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November 2011 Oil and Gas Lease Sale

Location: Price Field Office
Carbon County, Utah

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1 PURPOSE & NEED

1.1 Introduction

The Bureau of Land Management (BLM), Price Field Office (PFO) has prepared this environmental assessment (EA) to disclose and analyze the environmental consequences of the sale of 9 parcels, approximately 8,571 acres, during the November 2011 competitive oil and gas lease sale. The EA is an analysis of potential impacts that could result from the implementation of a proposed action or alternatives to the proposed action. The EA assists the BLM in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any significant impacts could result from the analyzed actions. *Significance* is defined by NEPA and is found in regulation 40 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 Impact (FONSI). If the decision maker determines that this project has significant impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a Decision Record may be signed for the EA approving the selected alternative, whether the proposed action or another alternative. A Decision Record (DR), including a FONSI statement, for this EA would document the reasons why implementation of the selected alternative would not result in significant environmental impacts (effects) beyond those already addressed in the PFO Record of Decision and Approved Resource Management Plan (ROD/RMP).

1.2 Background

Nominations to lease for oil and gas development for the lands encompassed by 9 parcels (See Appendix A, November 2011 Preliminary Oil and Gas Lease Sale List; Appendix B, Maps 1 and 2) were received by the BLM. The surface and mineral rights for all proposed parcels (Appendix B, Maps 1 and 2) are managed and administered by the BLM PFO.

If a parcel is not taken by competitive bidding, it may be leased by non-competitive sale for the two years following the competitive offer. A lease may be held for ten years (43 CFR 3120.2-1), after which the lease would expire unless oil or gas is produced in paying quantities. A producing lease would be held indefinitely by paying production of oil or gas. These lands would be offered subject to applicable laws and standard lease terms. Standard lease terms provide for reasonable measures to minimize adverse impacts to specific resource values, land uses, or users (Standard Lease Terms are contained in Form 3100-11, Offer to Lease and Lease for Oil and Gas, U.S. Department of the Interior, BLM, June 1988 or later edition). Once the lease has been issued, the lessee has the right to use as much of the leased land as necessary to explore for, drill for, extract, remove, and dispose of oil and gas deposits located under the leased lands. Operations must be conducted in a manner that avoids unnecessary or undue degradation of the environment, and minimizes adverse impacts to the land, air, water, cultural, biological, and visual elements of the environment, as well as other land uses or users. Compliance with valid, nondiscretionary statutes (laws) is included in the standard lease terms and would apply to all lands and operations that are part of all of the alternatives. In addition, lease operations would be subject to stipulations for surface disturbing activities prescribed in PFO ROD/RMP.

Lease parcels UT1111-017, UT1111-018, UT1111-019, UT1111-020, UT1111-021 and UT1111-022 fall within an area analyzed in the West Tavaputs Plateau Natural Gas Full Field Development Plan EIS (WTP EIS). The Record of Decision (ROD) for the WTP EIS was signed on July 2010. The WTP EIS included a comprehensive environmental analysis of the direct, indirect, and cumulative impacts of construction, drilling, and completion, and production activities proposed by Bill Barrett Corporation and other oil and gas operators. The WTP EIS analyzed the drilling of up to 807 oil and gas wells from up to 538 well pads on leased and unleased lands within a 137,930 acre project area approximately 30 miles east-northeast of Price, Utah. While the WTP EIS provides analysis of development on unleased lands within the project area, the ROD for the EIS did not include a decision to lease any specific parcel within the WTP project

area. The WTP ROD approved a more contracted plan of development of 626 wells from approximately 120 well pads on leased federal lands over a 4 to 7 year period. Portions of this EA are tiered to the WTP EIS and relevant material from the EIS has been incorporated by reference.

Lease parcels UT1111-017 through UT1111-022 were six of the 77 parcels withdrawn in February 2009. They were reviewed in the "Final BLM Review of 77 Oil and Gas Lease Parcels Offered in BLM-Utah's December 2008 Lease Sale" (Oct. 2009) prepared in response to the "Report to Secretary Ken Salazar Regarding the Potential Leasing of 77 Parcels in Utah" (June 2009). This report is referred to as the Stiles Report. This report has been reviewed by the Utah BLM and issues and concerns have been resolved by this EA and by the completion of the WTP EIS and ROD including the Programmatic Agreement for cultural resources (Attachment 4 of the WTP ROD).

1.3 Purpose and Need of the Proposed Action

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

The sale of oil and gas leases is needed to meet the growing energy needs of the United States public. The BLM is required by law to review areas that have been nominated, and there has been steady interest in oil and gas exploration in the PFO area. Utah is a major source of natural gas for heating and electrical energy production in the lower 48 states. Continued sale and issuance of lease parcels maintains options for production as oil and gas companies seek new areas for production or attempt to develop previously inaccessible or uneconomical reserves.

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

1.4 Conformance with BLM Land Use Plan

Within the PFO ROD/RMP (as maintained), Appendices R-3 (Stipulations for Surface Disturbing Activities), R-5 (Best Management Practices for Raptors and their Associated Habitats), and R-14 (Fluid Mineral Development Best Management Typical Practices) contain pertinent stipulations, lease notices and committed measures.

The proposed action is in conformance with the applicable Land Use Plan (LUP) because it is specifically provided for in the following decisions:

MLE-5 (page 125 PFO ROD/RMP)

> The BLM has identified LUP leasing allocations for all lands within the Price Field Office. In addition, the Proposed RMP describes specific lease stipulations (Appendix R-3) that apply to a variety of different resources including raptors, greater sage grouse, and big game habitat, as well as program-related Best Management Practices (Appendix R-14) that may be applied on a case-by-case basis, site-specific basis to prevent, minimize, or mitigate resource impacts (Map R-8).

MLE-6 (page 125 PFO ROD/RMP)

Review all lease parcels prior to lease sale. If the Price Field Office determines that new resource data information or circumstances relevant to the decision is available at the time of the lease review that warrants changing a leasing allocation or specific lease stipulation, the Price Field Office will make appropriate changes through the plan maintenance or amendment process. The Price Field Office may also apply appropriate conditions of approval at the permitting stage to ensure conformance with the LUP and all applicable law, regulation, and policies. (Department of the Interior, 2008).

MLE-9 (page 126 PFO ROD/RMP)

Oil and gas leasing management will be conducted as shown on Map R-25.

- Areas open to leasing subject to the standard terms and conditions of the lease form (1,161,000 acres)
- Areas open to leasing subject to moderate constraints (timing limitations; CSU, and lease
- notices) (467,000 acres)
- Areas open to leasing subject to major constraints (NSO) (282,000 acres)
- Areas unavailable to leasing (569,000 acres)

The combination of all restrictions on oil and gas development is shown on Map R-26.

The proposed action is also consistent with PFO ROD/RMP decisions and objectives as they relate to the management of the following resources (including but not limited to): air quality, BLM natural areas, cultural resources, recreation, riparian, soils, water, vegetation, fish and wildlife, and Areas of Critical Environmental Concern (ACEC).

1.5 Relationship to Statutes, Regulations, or Other Plans

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

- Federal Land Policy and Management Act (1976) as amended
- Taylor Grazing Act (1934) as amended
- National Historic Preservation Act (1966), as amended
- Bald and Golden Eagle Protection Act (1962)
- Endangered Species Act (1973), as amended
- Migratory Bird Treaty Act (1918)
- 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)
- Regulations found at 43 CFR 2800
- Regulations found at 43 CFR 3600
- Regulations found at 43 CFR 3100
- Utah Standards and Guidelines for Rangeland Health (1997)
- BLM Utah Riparian Management Policy (2005)
- BLM Manual 6840 - Special Status Species Management
- Utah Supplemental Planning Guidance: Raptor Best Management Practices (BLM UTSO IM 2006-096)
- Oil and Gas Leasing Reform – Land Use Planning and Lease Parcel Reviews (BLM WO IM-2010-117)

- Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (U.S. Department of Interior, Bureau of Land Management, June 2007)
- Price Field Office Record of Decision and Approved Resource Management Plan (2008)
- West Tavaputs Plateau Natural Gas Full Field Development Plan Environmental Impact Statement and Record of Decision (2010)
- Greater Natural Buttes Supplement to the Draft Environmental Impact Statement (2011)

These documents and their associated analysis are hereby incorporated by reference, based on their use and consideration by various authors of this document. The attached Interdisciplinary Team Checklist, Appendix C, was also developed after consideration of these documents and their contents. Each of these documents is available for review upon request from the PFO. 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 PFO. This team identified resources in the parcel areas which might be affected and considered potential impacts using current office records and geographic information system (GIS) data, and site visits. The results of the IDPR team review, including a list of all resources/issues that are analyzed in detail within this EA are contained in the Interdisciplinary Team Checklist, which is included as Appendix C.

