sec. 1: Lot 4, NESW, S2SW, SE;
Secs. 10, 11 and 12: All.
2,239.32 Acres
Sevier County, Utah
Richfield Field Office

STIPULATIONS
UT-S-01: Air Quality
UT-S-102: CSU – Fragile Soils/Slopes 30 Percent or Greater
UT-S-233: TL – Crucial Mule Deer and Elk Winter Habitat

NOTICES
UT-LN-40: Golden Eagle Habitat
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-52: Noxious Weeds
UT-LN-65: Old Spanish Trail
UT-LN-68: Notification and Consultation Regarding Cultural Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis

UT0516 - 023
T. 26 S., R. 4 W., Salt Lake
Sec. 13: All;
Sec. 14: Lots 1, 5-12, NE, W2NW;
Sec. 15: Lots 1-3, E2, N2NW, SENW, E2SW.
1,712.70 Acres
Sevier County, Utah
Richfield Field Office

STIPULATIONS
UT-S-01: Air Quality
UT-S-102: CSU – Fragile Soils/Slopes 30 Percent or Greater
UT-S-233: TL – Crucial Mule Deer and Elk Winter Habitat

NOTICES
UT-LN-40: Golden Eagle Habitat
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-52: Noxious Weeds
UT-LN-65: Old Spanish Trail

UT-LN-68: Notification and Consultation Regarding Cultural Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis

UT0516 - 024
T. 26 S., R. 4 W., Salt Lake
Sec. 17: E2, E2W2;
Sec. 20: Lot 4, NE, NESE;
Sec. 21: Lots 2-4, 6-8, N2NW, SWNW, N2SW, NWSE.
1,045.42 Acres
Sevier County, Utah
Richfield Field Office

STIPULATIONS
UT-S-01: Air Quality
UT-S-102: CSU – Fragile Soils/Slopes 30 Percent or Greater
UT-S-121: NSO – Riparian and Wetland Areas
UT-S-161: CSU – VRM Class II Areas
UT-S-233: TL – Crucial Mule Deer and Elk Winter Habitat

NOTICES
UT-LN-40: Golden Eagle Habitat
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-52: Noxious Weeds
UT-LN-68: Notification and Consultation Regarding Cultural Resources
UT-LN-99: Regional Ozone Formation Controls
UT-LN-102: Air Quality Analysis

UT0516 - 025
T. 26 S., R. 4 W., Salt Lake
Sec. 21: Lots 1 and 5;
Sec. 22: Lots 1-3, 5, 6, NE, NENW, S2NW;
Secs. 23 and 24: All.
1,745.31 Acres
Sevier County, Utah
Richfield Field Office

STIPULATIONS
UT-S-01: Air Quality
UT-S-102: CSU – Fragile Soils/Slopes 30 Percent or Greater
UT-S-233: TL – Crucial Mule Deer and Elk Winter Habitat

NOTICES
UT-LN-40: Golden Eagle Habitat
UT-LN-45: Migratory Bird
UT-LN-49: Utah Sensitive Species
UT-LN-52: Noxious Weeds

UT-LN-65:	Old Spanish Trail
UT-LN-68:	Notification and Consultation Regarding Cultural Resources
UT-LN-99:	Regional Ozone Formation Controls
UT-LN-102:	Air Quality Analysis

LEASE STIPULATIONS SUMMARY

WO IM 2005-003 (Cultural Resources)	**CULTURAL RESOURCE PROTECTION STIPULATION** 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 statutes 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.
WO IM 2002-174 (Endangered Species Act)	**THREATENED AND ENDANGERED SPECIES ACT STIPULATION** The lease area may now or hereafter contain plants, animals or 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 objective to avoid BLM-approved activity that would contribute to a need to list such species or their habitat. BLM may require modifications 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 until it completes its obligations under applicable 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.
UT-S-01	**AIR QUALITY** All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horsepower shall not emit more than 2 grams of NO_x per horsepower-hour. **Exception:** This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower. **Modification**: None **Waiver**: None **AND** All new and replacement internal combustion gas field engines of greater than 300 design rated horsepower must not emit more than 1.0 gram of NO_x per horsepower-hour. **Exception**: None **Modification**: None **Waiver**: None

UT-S-102	**CONTROLLED SURFACE USE – FRAGILE SOILS/SLOPES 30 PERCENT OR GREATER** No surface disturbing proposed projects involving construction on slopes greater than 30. If the action cannot be avoided, rerouted, or relocated than a proposed project will include an erosion control strategy, reclamation and a site plan with a detailed survey and design completed by a certified engineer. This proposed project must be approved by the BLM prior to construction and maintenance. **Exception:** None **Modification:** None **Waiver**: None
UT-S-121	**NO SURFACE OCCUPANCY – RIPARIAN AND WETLAND AREAS** No surface disturbance and/or occupancy within buffer zones around natural springs. Base the size of the buffer on hydrological, riparian, and other factors necessary to protect the water quality of the springs. If these factors cannot be determined, maintain a 330-foot buffer zone from outer edge. **Exception:** Consider exceptions if it can be shown that (1) there are no practical alternatives to the disturbance, (2) all long-term impacts can be fully mitigated, and (3) the activity will benefit and enhance the riparian area. Consider compensatory mitigation where surface disturbance cannot be avoided within riparian wetland habitats on a site-specific basis. **Modification:** None **Waiver:** None
UT-S-161	**CONTROLLED SURFACE USE – VRM CLASS II AREAS** Surface disturbing activities must meet the objectives of Visual Resource Management (VRM) Class II. **Exception:** The level of change to the landscape should be low; management activities may be seen, but should not attract the attention of the casual observer. Any change to the landscape must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape. Surface disturbing activities that are determined to be compatible and consistent with the protection or enhancement of the resource values are exempted. Also, recognized utility corridors are exempted only for utility projects, which would be managed according to VRM Class III objectives. **Modification**: None **Waiver**: None.