On April 20 and May 10, 2011, notice of the lease sale, parcel locations and an invitation to attend the site visit was provided to the National Park Service, the United States Forest Service, the United States Fish and Wildlife Service and the State of Utah's Public Land Policy Coordination Office and the State Institutional Trust Land Administration Office. The IDPR team conducted site visits to parcels UT1111-001 and UT1111-002 on May 12, and to parcels UT1111-017, UT1111-018, UT1111-019, UT1111-020, UT1111-021 and UT1111-022 on May 17, 2011 to validate existing data and gather new information in order to make an informed leasing recommendation. None of the outside agencies contacted the PFO expressing interest in attending the site visit.

Public notification was initiated by entering the project information on the Environmental Notification Bulletin Board (ENBB[1]), a BLM environmental information internet site on April 21, 2011. In addition to the Utah State Office announcement, the Utah State Office (USO) posted this environmental assessment and unsigned FONSI onto the ENBB on June 15, 2011. Additional information for the public is maintained on the Utah BLM Oil and Gas Leasing Webpage[2]. Additional information on public participation is available in Section 5.3.

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

1.7 Issues Considered but Eliminated from Further Analysis

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

- Areas of Critical Environmental Concern
- Environmental Justice
- Farmlands (Prime or Unique)
- Fish and Wildlife excluding USFWS Listed Species and BLM Sensitive Species, e.g. Migratory Birds
- Floodplains
- Fuels/Fire Management
- Geology / Mineral Resources / Energy Production
- Invasive, Non-native Species
- Lands / Access
- Livestock Grazing
- Paleontology
- Rangeland Health Standards
- Recreation
- Socio-Economics
- Soils
- Threatened, Endangered, or Proposed Animal Species
- Wastes, Hazardous or Solid
- Water Quality (drinking/ground)
- Wetlands / Riparian Zones
- Wild and Scenic Rivers
- Wilderness and Wilderness Study Areas
- Woodland / Forestry
- Vegetation including Special Status Plant Species other than FWS candidate or listed species
- Visual Resources
- Wild Horses and Burros
- BLM Sensitive Animal Species
- BLM Natural Areas
- Coal

These issues were eliminated from analysis because they were either not applicable to the lands considered in the proposed action or the reviewing specialists did not consider the proposed action to represent a potential impact to these issues, under applicable leasing protective measures provided through the PFO ROD/RMP, 2008. Rationale as to why these resources or issues were not carried forward for analysis is also contained in the Interdisciplinary Team Checklist (Appendix C).

In addition, BLM considered disturbed desert dust and its impacts to mountain snowpacks or as a precursor to climate change, as an issue brought forward during the EA public comment period. BLM has no way of assessing possible impacts based on the information provided at the leasing phase, BLM believes that this issue is best incorporated into the overall management of air quality in which Environmental Protection Agency (EPA) and the State of Utah (both agencies with expertise and jurisdiction by law) have agreed to certain attributes in which to monitor and manage air quality with the BLM.

1.8 Summary

This chapter presented the purpose and need of the proposed project, as well as the relevant issues, i.e., those elements of the human environment that could be affected by the implementation of the proposed project. In order to meet the purpose and need of the proposed project the BLM has considered the proposed action and the no action alternatives. These alternatives are presented in Chapter 2. The potential environmental impacts or consequences resulting from the implementation of each alternative considered in detail are analyzed in Chapter 4 for each of the identified issues.

2 DESCRIPTION OF ALTERNATIVES, INCLUDING THE PROPOSED ACTION

2.1 Introduction

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

2.2 Alternative A – Proposed Action

Nine nominated parcels, approximately 8,571 acres, within the jurisdiction of the PFO have been proposed for sale in the November 2011 Oil and Gas Lease Sale to be held at the Utah BLM State Office. The nominated parcels would be offered with additional resource protection measures consistent with the Price Field Office Approved Resource Management Plan and Record of Decision (PFO ROD/RMP), 2008. Legal descriptions of each nominated parcel can be found in Appendix A, and maps of the nominated parcels can be found in Appendix B, Maps 1 and 2.

Parcels UT1111-017, UT1111-018, UT1111-019, UT1111-020, UT1111-021 and UT1111-022 fall within the area recently analyzed in the WTP EIS. These parcels may be subject to the provisions set forth in the ROD including those in Attachment 2 (Conditions of Approval and Stipulations), approved July 30, 2010. Those provisions include but are not limited to protection of cultural resources as outlined in the WTP Programmatic Agreement, wildlife mitigation, as outline in the WTP wildlife mitigation plan, and water quality monitoring, as outlined in the Water Quality Monitoring Plan. Parcels UT1111-017 and UT1111-018 have small portions are located within the Nine Mile Canyon ACEC (Appendix B, Map 3) that overlap and total approximately 15.5 acres within this boundary. The portions of these parcels that are located within the ACEC will be subject to the No Surface Occupancy stipulation as the Price ROD/RMP concluded was necessary (Appendix A).

The proposed action includes offering two of the parcels that were nominated in their entirety and portions of parcels UT1111-017, UT1111-018, UT1111-021 and UT1111-022. Approximately 240 acres of parcel UT1111-021 has been deferred due to sage-grouse winter habitat and ongoing mitigation efforts in conjunction with development within the WTP Project Area. Therefore the parcel is now approximately 962 acres and the parcel description can be found in Appendix A.

Parcel UT1111-017, UT1111-018, and UT1111-022 were initially nominated and analyzed as larger parcels (400 acres, 520 acres and 1751 acres respectively) however the nominator of these parcels withdrew their nomination of certain lands within these parcels in a letter dated August 2, 2011. The State Director concurred with this withdrawal and therefore the parcels are now 320 acres, 360 acres and 1551 acres respectively. The new parcel descriptions can be found in Appendix A and a map of the parcels (Map 2) can be found in Appendix B.

2.3 Alternative B – No Action

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

2.4 Alternatives Considered but Not Carried Forward

Leasing All Parcels Alternative

A total of ten parcels were nominated for sale in the PFO. An alternative was considered that included leasing of all ten parcels. However, lease parcel UT1111-003 is in an area that has been mined for coal within the past 15 years, though it is inactive presently. The parcel includes recoverable marketable coal and therefore will not be considered for leasing at this time. This parcel may be considered for leasing sometime in the future after the economically viable coal is recovered or if it is determined that it is not feasible to recover the coal.

3 AFFECTED ENVIRONMENT

3.1 Introduction

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

3.2 General Setting

The nominated parcels are located in Carbon County, Utah. Appendix A contains legal descriptions of the nominated parcels. Appendix B, Maps 1 and 2 show the locations of the nominated parcels. The project area is situated in the Colorado Plateau physiographic province.

The nominated parcels are located in the northern region of the PFO area which is made up of the Book Cliffs and Roan Plateau section of the Colorado Plateau. This area constitutes the southern extension of the Uinta Basin where Upper Cretaceous and Lower Tertiary rocks rise upward from the north along the dip slopes of the basin to reach elevations of 8,000 to 10,000 feet. On their south end, these rocks are abruptly truncated in great erosional cliffs that descend to elevations around 5,000 feet in the Mancos Lowlands. The Book Cliffs are formed by Upper Cretaceous sandstones and shaly siltstones of the Mesaverde Group, including the Blackhawk Formation, Castlegate Sandstone, and the Price River Formation. To the northeast of the Book Cliffs, the Roan Cliffs are formed by the reddish-brown mudstone and sandstone beds of the Colton Formation (Paleocene-Eocene). Further to the northeast in Carbon County are other erosional rises, including the West Tavaputs Plateau and the Bad Land Cliffs that expose the Eocene Green River Formation.

The lower elevations receive less than 10 inches of precipitation annually. Higher elevations of the PFO receive more than 14 inches of precipitation annually. Snow amounts also are low east of the Wasatch Mountains. Average maximum temperatures in the area range from 97°F in July to 33°F in January. Average minimum temperatures range from 7°F in January to 58°F in July (BLM 1997, BLM 1999b).

3.3 Resource Issues Brought Forward for Analysis

The affected environment of the proposed action and no action alternatives was considered and analyzed by an interdisciplinary team as documented in the Interdisciplinary Team Checklist, Appendix C. The checklist indicates which resources of concern are either not present in the project area or would not be impacted to a degree that requires detailed analysis. Resources which could be impacted to a level requiring further analysis are described in this Chapter and impacts to these resources are analyzed in Chapter 4.

3.3.1 Cultural Resources and Native American Concerns

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

Cultural resources are sensitive, irreplaceable resources with potential public and scientific uses and an important and integral part of our national heritage. Cultural resources constitute "a definite location of human activity, occupation, or use identifiable through field inventories (i.e., surveys), historical documentation, or oral evidence" (BLM-M-8100). The term cultural resource also includes "archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (i.e., sites or places) of traditional cultural or religious importance to specified social and/or cultural groups. Cultural resources are concrete, material places and things that are located, classified, ranked, and managed through the system of identifying, protecting, and utilizing for public benefit. They may be but are not necessarily eligible for the National Register" (BLM-8100).

There have not been many inventories for cultural resources on the land parcels proposed for this lease sale. Only about 100 acres of the approximately 8,501 acres of lease parcels have been inventoried. Fourteen archaeological sites have been recorded. Parcels UT1111-001, UT1111-002 and UT1111-005 are located in areas where site size and density are small.

Parcels UT1111-017 through UT1111-022 are located within the area of WTP EIS. This area contains many important cultural resources including Nine Mile Canyon. A detailed discussion of cultural resources in the WTP Project Area including a cultural overview, ethnographic overview, list of TCP's, and Class I literature review are included in Section 3.12 of the WTP EIS (July 2010). The Programmatic Agreement Between The U.S.D.I. Bureau Of Land Management, Utah, The Utah State Historic Preservation Officer, The Advisory Council On Historic Preservation, The State Of Utah School And Institutional Trust Lands Administration, Carbon And Duchesne Counties, And Bill Barrett Corporation Regarding The West Tavaputs Plateau Natural Gas Full Field Development Plan In Carbon And Duchesne Counties, Utah (2010) was developed to mitigate or eliminate potential adverse effects of development on leases in the area.

The proposed lease parcels are located in an area identified as being of historical interest to the following tribes: Paiute Tribe of Utah (PITU), the Ute Indian Tribe, Hopi Tribe, Zuni Tribe, Navaho Nation, Ute Mountain Tribe, Southern Ute Tribe, Northwestern Band of Shoshone Nation, Shoshone-Bannock Tribes, and Eastern Shoshone Tribe. During the development of the WTP EIS consultation was conducted with each of these Tribes. The BLM's past consultation efforts are documented in Section 6.2.1. Consultation letters regarding leasing of these specific parcels were sent to these tribes on May 25, 2011. The PITU, Hopi and Navajo Nation provided written responses. Consultation is ongoing.

3.3.2 Threatened, Endangered, Candidate or Sensitive Animal Species

Under Section 7 of the Endangered Species Act (ESA), the BLM is required to consult with the USFWS on any proposed action which may affect federally listed threatened or endangered species or species proposed for listing. Section 7 consultation efforts [a Biological Assessment (BA) and subsequent Biological Opinion (BO)] covering a wide variety of actions, including oil and gas leasing, associated with the current BLM land use plans in Utah was completed October 2008 (BLM 2008c). The BO includes species-specific lease notices that were developed in the during the Section 7 process. Informal consultation is conducted before each lease sale to ensure the appropriate lease notices from the BO are attached to the lease parcels. When habitat is thought to be present, these lease notices are to be attached to oil and gas leases offered in Utah. Washington Office (WO) Instruction Memorandum (IM)-2002-174, directs that the BLM attach an Endangered Species Act stipulation to leases to protect threatened and endangered along with other special status species. According to this stipulation, the BLM will not approve any ground-disturbing activity until obligations under applicable requirements of the ESA have been fulfilled, including completion of any required procedure for formal or informal conference or consultation.

43 CFR 3162.1(a) provides the BLM with broad authority to ensure compliance of lessees with orders of the authorized officer issued for the protection of the environment. Conservation measures (lease notices and stipulations) as discussed above increase the likelihood that the BLM and by association, the lessee, will not have to complete formal Section 7 consultation at the project level; however it should be noted that BLM may be required to reinitiate Section 7 consultation at the project-level, as necessary, to ensure proper management of listed species in the future. Site-specific effects cannot be analyzed until an exploration or development application is received, after leasing has occurred. Until there is a site-specific proposal, there is no action directly or indirectly causing modifications to the land, water, or air.

As previously mentioned, parcels UT1111-017 through UT1111-022 are included within the WTP Project. The USFWS participated in development of the WTP EIS as a cooperating agency. In addition, formal Section 7 consultation was completed for the project. The USFWS's BO is included as Appendix 9 of the WTP ROD. All of the measures included in the USFWS BO were included in the WTP ROD as committed mitigation. As discussed in Chapter 2, measures included in the ROD may be applied to development on these leases.

A detailed description of all threatened, endangered, candidate or sensitive animal species that may be present on parcels UT1111-017 through UT1111-022 is included in the WTP EIS (Section 3.10). A summary is included in the sections below.

3.3.2.1 Mexican spotted owl

The Mexican spotted owl was listed as a threatened species in 1993. Its known range in the PFO is in the West Tavaputs Plateau in central Utah. Although MSO have not been documented as occurring within the area of the proposed parcels, there is designated critical habitat close to the area. USFWS-designated critical habitat for the MSO occurs on the eastern portion of the Tavaputs Plateau, in the canyons near the Green River.

Mexican spotted owls primarily forage at night. Their diet consists of a variety of mammals, birds, reptiles, and insects, with mammals constituting the bulk of the diet throughout the owl's range. Steep slopes and canyons with rocky cliffs and trees characterize much of the owl's habitat in the PFO. Threats to Mexican spotted owls include habitat loss associated with human disturbance and fire.

Designated critical habitat was established for the Mexican spotted owl in 2001 and revised in 2004. For canyon habitats, the primary constituent elements include one or more of the following attributes: (1) cooler and often more humid conditions than the surrounding area; (2) clumps or stringers of trees and/or canyon walls containing crevices, ledges, or caves; (3) a high percentage of ground litter and woody debris; and (4) riparian or woody vegetation. The primary constituent elements related to forest structure include: (1) a range of tree species; (2) a shade canopy created by the tree branches, covering 40 percent or more of the

ground; and (3) large, dead trees with a trunk diameter of at least 12 inches. The PFO contains 160,400 acres of designated critical habitat for the Mexican spotted owl on BLM-managed land.

Numerous MSO surveys have been completed, in the general area, according to USFWS survey guidelines. MSO surveys were first completed in Dry Canyon in 2001 by EIS Consultants, Inc (EIS Consultants). No MSO were seen or heard during these inventories. Cottonwood, Harmon, Jack, and Nine Mile Canyons, as well as Prickly Pear Creek were surveyed for MSO in 2003. No MSOs were identified or heard during these surveys. Surveys completed in 2004 documented a potential sighting (i.e., an unconfirmed auditory response from an MSO) of a single MSO in the Lower Jack Canyon near the Green River. In 2006, EIS Consultants completed MSO surveys in Dry, Jack, Nine Mile, and Prickly Pear Canyons. No MSO were seen or heard during these surveys. Recently, EIS Consultants completed MSO surveys in Cottonwood, Dry, Harmon, Nine Mile, Prickly Pear Canyons, as well as in the Peter's Point area during the 2007 breeding and nesting season. No MSO were seen or heard during these surveys.

3.3.2.2 Colorado River Fish

Because of declining numbers and distribution of humpback chub, bonytail chub, Colorado pikeminnow, and the razorback sucker, USFWS designated critical habitat in April 1994. In the PFO, habitat consists of the Green River for these four Colorado River endangered fish. Threats of extinctions are due to habitat loss (including alterations to natural flows and changes to temperature and sediment regimes), proliferation of non-native introduced fish, and other artificial disturbances. Details on each of these fish follow.

The humpback chub was federally listed as endangered in 1967. Humpback chub originally thrived in the fast, deep whitewater areas of the Colorado River and its major tributaries, but flow alterations, which have changed the turbidity, volume, current speed, and temperature of the water in those rivers, have had substantial negative impacts on the species. Incidence of humpback chub in PFO are presently confined to a few whitewater areas in the Green River.