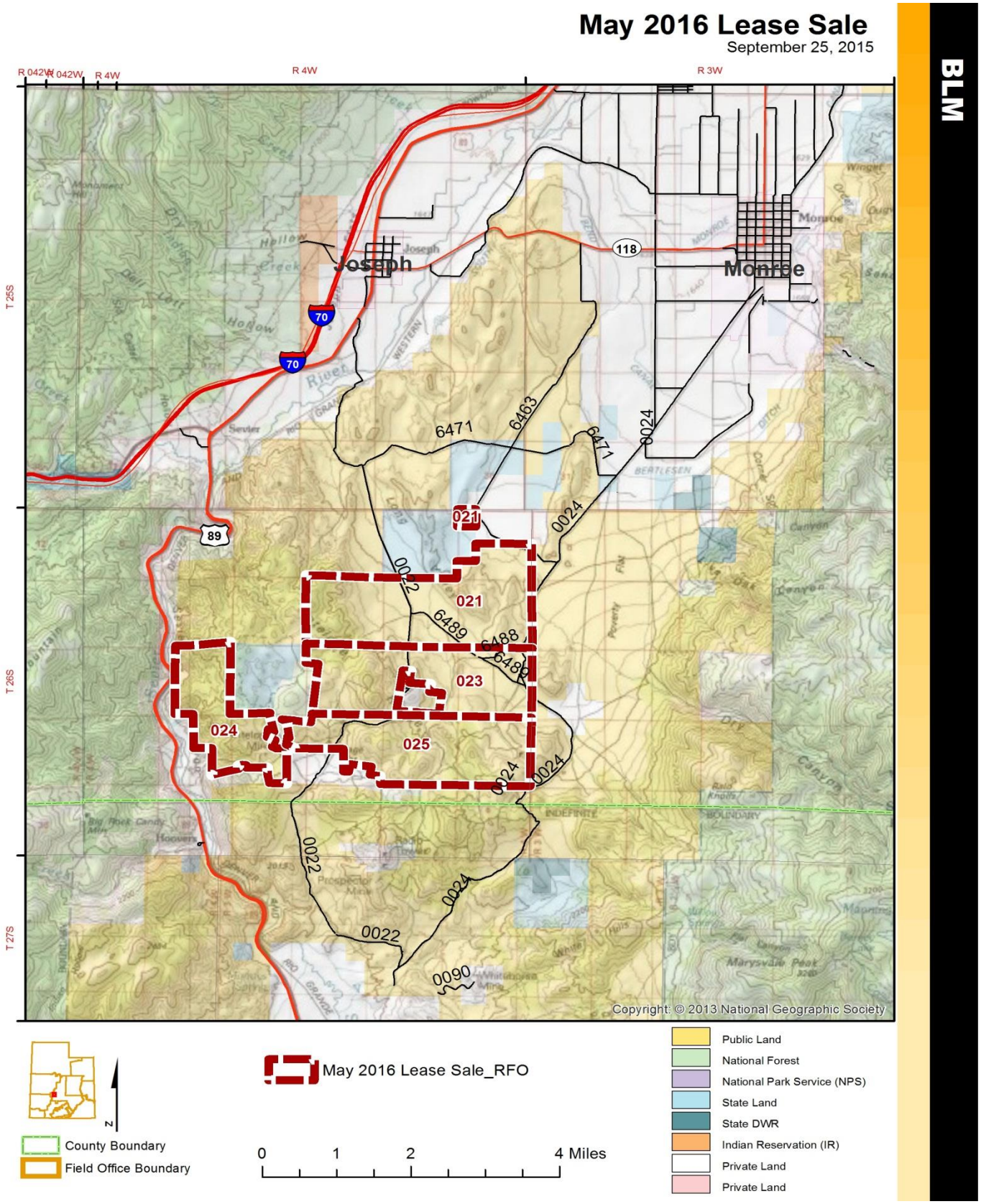
UT-S-233	**TIMING LIMITATION - CRUCIAL MULE DEER AND ELK WINTER HABITAT** No surface disturbing activities within crucial mule deer and elk habitats from December 15 through April 15 to protect winter habitats. **Exception:** This stipulation does not apply to the maintenance and operation of existing and ongoing facilities. An exception may be granted by the authorized officer if the operator submits a plan that demonstrates that impacts from the proposed action can be adequately mitigated or it is determined the habitat is not being used during the winter period for any given year. **Modification:** The authorized officer may modify the boundaries of the stipulation area if (1) a portion of the area is not being used as crucial winter range by deer/elk, (2) habitat outside of stipulation boundaries is being used as crucial winter range and needs to be protected, or (3) the migration patterns have changed causing a difference in the season of use. **Waiver:** A waiver may be granted if the winter range habitat is unsuitable or unoccupied during winter months by deer/elk and there is no reasonable likelihood of future winter range use.

LEASE NOTICES SUMMARY

UT-LN-40	**GOLDEN EAGLE HABITAT** The lessee/operator is given notice that lands in this lease have been identified as containing Golden Eagle Habitat. Modifications to the Surface Use Plan of Operations may be required in order to protect the Golden Eagle 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-45	**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.
UT-LN-49	**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-52	**NOXIOUS WEEDS** The lessee/operator is given notice that lands in this lease have been identified as containing or are near areas containing noxious weeds. Best management practices to prevent or control noxious weeds may be required for operations on the lease.
UT-LN-65	**OLD SPANISH TRAIL** The lessee/operator is given notice that lands in this lease are crossed by the Old Spanish Trail National Historic Trail [Old Spanish Trail Recognition Act of 2002, (Old Spanish Trail PLO 107-325)]. Modifications to the Surface Use Plan of Operations may be required in order to protect the historic integrity of the trail. Coordination with the National Park Service may be necessary.