The humpback chub diet is primarily insects and other invertebrates, but algae and fish are occasionally consumed. The species spawns during the spring and summer in shallow, backwater areas with cobble substrate. Spawning occurs in deep, turbulent canyons from May through June, when water temperatures range from 66 °F to 72 °F. Currently, the species occurs in large rivers, primarily in canyon-bound reaches of the Colorado River drainage. Reproducing populations are considered extant in Desolation and Gray canyons (Green River).

Bonytail chub were listed by USFWS as an endangered species in 1980. They are found in larger channels of the Colorado River system, in swift water, and are endemic to the large rivers (Colorado, Green, and San Juan) of the Colorado River Basin. The historical distribution of bonytail is poorly documented; however, their optimum habitat, based on former collections, appears to be the open river areas of relatively uniform depth and current velocity. Adults are found mainly in pools and eddies with silt, sand, or boulder substrates. Young occur in still water or shallow pools with silt or gravel.

Spawning occurs over gravel bars in shallow pools from June to July at water temperatures between 64 ºF and 70 ºF. Although bonytail spawning in the wild is now rare, the species spawns in the spring and summer over gravel substrate. Many bonytail are currently produced in fish hatcheries, with the offspring released into the wild when they are large enough to survive in the altered Colorado River system environment. Bonytail prefer eddies, pools, and backwaters near swift current in large rivers. Bonytail chub are opportunistic feeders, eating insects, zooplankton, algae, and aquatic plants.

The Colorado pikeminnow was listed as endangered in 1967. The Colorado pikeminnow is a large minnow native to the Colorado River system of the western United States and Mexico. Adults often occupy deep-water, low-velocity eddies and pools. Young of the species prefer slow-moving backwaters.

The species spawns during the spring and summer over riffle areas with gravel or cobble substrate. Colorado pikeminnows primarily eat fish, but smaller individuals also eat insects and other invertebrates. Changes in sediment deposition patterns, flow, and temperature caused by dams have resulted in loss and alteration of aquatic habitats and have favored non-native competitors and predators.

The razorback sucker was listed in 1991. The species is believed to have historically occupied much of the Green River. Current distribution patterns are difficult to interpret, primarily because the species is rarely encountered. Razorback sucker occur in water at desert and submontane elevations. Habitat used may vary seasonally and includes pools, slow runs, backwaters, and flooded off-channel habitats.

The razorback sucker mainly eats algae, zooplankton, and other aquatic invertebrates. Successful reproduction has not been documented in the last 25 years. Spawning occurs during a 6-week period in April and May when water temperatures reach 53 °F–64 °F.

3.3.2.3 Greater Sage Grouse

Greater sage-grouse are now a candidate species, which was not the case when the PFO RMP was completed. Greater sage-grouse populations are documented in both Carbon and Emery counties (NatureServe 2005). The greater sage-grouse is an herbivore and insectivore and is associated with both tall and short sagebrush types. Greater sage-grouse inhabit sagebrush plains, foothills, and mountain valleys at elevations from 4,000 to more than 9,000 feet and are highly dependent on sagebrush for food and cover (USFWS 2005). Sagebrush, an understory of grasses and forbs, and associated wet meadow areas are essential for optimum habitat. Greater sage-grouse exist on State, private, and BLM lands in the Emma Park, Whitmore Park, and West Tavaputs areas. Greater sage-grouse are not hunted in the PFO.

Greater sage-grouse use the same breeding ground or “leks” for several consecutive breeding seasons; there are approximately 50 acres of crucial value known leks on BLM-managed land in the PFO. Greater sage-grouse crucial value nesting/brood rearing (13,300 acres), high-value winter habitat (42,200 acres), and high-value yearlong habitat (37,200 acres) are also located on BLM-managed land in the PFO. In addition to these areas, a large percentage of greater sage-grouse winter within the Emma Park area, but the wintering sites in these areas are highly variable annually and are therefore not mapped.

Greater sage-grouse habitat has decreased from historic levels as a result of pinyon-juniper woodland invasion into the sagebrush steppe, sagebrush die-off on 15,380 acres in the PFO, and resource development. Threats to greater sage-grouse include habitat loss due to agricultural expansion, human development, and livestock grazing (UDWR 2003).

The USFWS began a formal status review after receiving three petitions to list the greater sage-grouse range-wide as endangered or threatened (USFWS 2005). On March 23, 2010, the USFWS placed in the federal register a 12–month finding on a petition to list the greater sage-grouse as threatened or endangered under the Endangered Species Act of 1973, as amended. The USFWS found that listing the greater sage-grouse (rangewide) is warranted, but precluded by higher priority listing actions. The warranted, but precluded makes the greater sage-grouse a candidate species. The BLM is not required to initiate Section 7 consultation on candidate species.

3.3.3 Threatened, Endangered, Candidate or Sensitive Plant Species

Uinta Basin hookless cactus is a perennial herb and a member of the cactus family. It is federally listed as threatened and is endemic to the Uinta Basin. It consists of a perennial succulent shoot, solitary or rarely branching, globose, ovoid or cylindrical. Individuals are usually 3 to 9 centimeters in diameter and 4 to 12 centimeters. Each spine cluster, areoles, usually consists of one large (15 to 29 millimeters) central spine, three to four lateral central spines, and six to ten radial spines. From late April to May, Uinta Basin hookless cactus produces 2.5 to 5-centimeter high pink to violet flowers.

The ecological amplitude of Uinta Basin hookless cactus is wide, being found from clay badlands up to the pinyon-juniper habitat. The preferred habitat occurs on river benches, valley slopes, and rolling hills consisting of xeric, fine textured, clay soils, derived from the Duchesne River, Green River, Mancos, and Uinta formations, overlain with a pavement of large, smooth, rounded cobble. The typical plant community in Uinta Basin hookless cactus habitat is the salt desert shrub community.

A small portion of parcel UT1111-022 is within an area the USFWS has designated as being potential habitat for Uinta Basin hookless cactus. Parcels UT1111-017 and UT1111-018 are located near the designated area and may have potential habitat for the Uinta Basin hookless cactus.

A detailed description of the Uinta Basin hookless cactus is included in the WTP EIS (Section 3.10).

The USFWS participated in development of the WTP EIS as a cooperating agency. In addition, formal Section 7 consultation was completed for the project. The USFWS's BO is included as Appendix 9. All of the measures included in the USFWS BO (including protection measures for cactus) were included in the WTP ROD as committed mitigation and included in Attachment 2 (Conditions of Approval and Stipulations). As discussed in Chapter 2, measures included in the WTP ROD may be applied to development on these leases.

3.3.4 Hydrologic Conditions

The lease area has a varied landscape described as extreme slopes over 50% to flat large park, the upper slopes being high soil production due to the character of the parent material. With vegetation that exists in the form of various shrubs and other leafy plants, this is a high soil production area. This soil is washed down annually to build up the park. Surface runoff carrying the soil creates rills that carry the soil off the slopes to the lower, flatter areas. Grasses at the toe and throughout the flatter park areas slow the surface flow, and soil particles drop out in gradients sorting the soil to finer texture as the distance increases from the slopes. The finer textured particles tend to be stickier when moist, resisting the erosive effects of the slower moving runoff from snow melt and storm events. This effect causes the rills to end, spreading out, thus depositing the load it carries at the lower toe. This creates the park areas. There are some live ephemeral flows in small headwater streams crossing these parks and springs scattered throughout. The result of the environs is a high sediment load being carried by surface water in the form of silts and fine sands being carried off by surface runoff and clays being transported by lateral movement of fast, shallow groundwater flows through the soil column.

For parcels UT1111-017 through UT1111-022, a detailed description of soil and water conditions is included in Sections 3.4 and 3.5 of the WTP EIS.

3.3.5 Non WSA Lands with Wilderness Characteristics

Non-WSA lands with wilderness characteristics are defined as areas having at least 5,000 acres or areas less than 5,000 acres that are contiguous to WSAs or other administratively endorsed for wilderness management lands or, in accordance with the Wilderness' Act's language, areas "of sufficient size as to make practicable its preservation and use in an unimpaired condition". Non -WSA lands with wilderness characteristics are lands that are in a natural or undisturbed condition, providing outstanding opportunities for solitude or primitive forms of recreation.