UT-LN-68	**NOTIFICATION & CONSULTATION REGARDING CULTURAL RESOURCES** The lease area may now or hereafter be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), the Archaeological Resources Protections Act (ARPA), the Native American Graves Protection and Repatriation Act (NAGPRA), the American Indian Religious Freedom Act (AIRFA), other statues and Executive Order 13007, and which may be of concern to Native American tribes, interested parties, and the State Historic Preservation Officer (SHPO). BLM will not approve any ground disturbing activities as part of future lease operations until it completes applicable requirements of the National Historic Preservation Act (NHPA), including the completion of any required procedure for notification and consultation with appropriate tribe(s) and/or the SHPO. BLM may require modifications to exploration and development proposals to further its conservation and management objectives on BLM-approved activities that are determine to affect or impact historic or cultural properties and/or resources.
UT-LN-99	**REGIONAL OZONE FORMATION CONTROLS** To mitigate any potential impact oil and gas development emissions may have on regional ozone formation, the following Best Management Practices (BMPs) would be required for any development projects: • Tier II or better drilling rig engines • Stationary internal combustion engine standard of 2g NOx/bhp-hr for engines <300HP and 1g NOx/bhp-hr for engines >300HP • Low bleed or no bleed pneumatic pump valves • Dehydrator VOC emission controls to +95% efficiency • Tank VOC emission controls to +95% efficiency
UT-LN-102	**AIR QUALITY ANALYSIS** The lessee/operator is given notice that prior to project-specific approval, additional air quality analyses may be required to comply with the National Environmental Policy Act, Federal Land Policy Management Act, and/or other applicable laws and regulations. Analyses may include dispersion modeling and/or photochemical modeling for deposition and visibility impacts analysis, control equipment determinations, and/or emission inventory development. These analyses may result in the imposition of additional project-specific air quality control measures.

APPENDIX B, PARCEL MAP


May 2016 Lease Sale
September 25, 2015
BLM
R 4W
R 3W
T 25S
T 26S
T 27S
Joseph
Monroe
118
70
89
6471
6463
0024
021
0022
6489
6488
023
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025
0090
Copyright: © 2013 National Geographic Society
May 2016 Lease Sale_RFO
County Boundary
Field Office Boundary
0 1 2 4 Miles
Public Land
National Forest
National Park Service (NPS)
State Land
State DWR
Indian Reservation (IR)
Private Land
Private Land

APPENDIX C, INTERDISCIPLINARY TEAM CHECKLIST

INTERDISCIPLINARY TEAM CHECKLIST

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

Determi-nation	Resource	Rationale for Determination*	Signature	Date
RESOURCES AND ISSUES CONSIDERED (Includes Supplemental Authorities Appendix 1 H-1790-1)				
PI	Air Quality	The act of leasing does not result in emissions of air pollutants, so has no impact on air resources. If a lease parcel is sold and developed, the construction and operation of oil and gas wells would result in emissions of criteria pollutants which would need to be appropriately analyzed in any subsequent NEPA once specific devolvement plans are presented. A representative emissions inventory for a single well should be included in the EA to disclose the types and likely amounts of emissions which could result from development of the parcel. Stipulation UT-S-01 and Lease Notices UT-LN-99 and UT-LN-102 should be attached to all parcels.	Leonard Herr	9/23/2015
NP	Areas of Critical Environmental Concern	The 2008 Richfield Field Office RMP was reviewed; there are no Areas of Critical Environmental Concern within the proposed action area.	Jennifer Christensen	8.27.2015
NP	BLM Natural Areas	The 2008 Richfield Field Office RMP was reviewed; there are no BLM Natural Areas within the proposed action area.	Jennifer Christensen	8.27.2015
NI	Cultural Resources	A cultural resource records search and analysis was completed the four proposed parcels associated with the May 2016 oil and gas lease. Analysis indicted that site density was low within the seven proposed parcels. To date, a total of eight cultural resource inventories have been carried out within the four parcels, recording fourteen archaeological sites. The record search and analysis resulted in the supposition that the parcels are located in an area of low archeological site density; and therefore, potential lessees could likely place oil and gas facilities within most of the areas of the parcels without impacting cultural resources. Three sites are considered to be eligible to the National Register, 42SV2502, the historic Denver & Rio Grande Western Railroad, Marysvale Branch, located in parcel 024; 42SV2811, an extensive prehistoric camp and artifact scatter, located near the boundary of 021and 023; and SV2818, a prehistoric open campsite, located in parcels 23 and 25. The standard leasing stipulation quoted in the proposed action will be added to all parcels. Because none of the parcels have been extensively inventoried, Lease Notice UT-LN-68 (Notification and Consultation Regarding Cultural Resources) should also be added to all four. Also, the Congressionally designated location of the Old Spanish Trail (OST) lies within parcels 021, 023, and 025. The BLM is currently consulting with the National Park Service and Old Spanish Trail Association on the treatment of the trail in these parcels. Lease Notice UT-LN-65 should be added to Parcels 021, 023, and 025 to protect the integrity of	Lauren Kingston	10/01/15

Determi-nation	Resource	Rationale for Determination*	Signature	Date
		the trail corridor. If consultation results in additional protections than the checklist will be updated before the submission of the final EA. UT-LN-65: "The lessee/operator is given notice that lands in this lease are crossed by the Old Spanish Trail National Historic Trail (Old Spanish Trail Recognition Act of 2002, (Old Spanish Trail PLO 107-325)). Modifications to the Surface Use Plan of Operations may be required in order to protect the historic integrity of the trail. Coordination with the National Park Service may be necessary." As reflected in the language of the stipulation and the lease notices, prior to any exploration or development, the Affected area would be surveyed for cultural resources, and the project would be designed to avoid impacts to any resources identified. Leasing would not result in impacts beyond those identified in the RMP/EIS.		
NI	Environmental Justice	As defined in EO 12898, minority, low income populations and disadvantaged groups may be present within the counties involved in this lease sale. The stipulations and notices applied to the subject parcels do not place an undue burden on these groups. Leasing would not adversely or disproportionately affect minority, low income or disadvantaged groups.	Stan Andersen	9/15/2015
NP	Farmlands (Prime or Unique)	None of the identified parcels qualify as prime or unique farmlands according to the NRCS Soil Survey of the Sevier County Area. There are parcels that are categorized as 'prime if irrigated'. However, to be classified as 'prime' they require a dependable moisture supply that comes from either precipitation or irrigation. Because all water is already allocated throughout the water basins, and precipitation does not provide adequate amounts, there is no dependable water source for those lands classified as 'prime if irrigated' and therefore do not warrant special protective measures.	Brant Hallows	9/24/15
NI	Fish and Wildlife Excluding USFWS Designated Species	Detailed information on the inclusion of the appropriate lease notices and stipulations are contained in the RMP. A particular species habitat and corresponding criteria were identified from GIS data layers developed by the BLM, Utah Division of Wildlife Resources/Utah Natural Heritage Program data and field office records. These habitats are addressed in the LUP and provided needed protections through stipulations or notices. Crucial deer and elk winter/spring range occurs on the following parcels: 021, 023, 024, and 025. The application of stipulation UT-S-233 is warranted on these parcels.	Larry Greenwood	8-25-15
NI	Floodplains	Through design features, BLM would avoid occupancy and modification of floodplain development. The hazard degree is low. Impacts to floodplains are not expected to reach a level that would require adding a lease notice to any of the parcels. Refer also to the riparian and wetland areas discussion. Also, the proposed action will not increase the risk of flooding or damage to human life and property and it will not be contrary to Executive Order 11988 – Floodplain Management.	Brant Hallows	9/24/15

Determi-nation	Resource	Rationale for Determination*	Signature	Date
NI	Fuels/Fire Management	The proposed action would have no impact on Fuels/Fire Management. The implementation of appropriate reclamation standards at the APD stage would prevent an increase of hazardous fuels.	Bob Bate	8/27/15
NI	Geology / Mineral Resources/Energy Production	There have been numerous historic potash and uranium mines. Claims that are present or staked prior to drilling activities can be accommodated by the proposed action. Prior to ground disturbing activities a mining claim search should be conducted. 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. The RMP/FEIS adequately addresses the impacts of oil and gas and stipulations for leasing and drilling/production operations in those specific sections on minerals and energy Chapters 3 and 4 and Appendices 11 and 12 of the RMP. Exploration/Production of Oil and Gas would be consistent with management objectives of the RMP. Oil and gas exploration could lead to an increased understanding of the geologic setting, as subsurface data obtained through lease operations may become public record. This information promotes an understanding of mineral resources as well as geologic interpretation. While conflicts could arise between oil and gas operations and other mineral operations, these could generally be mitigated under the regulations 3101.1-2, where proposed oil and gas operations may be moved up to 200 meters or delayed by 60 days and also under the standard lease terms (Sec. 6) where sitting and design of facilities may be modified to protect other resources.	Stan Andersen	9/15/2015
PI	Greenhouse Gasses	It is unlikely project-specific impacts would be able to be determined from likely amounts of GHG's from lease development. A qualitative description of climate change impacts should be included in the EA.	Leonard Herr	9/23/2015
NI	Hydrology	See Water Resources/Quality (drinking/surface/ground) below	Mark Dean	8/28/2015
NI	Invasive Species/Noxious Weeds (EO 13112)	Noxious/invasive weed species may be present on the subject parcels. The BLM coordinates with County and local governments to conduct an active program for control of invasive species. The lessee/operator is given notice that lands in this lease have been identified as containing or are near areas containing noxious weeds. Standard operating procedures such as washing of vehicles and annual monitoring and spraying along with site specific mitigation applied as conditions of approval (COA) at the APD stage should be sufficient to prevent the spread or introduction of Invasive, Non-native species. All disturbed areas and piles of top soil should be reseeded with weed free seed the first fall after the disturbance is made to provide competition against weeds. Other constraints, including the use of certified weed free seed and vehicle/equipment wash stations, would be applied as necessary at the APD stage as documented in filing plans and conditions of approval. Control measures would be implemented during any ground disturbing activity.	Brant Hallows	9/24/15

Determi-nation	Resource	Rationale for Determination*	Signature	Date
		Treatment will occur as part of regular operations, BMPs, SOPs and site specific mitigation applied at the APD stage as COAs. Negligible impacts would be expected as a result of leasing and exploration. All disturbed areas and piles of top soil should be reseeded with weed free seed the first fall after the disturbance is made to provide competition against weeds. These expectations are required for all parcels in the lease. Application of UT-LN-52 is warranted on all parcels.		
NI	Lands/Access	As described, the proposed action would not substantially affect access to public land on a permanent basis. No roads providing access to public land would be closed for any extended period of time. The proposal would be subject to valid prior existing rights including county-maintained roads (See BLM internal/public Master Title Plat web site as there are various rights-of-way in the proposed areas). Any operations would be coordinated with right-of-way (ROW) holders and adjacent non-federal landowners. Off-lease ancillary facilities that cross public land, if any, may require a separate authorization (Generally Access Roads and utility ROW). It is anticipated that existing ROW in proposed operation areas would not be affected because site-specific mitigation applied at the APD stage, including the ability to move operations up to 200 meters in any direction required. These measures would ensure that existing ROW would be avoided, restored, or replaced if damaged. Seasonal route restrictions should also be dealt with through site-specific mitigation on an as-needed basis. Surface disturbance within and outside described project areas would need to be rehabilitated and reseeded on a site-specific basis as directed by authorizing BLM officials. Plans should be made for removal of any generated trash/debris from public land and discarded at an authorized facility.	/s/Michael B. Utley	9/15/2015
NI	Livestock Grazing/Range	Lease of the parcels will not impact livestock grazing within the identified grazing allotments. However, there is an inherent expectation that there may be oil or gas activities 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 provisions/procedures including re-vegetation (utilizing appropriate seed mix based on the 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.	Brandon Jolley	8/26/2015
NI	Migratory Birds	Habitat for priority migratory birds occurs on all four parcels. The application of lease notice UT-LN-45 is warranted on all parcels. The following documents are incorporated: Utah	Larry Greenwood	8-25-15