The PFO BLM, determined in the 1999 Utah Wilderness Inventory that approximately 483,900 acres outside of existing WSAs had wilderness characteristics. Many of these areas are adjacent to or contiguous to Wilderness Study Areas (WSAs). Areas with wilderness characteristics that will be affected by this lease sale include the Jack Canyon Unit and Desolation Canyon Unit One. The Jack Canyon unit is narrow in shape and consists of two main finger ridges mostly covered by woodland. The Desolation Canyon unit One includes Pinnacle Canyon, the head of South Franks Canyon and the southern half of Horse Bench. The topography of Desolation Canyon unit One includes bench lands and numerous unnamed drainages which is also covered by woodland and scattered parks. All parcels proposed for lease in Desolation

Canyon unit One are located near the boundary of the Desolation Canyon WSA and adjacent to areas where oil and gas development is currently occurring. During the PFO land use planning process, the Jack Canyon Unit and the Desolation Canyon Unit One (Appendix B, Map 4) non -WSA lands with wilderness characteristics were considered and thoroughly analyzed for the protection, preservation, and maintenance of those wilderness characteristics as well as for the impacts that could occur if other resource developments and uses were allowed. The Approved Resource Management Plan, October 2008, Record of Decision, determined that both Jack Canyon and Desolation Canyon Unit non-WSA lands with wilderness characteristics would not be managed for those characteristics based upon the analysis in the Price Proposed Plan/Final EIS (2008), which showed Jack Canyon and Desolation Canyon unit One as being located in an oil and gas development area with a moderate to high potential for future development (BLM, 2008b). A detailed description of both of these units is included in the WTP EIS in Section 3.17.

3.3.6 Air Quality

The Project Area is located in the Uinta Basin, a semiarid, mid-continental climate regime typified by dry, windy conditions and limited precipitation. The Uinta Basin is subject to abundant sunshine and rapid nighttime cooling. Wide seasonal temperature variations typical of a mid-continental climate regime are also common. Existing point and area sources of air pollution within the Uinta Basin include the following:

- Exhaust emissions (primarily CO, NO_x, $PM_{2.5}$, and HAPs) from existing natural gas fired compressor engines used in transportation of natural gas in pipelines;
- Natural gas dehydrator still-vent emissions of CO, NO_x, $PM_{2.5}$, and HAPs;
- Gasoline and diesel-fueled vehicle tailpipe emissions of VOCs, NOx, CO, SO2, PM_{10}, and $PM_{2.5}$;
- Oxides of sulfur (SO_x), NO_x, and fugitive dust emissions from coal-fired power plants and coal mining and processing;
- Fugitive dust (in the form of PM_{10} and $PM_{2.5}$) from vehicle traffic on unpaved roads, wind erosion in areas of soil disturbance, and road sanding during winter months; and
- Long-range transport of pollutants from distant sources.

The Uinta Basin is designated as attainment or unclassified under the Clean Air Act, meaning that the concentration of criteria pollutants in the ambient air is less than the National Ambient Air Quality Standards (NAAQS), or adequate air monitoring is not available to make an attainment determination. NAAQS are standards that have been set for the purpose of protecting human health and welfare with an adequate margin of safety. Pollutants for which standards have been set include sulfur dioxide (SO_2), nitrogen dioxide (NO_2), and carbon monoxide (CO), and particulate matter less than 10 microns in diameter (PM_{10}) or 2.5 microns in diameter ($PM_{2.5}$). Airborne particulate matter (PM) consists of tiny coarse-mode (PM_{10}) or fine-mode ($PM_{2.5}$) particles or aerosols combined with dust, dirt, smoke, and liquid droplets. $PM_{2.5}$ is derived primarily from the incomplete combustion of fuel sources and secondarily formed aerosols, whereas PM_{10} is primarily from crushing, grinding, or abrasion of surfaces.

NAAQS have also been set for ground-level ozone (O_3), which is a secondary pollutant that is formed by a photochemical reaction between NO_X and VOCs in the presence of sunlight. Precursor sources of ozone include motor vehicle exhaust and industrial emissions, gasoline vapors, some tree species emissions, wood burning, and chemical solvents. Ozone is generally considered a summertime air pollution problem, due to the abundant sunshine and presence of vegetative VOC's. Ozone is a regional air quality issue because, along with its precursors, it transports hundreds of miles from its origins. Maximum ozone levels may occur at locations many miles downwind from the sources.

The Utah Division of Air Quality (UDAQ) estimates background air quality as guidance for regulatory modeling of permitted sources to insure NAAQS compliance. These background values are used in dispersion models which need a background value to add to a proposed point sources emissions so that an evaluation can be made on whether the source will meet NAAQS. These background estimates are based on monitored values when possible, and on default factors when monitoring data does not exist. UDAQ does

not estimate ozone and $PM_{2.5}$ background values, as the models used to determine impacts from these pollutants estimate background as part of the overall modeling calculations. **Table 2** lists the latest regulatory background values from UDAQ for the Uinta Basin.

Table 2. Ambient Criteria Pollutant Concentrations in the Uinta Basin

Pollutant	Averaging Period(s)	Uinta Basin Background Concentration ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)
SO_2	Annual 24-hour 3-hour	5 10 20	80 365 1,300
NO_2	Annual	17	100
PM_{10}	24-hour	28	150
CO	8-hour 1-hour	1,111 1,111	10,000 40,000

Active ozone monitoring in the Uinta Basin began in the summer of 2009. Both of these monitoring sites have recorded numerous exceedences of the 8 hour ozone standard during the winter months (January through March). While the monitors are not currently being operated to CFR standards, and as such are not considered adequate data to make a NAAQS determination, the data is considered viable and representative of the area. Apparently, high concentrations of ozone are being formed under a "cold pool" process whereby stagnate air conditions with very low mixing heights form under clear skies with snow-covered ground and abundant sunlight that, combined with area precursor emissions (NO_x and VOCs), create intense episodes of ozone. Based on the monitoring to date, these episodes occur only during the winter months (January through March). This phenomenon has also been observed in similar types of locations in Wyoming and has contributed to a proposed nonattainment designation for Sublette County. The National Park Service also operates an ozone monitor in Dinosaur National Monument during the summer months. No exceedences of the current ozone NAAQS have been recorded at this site.

Winter ozone formation is a newly recognized issue, and the methods of analyzing and managing this problem are still in development. Existing photochemical models are currently unable to replicate winter ozone formation satisfactorily, in part due to the very low mixing heights associated with the unique meteorology of these ambient conditions. Based on the emission inventories developed for Uintah County, the most likely dominant source of ozone precursors in the Uinta Basin are oil and gas operations in the vicinity of the monitors. The monitors are located in remote areas where impacts from other human activities are unlikely to be a major contributor to this ozone formation. While ozone precursors can be transported large distances, the meteorological conditions under which this cold pool ozone formation is occurring tends to preclude any major transport. At the current time ozone exceedences in this area seem to be confined to the winter months during periods of intense surface inversions and low mixing heights. Substantial work still remains to be done to definitively identify the sources of ozone precursors contributing to the observed ozone concentrations. In particular, speciation of gaseous air samples collected during periods of high ozone is needed to determine which VOC s are present and what their likely sources are.

The complete EPA Ouray and Redwash monitoring data can be found at:
http://www.epa.gov/airexplorer/index.htm

The complete NPS Dinosaur National Monument monitoring data can be found at:
http://www.nature.nps.gov/air/Monitoring/MonHist/index.cfm

The UDAQ conducted limited monitoring $PM_{2.5}$ in Vernal, Utah that started in December 2006. During the 2006-2007 winter season, $PM_{2.5}$ levels were measured at the Vernal monitoring station higher than the $PM_{2.5}$ health standard that became effective in December 2006. The $PM_{2.5}$ levels recorded in Vernal were similar to other areas in northern Utah that experience wintertime inversions. The sources of elevated $PM_{2.5}$ concentrations during winter inversions in Vernal, Utah haven't been identified as of yet. The most likely causes of elevated $PM_{2.5}$ at the Vernal monitoring station are probably those common to other areas of the western US (combustion and dust) plus nitrates and organics from oil and gas activities in the Basin. $PM_{2.5}$ monitoring that has been conducted in the vicinity of oil and gas operations in the Uinta Basin have not recorded any exceedences of either the 24 hour or annual NAAQS. Monitoring for $PM_{2.5}$ is currently ongoing in the Uinta Basin.

Hazardous air pollutants (HAPs) are those pollutants that 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). There are no applicable Federal or State of Utah ambient air quality standards for assessing potential HAP impacts to human health.