Determi-nation	Resource	Rationale for Determination*	Signature	Date
		Comprehensive Wildlife Conservation Strategy (CWCS), Utah Partners in Flight Avian Conservation Strategy Version 2.0. (Parrish, et.al. 2002), 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), and Utah Supplemental Planning Guidance: Raptor Best Management Practices (BLM UTSO IM 2006-096)		
NI	Native American Religious Concerns	Letters containing notification of this lease sale and the results of the cultural resources records search will be sent to the following tribes October 13, 2015 to the following Tribes: Paiute Indian Tribe of Utah, Ute Indian Tribe, Hopi Tribe, Navajo Nation, Utah Navajo Commission, Southern Ute Tribe, Ute Mountain Ute, White Mesa Ute, Kaibab Paiute Tribe, and Zuni Pueblo. If any additional concerns are raised by the tribes, those concerns will be addressed as necessary through further consultation.	Lauren Kingston	10/01/15
NI	Paleontology	These lease parcels contains lands that are of moderate and low paleontological sensitivity. There are no known paleontological resources in this area. While drilling and other oil and gas exploration and recovery operations present the potential for damage of paleontological resources, existing laws, regulations and policies provide for mitigation of effects through avoidance or data recovery efforts. If vertebrate fossils or other fossils of scientific interest are encountered they would be protected under existing regulatory authority (43CFR 3101.1-2). If vertebrate or other fossil remains of potential scientific value are encountered, operations will be suspended and a BLM representative notified so that the find can be evaluated. Facility siting, design and operational timing may also be modified to protect paleontological and other resources under Standard Lease Terms (OFFER TO LEASE AND LEASE FOR OIL AND GAS, Form 3100-11).	Stan Andersen	9/15/2015
NI	Rangeland Health Standards & Guidelines	Leasing of these parcels would not impact Rangeland Health Standards. However, there is an inherent expectation that oil or gas activity could occur on any or all of the leased parcels. Any activity that involves surface disturbance or direct resource impacts would have to be authorized as a new project 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. Design features necessary for the protection of water quality, soils, vegetation, threatened & endangered species habitat and other ecological features (rangeland health components) are incorporated. Refer also to the corresponding discussion in this checklist. Given the degree of anticipated exploration and application of SOPs, BMPs and design features applied at the	Brandon Jolley	8/26/2015

Determi-nation	Resource	Rationale for Determination*	Signature	Date
		APD stage as conditions of approval it is concluded that rangeland health standards would be met.		
NI	Recreation	There are no Special Recreation Management Areas (SRMAs) within the proposed action area. Recreation in the area is primarily dispersed recreation as part of the Extended Recreation Management Area (ERMA). There are recreation concentrations and developed recreation activities that do take place within the proposed action area. The Paiute Trail and other OHV opportunities are within the proposed parcels. Other dispersed recreation that may take place within the proposed parcels include hiking, mountain biking, equestrian use, wildlife viewing, OHV use on designated roads and trails, photography, and more. The Old Spanish National Historic Trail also passes through the proposed action area. As the parcels are easily accessible from nearby communities and provide access from communities to recreation opportunities, recreation concentration and urban interface opportunities must be considered. Although some of these recreation opportunities may only be displaced temporarily, recreation centers, developed and dispersed activities, and increased traffic should be addressed in further NEPA. Impacts to recreation by oil and gas leasing, exploration, and development would vary and need to be evaluated on a case by case basis in additional NEPA when an APD is filed.	Jennifer Christensen	8.27.2015
PI	Socio-Economics	Drilling and exploration wells could impact the local social structure and economy.	Stan Andersen	9/15/2015
NI	Soils / Watersheds	Leasing would not have an impact on these resources; however there is a possibility that exploration/development could occur in the future. If exploration/development is proposed, these actions could have impacts to soils and watersheds and these actions would be analyzed in separate NEPA documents at the time of the proposal. SOPs, BMPs and site specific design features including reclamation would be applied at the APD stage as COAs to mitigate soil disturbing actions on soils and watersheds. The application of stipulation UT-S-102 is warranted on all parcels. UT-S-102: "No surface disturbing proposed projects involving construction on slopes greater than 30 percent. If the action cannot be avoided, rerouted, or relocated then a proposed project will include an erosion control strategy, reclamation and a site plan with a detailed survey and design completed by a certified engineer. This proposed project must be approved by the BLM prior to construction and maintenance." In light of existing knowledge and data regarding soils/watersheds for the subject parcels and the protective measure that would be applied to development on the parcels, significant impacts are not anticipated to occur as a result of leasing the proposed parcels.	Brant Hallows	10/5/15
NI	Utah Sensitive Plant and Animal Species	The burrowing owl and its habitat are found within the following parcels: 021, 023, 024, and 025. Lease Notice LN-UT-49 is warranted on these parcels.	Larry Greenwood	8-25-15

Determi-nation	Resource	Rationale for Determination*	Signature	Date
		Habitat for the sensitive Ferruginous Hawk is found within all four parcels. Application of lease notice UT-LN-49 is warranted on all parcels. Golden Eagle habitat occurs on all four parcels and lease notice UT-LN-40 is warranted on all parcels. Washington Office BLM lease stipulation as directed by WO IM No. 2002-174 would apply to all parcels. The Utah BLM State Office has determined that Section 7 consultation with the U.S. Fish and Wildlife Service (FWS) has been completed for all lease sales as follows: In October, 2008, a Biological opinion from the FWS was a portion of the approved RMP. BLM and FWS personnel completed work on set of lease notices for listed species that are to be attached to oil and gas leases offered in the State. The notices contain current avoidance and minimization measures that if followed could reduce the scope of Section 7 consultation at the permit stage. FWS responded with a memorandum which basically stated the following: "We concur that the sale of oil and gas lease parcels, with the species-specific lease notices, results in a "not likely to adversely affect" determination." The State Office will send the findings of this report to the Utah Ecological Services Field Office in Salt Lake City reporting any threatened and endangered species found on the parcels and all applicable lease notices in order to complete informal consultation for this lease sale with USFWS.		
NP	Threatened, Endangered or Candidate Plant Species	The standard lease stipulation quoted in the proposed action will be added to all parcels. However, no Threatened, Endangered or Candidate Plant Species are known to occur on the proposed parcels.	Larry Greenwood	8-25-15
NI	Threatened, Endangered or Candidate Animal Species	The standard lease stipulation quoted in the proposed action will be added to all parcels. However, no Threatened, Endangered or Candidate animal species or their habitat are known to occur on any of the parcels.	Larry Greenwood	8-25-15
NI	Vegetation	SOPs, BMPs and site specific design features applied at the APD stage including reclamation, as COA would address soil resource issues not already analyzed in the FEIS/PRMP. Leasing fluid minerals would have little or no impact on the vegetative resource of these parcels. The impact would happen if and when actual drilling etc. occurs on the parcel. If drilling is proposed, then the appropriate NEPA and its associated checklist will address impacts. If an Application to Drill Permit (APD) is received Best Management Practices (BMPs) and site specific design features to minimize disturbance to vegetation would be applied as Conditions of Approval.	Larry Greenwood	8-25-15
PI	Visual Resources	The identified parcels on BLM lands in the proposed action fall into VRM classes II, and IV.	Jennifer Christensen	8.27.2015
NI	Wastes (hazardous or solid)	There are currently no known waste issues associated with the proposed lease areas. If development of roads or well pads occur, potential release from equipment could be possible. State and Federal regulations would govern the use,	Stan Andersen	9/15/2015