Greenhouse gases keep the planet's surface warmer than it otherwise would be. But, as the concentrations of these gases continue to increase in the atmosphere, the Earth's temperature is climbing above past levels. According to NOAA and NASA data, the Earth's average surface temperature has increased by about 1.2 to 1.4º F in the last 100 years. The eight warmest years on record (since 1850) have all occurred since 1998, with the warmest year being 1998. However, according to the British Meteorological Office's Hadley Centre (BMO 2009), the United Kingdom's foremost climate change research centre, the mean global temperature has been relatively constant for the past nine years after the warming trend from 1950 through 2000. So while most scientists believe that Earth will continue to warm in the future, this warming has not occurred for the past ten years. Therefore, quantified or globally accepted predictions on the ultimate outcome of global warming are still unknown. The warmest year on record was 1998, a year associated with the most intense El Nino global phenomena ever experienced. Most of the warming from 1950 through 2000 is speculated to be the result of human activities. Other aspects of the climate, such as rainfall patterns, snow and ice cover, and sea level, are also changing.

Based on the combination of methods available to estimate background air quality in the Uinta Basin some general and specific conclusions can be made regarding existing air quality in the project area. Ozone is the primary pollutant of concern, with a potential seasonal pattern the opposite of what is typically considered for ozone. Ozone concentrations during winter inversion events are being monitored well above the current ozone NAAQS. Summer ozone concentrations, while elevated above what would be considered normal background levels, are below the current NAAQS but may become an issue if EPA lowers the existing standard. $PM_{2.5}$ at this time does not appear to be an issue in rural areas of the Uinta Basin, though concentrations in urban settings have been recorded above the NAAQS during winter inversion events. This is not an unusual occurrence, even in smaller rural communities, and is typically due to a combination of woodstoves and vehicle emissions (especially diesel). Other criteria pollutants do not appear to be an issue at this time, and are anticipated to all be well below applicable NAAQS concentrations.

A typical one well emission inventory is presented in Table 3.

Table 3 Emission Inventory

Construction Emissions (Tons)	Drilling Emissions (Tons)			Completions Emissions (Tons)		Ongoing Production Emissions (Tons/Year)			
PM10	NOX	CO	VOC	VOC	PM10	NOX	CO	VOC	PM10
0.04	6.70	2.50	0.60	0.00	0.00	6.12	6.10	15.34	0.002
0.04	6.70	2.50	0.60	0.00	0.00	6.12	6.10	15.34	0.002

4 ENVIRONMENTAL IMPACTS

4.1 Introduction

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

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

4.2 General Analysis Assumptions and Guidelines

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

In general, the BLM Utah State Office (USO) conducts a quarterly competitive lease sale to sell available oil and gas lease parcels in the state. In the process of preparing a lease sale, the BLM USO compiles a list of lands nominated and legally available for leasing, and sends a draft parcel list to the appropriate District Office where the parcels are located. District and field office staff then review and verify that the parcels are in areas open to leasing; that any new information that has become available, or any circumstances that have changed, are assessed to determine what level of analysis is required; that appropriate stipulations and notices can been included; that appropriate consultations have been conducted, when necessary; and that any special resource conditions are identified for potential bidders.

The field office then either determines that existing analyses provide an adequate basis for leasing recommendations or that additional NEPA analysis is needed before making a leasing recommendation. In most instances, an EA will be initiated for the parcels within the district or field office to meet the requirements of WO IM 2010-117. The EA results in a list of available lease parcels and stipulations as part of the analysis. The EA is then made available to the public for a 30-day public comment period on the BLM web page. After analyzing and incorporating all comments received during the public comment

period, changes to the document and/or lease list parcels are made as necessary. The document is made available again to the public for the protest period (30 days). The protest period ends 60 days before the scheduled lease sale and, a list of available lease parcels and stipulations is made available to the public through a Notice of Competitive Lease Sale (NCLS). Lease stipulations and notices applicable to each parcel are specified in the sale notice.

It is unknown when, where, or if future well sites or roads might be proposed on any leased parcel. Although no site-specific activities are specified, analysis of projected surface disturbance impacts, should a lease be developed, was estimated based on the RFD in the PFO Record of Decision and Approved Resource Management Plan and its associated Final Environmental Impact Statement. This EA would be used to determine the necessary administrative actions, stipulations, lease notices, special conditions, or restrictions that would be made a part of an actual lease at the time of issuance. If leases are offered, purchased, and issued, typical subsequent developments may include the construction of drill pads, access roads, and other ancillary facilities. Detailed site-specific analysis of individual wells, roads, and facilities would occur when a lease holder submits an APD. Under all alternatives, continued interdisciplinary support and consideration would be required to ensure on-the-ground implementation of planning objectives, including the proper implementation of stipulations, lease notices, and Best Management Practices (BMPs) through the APD process.

Standard lease terms provide for reasonable measures to minimize adverse impacts to specific resource values, land uses, or users (Standard Lease Terms are contained in Form 3100-11, Offer to Lease and Lease for Oil and Gas, U.S. Department of the Interior, BLM, June 1988 or later edition). Although once the lease has been issued, subject to lease stipulations the lessee has the right to use as much of the leased land as necessary to explore for, drill for, extract, remove, and dispose of oil and gas deposits located under the leased lands, operations must be conducted in a manner that avoids unnecessary or undue degradation of the environment and minimizes adverse impacts to the land, air, water, cultural, biological, and visual elements of the environment, as well as other land uses or users. Compliance with valid, nondiscretionary statutes (laws) is included in the standard lease terms and would apply to all lands and operations that are part of all of the alternatives. Nondiscretionary actions include the BLM's requirements under federal environmental protection laws, such as the Clean Water Act (CWA), Clean Air Act (CAA), ESA, NHPA, and FLPMA, which are applicable to all actions on federal lands even though they may not be reflected in the oil and gas stipulations in the RMP(s) 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 (WO IM-2005-03, Cultural Resources and Tribal Consultation for Fluid Minerals Leasing) and threatened, endangered and special status species (WO IM-2002-174, Endangered Species Act Section 7 Consultation). BLM would also encourage industry to consider participating in EPA's Natural Gas STAR program under all alternatives. The program is a flexible, voluntary partnership between EPA and the oil and natural gas industry wherein EPA works with companies that produce, process, transmit and distribute natural gas to identify and promote the implementation of cost-effective technologies and practices to reduce emissions of methane, a greenhouse gas.

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

4.2.1 Reasonably Foreseeable Development

As described above, the RFD scenario serves as an analytical baseline for identifying and quantifying direct, indirect, and cumulative effects of oil and gas activity and forms the foundation for the analysis of the effects of oil and gas management decisions in planning and environmental documents. The PFO Proposed Resource Management Plan and Final Environmental Impact Statement (RMP EIS) Appendix M describes in detail fluid mineral RFD scenarios for PFO area. In those analyses it was estimated based on the occurrence potential and past exploration and development activities that the BLM believes that future exploration and development are most likely to occur on the Wasatch (Emery/Book Cliffs CBNG Plays) which primarily run along highways 6 and 10; and the Tavaputs Plateau in the far northeast area of the field office.

The PFO Proposed RMP/Final EIS Appendix M states that the initial surface disturbance impacts from oil and gas activity for the Proposed RMP are 15,210 acres over 20 years. The long-term surface disturbance impacts from oil and gas activity for the Proposed RMP are 5,620 acres over 20 years. Impacts from past and present activity are estimated at 3,200 acres (after reclamation), and when added to projected future activity, the estimate is about 18,500 acres in total disturbance. Future initial impacts will be reduced from 7.9 to 2.8 acres per well pad through reclamation, resulting in a net total disturbance of approximately 8,800 acres. Application of BMPs and revised mitigation resulting from improved technologies and adaptive management processes are expected to further reduce impacts in the future.

The WTP EIS and ROD that was signed July, 2010 included a comprehensive environmental analysis of the direct, indirect, and cumulative impacts of construction, drilling, completion, and production activities. The WTP EIS analyzed the drilling of up to 807 oil and gas wells from up to 538 well pads within a 137,930 acre project area. The ROD approved drilling of 626 wells from approximately 120 well pads on leased federal lands over a 4 to 7 year period. Anticipated short-term surface disturbance associated with the project is approximately 1,603 acres (includes Federal, State, and private lands). Lease sale parcels UT1111-017 through UT1111-022 are within the area analyzed in the WTP EIS. The development occurring on the WTP is directly adjacent to and within the immediate vicinity of these parcels. It is reasonably foreseeable that similar proposals and mineral development may occur on these parcels.

For analysis purposes, this EA assumes that one well and associated facilities could be developed on each lease for the parcels outside of the WTP project area. Parcels within the WTP project area contain a different development assumption as defined in the WTP EIS, which analyzed development on leased and unleased lands.

4.2.2 Well Pad and Road Construction

Equipment for well pad construction would consist of dozers, scrapers, and graders. Topsoil from each well pad would be stripped to depth and stockpiled for future reclamation. The topsoil would be seeded with native species of plants and left in place for the life of the well, then used during the final reclamation process. Disturbance for each well pad would be estimated at an area of approximately 175 feet by 250 feet (one acre), including topsoil piles. For this analysis, it was assumed that disturbance for well pads could be as high as six acres per well to account for any access roads and well pad construction. Disturbed land would be seeded with a mixture and rate as recommended or required by the BLM.

Depending on the locations of the proposed wells, it is anticipated that some new or upgraded access roads would be required to access well pads and maintain production facilities. Construction of new roads or upgrades to existing roads would require a 30-foot wide right of way (ROW) and would be constructed of native material. It is not possible to determine the distance of road that would be required because the location of the wells would not be known until the APD stage. However, for purposes of analyses it is assumed that disturbance from access roads would be similar to development in other areas (five acres of disturbance).

All operations would be conducted following the "Gold Book" Surface Operating Standards for Oil and Gas Exploration and Development (BLM 2002b). 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.

Proper planning and consultation, along with the proactive incorporation of these BMPs into the APD Surface Use Plan of Operations (SUPO) by the operator, will typically result in a more efficient APD and environmental review process, increased operating efficiency, reduced long-term operating costs, reduced final reclamation needs, and less impact to the environment.

4.2.3 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 surface discharge pits or underground injection. Handling of produced water is addressed in Onshore Oil and Gas Order No. 7, which prescribes measures required for the protection of surface and ground water sources**.**

4.2.4 Plugging and Abandonment

If the wells do not produce economic quantities of oil or gas, the well would be plugged and abandoned. The wells would be plugged and abandoned following specifications from a BLM Petroleum Engineer, which would include requiring cement plugs at strategic positions in the well bores. 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, the fluid would be pumped from the pit and disposed of in accordance with applicable regulations. The well pad would be recontoured, and topsoil would be replaced, scarified, and seeded within 180 days of the plugging the well. All reclamation efforts would be coordinated closely with the project lead in the PFO. Reclamation would meet the objectives described in the Green River District Reclamation Guidelines (IM UTG000-2011-003).

4.3 Direct and Indirect Impacts

4.3.1 Alternative A – Proposed Action

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

4.3.1.1 Cultural Resources and Native American Concerns

The BLM consulted the SHPO with a request to address the cultural resources here under the Protocol Agreement (Utah Protocol Part VII.A.B. will be applied); SHPO concurrence would eliminate the resources included here from concern. A letter was sent to the SHPO on May 31, 2011. On June 9, 2011, the Utah SHPO concurred with the PFO determination. The PFO has determined that the proposed undertaking will have "No Historic Properties Affected" on historic properties. Cultural resources on the nominated parcels would not be directly impacted by the issuance of leases. However, the issuance of leases does convey an expectation that drilling and development could occur. Indirect impacts to cultural resources could result from future lease actions, such as exploration or operational activities.

Each issued lease would contain a mandatory stipulation for the statutory protection of cultural resources (WO IM-2005-03), which would be enforced through any future authorization to conduct exploration or operational activities under the lease. Potential impacts relating to future authorizations would be mitigated through avoidance whenever possible. Due to the expected site type and site density, reasonable development could occur on these parcels without effect to historic properties. To assure appropriate consideration of future effects from the lease sale, the BLM would add the following lease stipulation to all parcels offered for lease.

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

West Tavaputs Parcels UT1111-017 through UT1111-022

A detailed analysis of cumulative impacts to cultural resources associated with leasing and development in the WTP Project Area is included within the WTP EIS in Section 4.12. While the PFO has determined that the proposed undertaking of leasing parcels UT1111-017 through UT1111-022 in and of it will not adversely affect historic properties, based on the analysis contained in the EIS, the BLM made a determination that the cumulative effects of leasing and development in the WTP Project Area could result in adverse effects to historic properties including the potential for dust to settle on and effect the visual appearance of rock art, changes in the cultural setting in Nine Mile Canyon, and indirect impacts to sites over the entire area of potential effect.

The Programmatic Agreement was developed to mitigate or eliminate potential adverse effects of development for the area. Any development on the leases within the WTP Project Area may be subject to the measures to that were developed under the agreement. The Programmatic Agreement is Attachment 4 of the Record of Decision for WTP.

The following tribes have been notified via certified letter: Paiute Tribe of Utah, the Ute Indian Tribe, Hopi Tribe, Zuni Tribe, Navajo Nation, Ute Mountain Tribe, Southern Ute Tribe, Northwestern Band of Shoshone Nation, Shoshone-Bannock Tribes, and Eastern Shoshone Tribe. To date, no specific concerns have been identified with this leasing action. As part of the WTP Programmatic Agreement (Stipulation 3), the BLM will continue to consult with Indian Tribes regarding historic properties of religious and cultural significance.

The Navajo Nation responded in a letter received by BLM on June 30, 2011. In their reply the Navajo Nation expressed that the leases will not impact Navajo traditional cultural resources and that they did not have any concerns at this time. They did request to be notified if anything is inadvertently discovered at the project stage.

The Paiute Indian Tribe of Utah responded in a letter received by the BLM on June 10, 2011. In their reply they stated that they do not have any objections to the project and are not aware of any archaeological resources.

An additional cultural resource stipulation (UT-S-169) will be attached to each parcel for this lease sale.

4.3.1.2 Threatened, Endangered, Candidate or Sensitive Animal Species

The issuance of leases would not directly impact threatened, endangered, or candidate animal species on the nominated parcels. However, the issuance of leases does convey an expectation that drilling and development could occur. Impacts to these resources could result from future lease actions, such as exploration or operational activities. Application of the appropriate species-specific lease notices would be adequate for the leasing stage to disclose potential restrictions against future authorizations. Appropriate lease stipulations and notices have been included within the Proposed Action to protect habitat values. Project-specific impacts relating to future authorizations cannot be analyzed until an exploration or development application is received.

Each lease would be issued with the mandatory WO IM-2002-174 endangered species act stipulation, which would be enforced through any future authorization to conduct exploration or operational activities under the lease. Potential impacts relating to future authorizations would be mitigated through avoidance whenever possible. To assure appropriate consideration of future effects from the lease sale, the BLM would add the following lease stipulation to all parcels offered for lease.

> *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.*

For parcels UT1111-017 through UT1111-022 the cumulative impacts to threatened, endangered, candidate, and sensitive animal species were fully analyzed within Section 4.10 of the WTP EIS. A summary of the impacts is included in the sections below.

Mexican spotted owl

Implementation of the Proposed Action could affect Mexican spotted owls (MSO) that potentially nest or hunt within the area due to a loss of foraging habitat, potential displacement from nesting and hunting areas, and potential exposure to hazardous substances associated with produced water. Construction of well pads, roads, pipelines and other facilities as well as increased human activity could result in a loss of foraging habitat including USFWS-designated critical habitat for MSO.

Field surveys for MSO would be conducted according to USFWS protocol in all potential MSO habitats. No surface disturbance would be permitted within known populations or designated critical habitat of Mexican spotted owl, without consultation or conference between the BLM and USFWS. These actions could increase costs to the operator and potentially require relocating access roads, drill pads, pipelines, and other ancillary facilities. For larger areas of special status species habitat, directional drilling would potentially be required to extract the resources, which could increase operator costs.

The Proposed Action could result in a short-term loss of potential foraging habitat for the MSO, depending upon locations of facilities, which are unknown at the present time. Because it is not known if one habitat cover type is more beneficial than another in regards to MSO prey species, all habitat loss under the Proposed Action could be considered a potential loss of MSO foraging habitat; however, habitat losses within USFWS-designated critical habitat would be considered to be most important. A decrease in prey base habitats and consequently, prey availability could result in increased energy expenditure and time spent away from nest sites.

Fish

Impact analysis for the bonytail, Colorado pikeminnow, humpback chub, and razorback sucker (collectively known as the Colorado River fish) are discussed together, based on their similarity of affected habitat within the Green River and potential impacts under the Proposed Action.

No surface disturbance would occur within USFWS-designated critical habitat for the Colorado River fish located in the Green River, which flows through Desolation Canyon. However, Colorado River fish present in the Green River would be impacted as a result of the Proposed Action by activities that deplete water, increase erosion and sedimentation (to Nine Mile Creek and the Green River), and increase the potential for exposure to hazardous substances in the case of an accidental spill.