Determi-nation	Resource	Rationale for Determination*	Signature	Date
		storage and disposal of any products that could potentially impact persons or environment. Reporting and mitigation efforts would be required should such an event occur.		
NI	Water Resources/Quality (drinking/surface/ground)	Oil and Gas development that may occur as a result of this lease sale may affect water resources. The decision to lease is connected to these impacts; however it does not affect water resources to a degree that detailed analysis is required. There are numerous best management practices, standard operating procedures and rules associated with oil and gas development and exploration that are formulated to protect water resources. Internal scoping has determined that it is generally accepted that these measures would minimize the potential for impacts to water resources and therefore detailed analysis is not required for a lease level EA. It may be necessary to undertake detailed analysis of impacts to water resources when specific plans for development are proposed, but the decision whether to complete NEPA analysis will be made at that time based on scoping, issue sensitivity, and other considerations. There are no standard notices or stipulations attached to the proposed parcels. There are no Drinking water protection zones present.	Mark Dean	8/28/2015
NI	Wetlands / Riparian Zones	Oil and Gas development that may occur as a result of this lease sale may affect riparian areas indirectly through impacts to water resources as described above. Similarly, internal scoping has determined that it is generally accepted that these measures would minimize the potential for impacts to water resources and therefore detailed analysis is not required for a lease level EA. Portions of parcel UT-0516-024 is within 330’ of a riparian area and therefore stipulation UT-S-121 should be applied to this parcel.	Mark Dean	8/28/2015
NP	Wild and Scenic Rivers	The 2008 Richfield Field Office RMP was reviewed; there are no Wild and Scenic Rivers within the proposed action area.	Jennifer Christensen	8.27.2015
NP	Wilderness/WSA	The 208 Richfield Field Office RMP was reviewed, there are no Wilderness or WSA areas within the proposed action area.	Jennifer Christensen	8.27.2015
NP	Wild Horses and Burros	The RFO RMP has been reviewed. The parcels proposed are not within in any Wild Horse & Burro management area. None are present.	Sue Fivecoat	8.25.15
NI	Woodland / Forestry	Leasing fluid minerals would have little or no impact on the Woodland/Forestry products. The impact would happen if and when actual drilling etc. occurs on the parcel. If drilling is proposed, then the appropriate NEPA and its associated checklist will address impacts. If an Application to Drill Permit (APD) is received Best Management Practices (BMPs) and site specific design features to minimize disturbance to vegetation would be applied as Conditions of Approval.	Bob Bate	8/27/15
	Other Applicable Resources / Issues**			

FINAL REVIEW:

Reviewer Title	Signature	Date	Comments
Environmental Coordinator			
Authorized Officer			

APPENDIX D, DEFFERRED PARCEL LIST

DEFERRED PARCEL LIST

Date Nominated	Parcel Number	Legal Description	Acres	Reason Tract Postponed	Land Use Plan
July 1, 2015	UT0516 - 001 Piute County, Utah Richfield Field Office	T. 30 S., R. 1 W., Salt Lake Secs. 17 and 18: All; Sec. 19: Lots 1, 6, E2NE, N2SWNE, S2N2SESW, S2SESW, NESE, S2NWSE, S2SE.	1,510.92	Parcel contains priority habitat for greater sage-grouse.	Richfield RMP
July 1, 2015	UT0516 - 002 Piute County, Utah Richfield Field Office	T. 30 S., R. 1 W., Salt Lake Secs. 29, 30 and 31: All.	1,765.63	Parcel contains priority habitat for greater sage-grouse.	Richfield RMP
July 1, 2015	UT0516 - 003 Garfield County, Utah Richfield Field Office	T. 31 S., R. 1 W., Salt Lake Secs. 6, 7 and 18: All; Sec. 19: NE.	2,358.44	Parcel contains priority habitat for greater sage-grouse.	Richfield RMP
July 1, 2015	UT0516 - 004 Garfield County, Utah Richfield Field Office	T. 31 S., R. 1 W., Salt Lake Sec. 30: Lots 2, 3, NE, SENW, NESW, N2SE, SESE; Sec. 31: Lots 2-4, E2NE, E2SW, SE.	847.63	Parcel contains priority habitat for greater sage-grouse.	Richfield RMP
July 1, 2015	UT0516 - 005 Piute County, Utah Richfield Field Office	T. 30 S., R. 2 W., Salt Lake Sec. 13: All; Sec. 14: NE, SENW, S2; Sec. 15: SESE.	1,205.78	Parcel contains priority habitat for greater sage-grouse.	Richfield RMP
July 1, 2015	UT0516 - 006 Piute County, Utah Richfield Field Office	T. 30 S., R. 2 W., Salt Lake Sec. 15: NW, N2SW, SWSW; Sec. 21: N2, SW, N2SE, SWSE; Sec. 22: NWNW; Sec. 28: NWNE, NENW, N2NWNW, N2SWNWNW,	1,035.00	Parcel contains priority habitat for greater sage-grouse.	Richfield RMP

		SENWNW.			
July 1, 2015	UT0516 - 007 Piute County, Utah Richfield Field Office	T. 30 S., R. 2 W., Salt Lake Sec. 22: E2, E2SW; Secs. 23, 24 and 25: All.	2,321.52	Parcel contains priority habitat for greater sage-grouse.	Richfield RMP
July 1, 2015	UT0516 - 008 Piute County, Utah Richfield Field Office	T. 30 S., R. 2 W., Salt Lake Sec. 26: All; Sec. 27: E2, E2NW, W2SW; Sec. 33: SWNW, W2SW; Sec. 34: N2NE, SENE, SESE; Sec. 35: All.	2,040.00	Parcel contains priority habitat for greater sage-grouse.	Richfield RMP
July 1, 2015	UT0516 - 009 Garfield County, Utah Richfield Field Office	T. 31 S., R. 2 W., Salt Lake Sec. 1: All; Sec. 11: Lots 1-6, W2SE; Sec. 12: All.	1,609.40	Parcel contains priority habitat for greater sage-grouse.	Richfield RMP
July 1, 2015	UT0516 - 010 Garfield County, Utah Richfield Field Office	T. 31 S., R. 2 W., Salt Lake Sec. 13: All; Sec. 14: E2; Sec. 25: Lots 1-4, S2N2, SW.	1,444.24	Parcel contains priority habitat for greater sage-grouse.	Richfield RMP
July 1, 2015	UT0516 - 019 Sevier County, Utah Richfield Field Office	T. 25 S., R. 4 W., Salt Lake Sec. 12: NESE, S2SE; Sec. 13: E2, NESW, S2SW; Sec. 23: NESE, S2SE; Sec. 24: All	1,320.00	Parcel was previously nominated in 2012. Parcel contains important cultural site features. The Hopi Tribe requested that this parcel be withdrawn from the lease sale. Utah State Historic Preservation Officer (SHPO) concurred.	Richfield RMP

July 1, 2015	UT0516 - 022 Sevier County, Utah Richfield Field Office	T. 26 S., R. 4 W., Salt Lake Secs. 3 and 4: All; Sec. 5: SESW, S2SE; Sec. 8: E2, E2W2; Sec. 9: All.	2,517.40	Parcel was previously nominated in 2012. Parcel contains important cultural site features. The Hopi Tribe requested that this parcel be withdrawn from the lease sale. Utah State Historic Preservation Officer (SHPO) concurred.	Richfield RMP
July 1, 2015	UT0516 - 075 Sevier County, Utah Richfield Field Office Private Surface Owners	T. 25 S., R. 4 W., Salt Lake Secs. 13, 14 and 23: M&B (See Sale List for complete legal description).	197.77	Proximity to the town of Joseph, associated private residences, and presence of Sevier River floodplain.	Richfield RMP

APPENDIX E, RESPONSE TO COMMENTS

Comment 1 - Hopi Tribe: "We have reviewed the enclosed a records search of the four parcels, which states that percentage of the surveyed area in the parcles ranges from 1.81 to 10.27% of each parcel and identifies eight prehistoric sites, two of which are National Register eligible. We appreciate that two parcels containing significant cultural resources that were deferred from leasing in 2012 will continue to be deferred. We hereby request that these parcels are withdrawn from leasing permanently."

BLM Response to Comment 1: *Parcels UT0516–019 and UT0516-022 have been deferred (see Appendix D – Deferred Parcel), these areas may be permanently removed from leasing when the Richfield Field Office updates their Resource Management Plan in the future.*

Comment 2 – Kathryn Albury: "Please reconsider leasing this site. I am particularly concerned about the potential for mining in the vicinity of the Pando Quaking Aspen and the Greater Sage Grouse.

It would be hypocritical to allow further fossil fuel development in this region or any other given our nation's pledge to reduce Greenhouse Gas Emissions at the Paris Climate talks."

BLM Response to Comment 2: *Proposed lease parcels are approximately 30 miles away from the Pando Aspen clone and do not affect any aspen vegetation communities, and are also not located in Greater Sage Grouse habitat (see Appendix C – Interdisciplinary Team Checklist). A detailed analysis for Air Quality/Greenhouse Gases can be found within this Environmental Assessment (see Section 4.2.1.1).*

Comment 3 – Alisha Anderson: "Beyond the fact that these leases will exacerbate climate change globally, there are effects locally, as well. These are public lands. The BLM is to conserve land for "the use and enjoyment of present and future generations." Yes, they are to be managed as "multiple-use," but must that always mean monetary gain wins? Please, leave these lands--as they are--for us, for future generations, for the life that lives there this very moment."

BLM Response to Comment 3: *BLM offers parcels to be leased as directed by the Minerals Leasing Act section 226(b)(1)(A), and 43 CFR 3120.1-2(a) when lands have been determined to be eligible and open to leasing.*

Comment 4 – Trout Unlimited: "We are commenting on this lease sale EA to draw attention to the fisheries resources found in the Sevier River and the vicinity of lease parcel UT0516-024. The EA fails to mention any fisheries issues or the potential impact associated with the proposed actions to fisheries and this watershed."

BLM Response to Comment 4: *BLM resource specialists evaluate the proposed action and prescribe any necessary stipulations and lease notices to help mitigate environmental impact of the proposed action. For lease parcel UT0516-024 there were a number of stipulation and notices that have been attached to this parcel including: UT-S-102 CSU – Fragile Soils/Slopes 30 Percent or Greater; UT-S-121 NSO – Riparian and Wetland Areas; and UT-S-161 CSU – VRM Class II (see pages 36-40 of this EA for the actual Lease Stipulation and Lease Notices). All of the aforementioned lease stipulations were considered when the resource specialists made the determinations that the proposed action would have no impact on fishery health and water quality. Additionally when an Application for Permit to Drill (APD) is received various mitigation measures and best management practices are attached to the permit as conditions of*

approval to lessen the impacts of oil and gas exploration/development.

Comment 5 – WildEarth Guardians: "BLM fails to follow the Council on Environmental Quality guidance on climate change and NEPA."

BLM Response to Comment 5: Greenhouse Gases (GHG) were estimated for the lease sale using a generic calculator to predict potential future emissions of GHG's. The GHG emissions estimates were disclosed in the EA. No further analysis is either required or possible to assign an impact to these estimates, as there are no tools or methodology available to do so. Furthermore, GHG emission estimates presented in the lease sale are based only on generic estimates, as there are no specific development plans available to evaluate both pace of development, potential controls, or actual production estimates. The GHG emissions estimates are presented solely to place the potential emissions into a larger context, not to imply or present any specific impacts. This is consistent with current draft CEQ and BLM guidance.

Comment 6 – WildEarth Guardians: "BLM fails to analyze climate emissions or their impacts."

BLM Response to Comment 6: E*stimates of GHG/climate emissions cannot be made without information or descriptions regarding a specific project or projects that could result in GHG emissions. Since this is a lease sale, any information or project descriptions upon which an estimate of GHG emissions could be based do not exist at this time. If and only at such time that specific projects are proposed on these lease parcels, estimates of potential GHG emissions can be evaluated in the project-specific NEPA analysis that would be required. This EA has generally addressed and acknowledged that emissions of GHG, including carbon dioxide, could occur as a result of the May 2016 oil and gas lease sale. However, in light of the uncertainties at the present stage, the leasing stage, which have been briefly described in the response to Comment 5 above, an attempt to be more specific and quantitatively identify potential GHG emissions, and specific impacts potentially attributable to any such emissions, would be purely speculative and of no value with respect to the informed decision making objectives of the National Environmental Policy Act (NEPA). Estimates of GHG emissions are not estimates of impacts rather they are reporting requirements per CEQ and EPA guidance.*

Comment 7 – WildEarth Guardians: "The social cost of carbon has been ignored."

BLM Response to Comment 7: *At the present time, there is a substantial amount of professional disagreement and uncertainty as to what impacts greenhouse gas (GHG) emissions have on climate and, as a result, it is not possible to determine what social costs, if any, could be caused by emissions of GHGs. The latest IPCC report (IPCC WG1AR5, 2014) states the equilibrium climate sensitivity is likely in the range of 1.5°C to 4.5°C (high confidence), extremely unlikely less than 1°C (high confidence), and very unlikely greater than 6°C (medium confidence). No best estimate for equilibrium climate sensitivity can now be given because of a lack of agreement on values across assessed lines of evidence and studies. Given that this range represents potential impacts from minor to major it would be purely speculative, at best, to try to determine what, if any, social costs might result from impacts across this range. Until further refinements in analytical techniques are verified through observational data, it is not possible to estimate impacts. Even if it were assumed, arguendo, that the impacts of GHG emissions could be evaluated with any degree of certainty, it still would not be possible to formulate an estimate, that would be anything but pure speculation, as to the potential social costs of GHG emissions that may result from the May 2016 oil and gas lease sale because any attempt to estimate the potential GHG emissions*

that might result from the May 2016 oil and gas lease sale would also be pure speculation on account of the complete uncertainty at the present time with respect whether, where and the procedures that might utilized in oil or gas development operations that may occur in the future as a result of issuing leases for the proposed May 2016 lease sale parcels.

Comment 8 – WildEarth Guardians: "Global warming is responsible for extreme costs to society already, and it will only get worse in the future."

BLM Response to Comment 8: *See the response to comment 7.*

Comment 9 – WildEarth Guardians: "BLM's EA for the May 2016 oil and gas lease parcel sale violates NEPA."

BLM Response to Comment 9: *The comment suggests that BLM has violated the hard look doctrine. The BLM NEPA Handbook (H-1790-1) states that, "A "hard look" is a reasoned analysis containing quantitative or detailed qualitative information". The BLM believes that the May 2016 Lease Sale EA for the Richfield Field Office does take a hard look. Analysis based on the RFD throughout the document allows the BLM to assess the potential impacts associated with leasing these parcels in Sevier County.*

Comment 10 – WildEarth Guardians: "BLM ignores the Department of the Interiors October 2015 Landscape-Scale mitigation policy, 600 DM 6."

BLM Response to Comment 10: *The DOI Policy requires the agency's bureaus to use a landscape-scale approach that considers impacts and prioritizes mitigation objectives across the landscape whenever possible, and to coordinate with other federal entities and states, tribes and stakeholders in doing so.*

Additionally, the DOI Policy addresses ways in which DOI's bureaus and offices should consider climate change when managing public resources and directs these entities to identify and promote mitigation measures that help address the climate change and improve the resilience of our Nation's resources and their values, services and functions.

This EA has identified the effects of climate change(see Section 4.2.1.1); identified mitigation measures (see Appendix A for a list of the Lease Stipulation and Lease Notices that are attached to each parcel); and have coordinated with various federal and state entities, tribes, and stakeholders (see Section 5.2).

Comment 11 – WildEarth Guardians: "The EA must analyze impacts from fracking wastewater, including the possibility of earthquakes produced by underground injection."

BLM Response to Comment 11: *Hydraulic fracturing (HF) is a stimulation technique used to increase oil and gas production from underground rock formations. HF involves the injection of fluids under pressures great enough to fracture the oil- and gas-producing formations. The fluid generally consists of water, chemicals, and proppant (commonly sand). The proppant holds open the newly created fractures after the injection pressure is released. Oil and gas flow through the fractures and up the production well to the surface.*

HF has been used since the late 1940s and, for the first 50 years, was mostly used in vertical wells in conventional formations. HF is still used in these settings, but the process has evolved; technological developments (including horizontal and directional drilling) have led to the use of HF in unconventional hydrocarbon formations that could not otherwise be profitably produced.

The combined use of HF with horizontal (or more generically, directional) drilling has led to an increase in oil and gas activities in areas of the country with historical oil and gas production, and an expansion of oil and gas activities to new regions of the country. Directional and horizontal drilling may extend to depths greater than 10,000 feet and horizontal sections of a well may extend several thousand feet from the production pad on the surface, minimizing surface disturbance.

In EPA's Draft Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources Executive Summary stated in the conclusion "The number of identified cases where drinking water resources were impacted are small relative to the number of hydraulically fractured wells. This could reflect a rarity of effects on drinking water resources, or may be an underestimate as a result of several factors. There is insufficient pre- and post-hydraulic fracturing data on the quality of drinking water resources. This inhibits a determination of the frequency of impacts. Other limiting factors include the presence of other causes of contamination, the short duration of existing studies, and inaccessible information related to hydraulic fracturing activities." There is not sufficient evidence to support the contention that hydraulic fracturing negatively impacts ground water to an unacceptable degree.

(External Review Draft | EPA/600/R-15/047a | June 2015 |www.epa.gov/hfstudy)

Also, out of the ~1.8 million treatments in over ~1 million wells, from 1947-2010 drilled in the United States, there are only three reported cases of hydraulic fracturing-induced earth quakes. (Seismological Research Letters, Volume 86, Number 4, July/August 2015). DOGM has stated that there are no reported ground water contamination or fracking-induced problems in Utah associated with oil and gas or disposal wells. To date fracking has not been done on any of the wells in the Richfield Field Office.

Copies of comment letters are available at the Richfield Field Office for review.

APPENDIX F, PARCEL PHOTOS

Parcel UT0516-021

Parcel UT0516-023

Parcel UT0516-024

Parcel UT0516-025