The Colorado River fish are affected by activities that deplete or degrade the flow of downstream waters into the Upper Colorado River Basin. In addition to reducing the quantity of water with sufficient quality in a specific location, water depletions can also reduce a river's ability to create and maintain the physical habitat (areas inhabited by, or potentially inhabitable by, special status fish for use in spawning, nursery, feeding, and rearing, or access to these habitats) and the biological environment (food supply, predation, and competition). Water depletions can also contribute to alterations in flow regimes that favor non-native fish that compete with native fish species for resources.

No surface disturbance or water withdrawal that would affect the listed fish species, without consultation or conference between the BLM and USFWS, would occur. These actions could increase costs to the operator and potentially require relocating access roads, drill pads, pipelines, and other ancillary facilities. For larger areas of habitat, directional drilling would potentially be required to extract the resources, which could increase operator costs.

Greater Sage Grouse

In this part of Utah, especially in the WTP, the Greater sage-grouse move lower in elevation as the snow levels deepen during the winter. However at all times, sagebrush leaves are the only food eaten during the winter. Sagebrush stands, without any trees close by, are the wintering areas for sage grouse. The Emma Park area has extensive sagebrush stands with an occasional clump of trees, while the WTP is just the opposite, with extensive stands of Pinyon-Juniper with an occasional sagebrush park. Within the parcels nominated for leasing, Sagebrush Flat is the largest park and the most heavily used by sage grouse as wintering habitat.

Construction of oil and gas facilities, including the roads to provide access to the facilities, has the greatest impact on sage grouse if they are located in natural sagebrush parks. The impacts are relative to the amount of sagebrush that is present in the immediate area. The more sagebrush available that can be used as wintering habitat means less impact if sagebrush is removed by roads or facilities. While, like in the WTP, little sagebrush areas mean big impacts if any sagebrush is removed or if there are disturbances right next to the sagebrush areas during the winter.

During the leasing stage, facilities and road locations are not known. When an APD is submitted, then the exact locations are known. There could be a range of impacts varying from none to extensive, based upon the time of construction and the location of the facilities and road. The immediate impacts and the long-term effects can be reduced by locating the proposed project features away from important sage grouse areas and avoiding times when the sage grouse are present.

Parcels UT1111-001 and UT1111-002 contain nesting and brood-rearing habitat and are adjacent to historic lek sites. The parcels are also within crucial winter habitat for sage grouse. Two stipulations have been attached to these parcels (UTSO-S-91 and UTSO-S-94) to seasonally protect sage grouse habitat should development be proposed in this area.

Parcels UT1111-017 through UT1111-022 are located in the WTP and are close to an existing natural gas field. Effects on sage grouse were a concern in the WTP EIS ROD. In the final WTP it was decided that fewer wells would be drilled in greater sage-grouse winter range in order to reduce the overall development footprint, and the companies developing the area would invest in mitigation to enhance the existing winter range habitat and to close or reroute existing roads that bisected sage-grouse winter range. Mitigation efforts commenced in late 2010 with the closure of one of the roads, which was on Sagebrush Flat. In the WTP EIS, Sagebrush Flat and the immediate vicinity were identified as a core sage-grouse winter-use area. The BLM has identified mitigation measures, which will allow the agency to grant a waiver or exception to seasonal timing limitations in the WTP Project Area on a project-by-project basis as specific applications for development on the affected lease, are submitted except in areas that the Utah Division of Wildlife Resources and the BLM have identified as the core sage-grouse winter-use areas.

For the core winter use areas, the WTP EIS includes these measures for Sage Grouse;

- Disturbance will be minimized in and around core winter use areas through strategic planning for optimal realignment of existing roads and placement of new roads, well pads and other infrastructure, thereby reducing habitat fragmentation.
- No surface disturbance will be authorized in core winter use areas (during any time of the year) until the operator submits a site-specific plan of development for proposed roads, wells, pipelines, and/or other project features that will be constructed within those areas.
- No winter development (i.e., construction, drilling, or completion activities) will be allowed in core winter use areas in the Peters Point area *(Sagebrush Flat and surrounding area)* between December 1 - March 14.

Included in the special protection measures for wildlife, is a requirement that BBC and other operators must realign existing roads within core sage-grouse winter habitat, thereby reducing fragmentation. Evidence suggests that habitat fragmentation and destruction across much of the species' range has contributed to population declines over the past century. If current trends persist, many local populations may disappear in the next several decades, with the remaining fragmented population vulnerable to extinction. Sagebrush is essential for sage grouse habitat, however not all sagebrush areas are equal habitat for grouse. The USFWS recommend that a healthy understory containing grasses and forbs is needed to conserve large intact expanses of habitat.

During the winter of 2011, the Utah Division of Wildlife Resources radio tracked approximately 10 sage grouse. Those grouse and others without radios wintered in Sagebrush Flat. Other sagebrush parks that had been used as wintering habitat were not used this past winter. Based upon this actual use by the sage grouse, Sagebrush Flat is a very important wintering area that appears to be irreplaceable habitat.

Most of parcel UT1111-021 is located in a core winter use area of the WTP EIS. Due to this very important wintering habitat the following area is recommended for deferral - T. 13 S., R. 16 E., SLM; Sec. 4: Lot 4, SWSW; Sec. 5: Lot 1, SESE; Sec. 8: NENE; Sec. 9: NWNW. The deferred area is approximately 240 acres of parcel UT1111-021 which is approximately 1,202 acres. The deferred area amounts to approximately 19.9% of parcel UT1111-021 leaving approximately 962 acres of the parcel for sale.

The BLM will attach the sage grouse winter range timing limitation stipulation that would close these areas with sage grouse winter habitat from December 1 to March 14 of each year to protect winter sage grouse and the habitat to the remainder of the parcel and other parcels in the WTP.

4.3.1.3 Threatened, Endangered, Candidate or Sensitive Plant Species

The issuance of leases would not directly impact threatened endangered, candidate or sensitive plant species on the nominated parcels. 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. Chapter 3 identifies species that could be impacted through future actions on leased parcels. Indirect impacts to these resources could result from future lease actions, such as exploration or operational activities.

For parcels include in the WTP Project Area potentially effecting threatened, endangered, candidate, and sensitive plants species, impacts of future development activities were fully analyzed within Section 4.10 of the WTP EIS.

Application of the appropriate species-specific lease notices and T&E-05 (Listed Plant Species) and application of the following two lease notices UT-LN-49 (Utah sensitive species) and UT-LN-51 (Special Status Plants: Not Federally Listed) to each of the identified parcels on federal surface would be adequate for the leasing stage to disclose potential restrictions against future authorizations. The mandatory ESA stipulation attached to each parcel (listed above) would also protect special status plant species. Impacts to the identified species and their respective habitats resulting from future authorizations connected to the proposed leases cannot be analyzed until an exploration or development application is received, individual species surveys are completed, and necessary avoidance and mitigation incorporated into the plan of development or applied to the application as a condition of approval.

4.3.1.4 Hydrologic Conditions

Drill pads would have the potential to interrupt surface flow patterns which could create new channeling of surface runoff from storms and spring snow melt. Flow patterns moving onto the pads and around them would have reduced vegetation to slow flows and filter sediments. Berm placement around the well pads and proper placement of the drill pads would mitigate these impacts.

There is a potential for impacts to groundwater levels, but casing as a standard practice through the groundwater zones would reduce impacts to negligible.

The installation of new access roads would interrupt surface runoff and create paths for concentrated surface flow. Flow patterns could be interrupted, causing the flows to create new paths, and thus creating rills and gullys. Roadways would create concentrated flow for runoff water from storms and spring snow melt. Strict compliance to BLM manual 9113 would reduce this impact to acceptable levels.

Short term impacts to hydrologic conditions would be increased sediment loading and associated dissolved solids in the streams as non-point source pollution. This would reduce to normal levels for the area over the long term provided mitigation measures listed above are complied with.

For parcels UT1111-017through UT1111-022, impacts of leasing and future development activities on soil and water resources are discussed in Sections 4.4 and 4.5 of the WTP EIS. In addition, operators may be required to comply with conditions of approval outlined in the ROD for the project, which includes measures to protect water and soil resources.

4.3.1.5 Non WSA Lands with Wilderness Characteristics

Potential impacts of leasing and future development activities on parcels UT1111-017 through UT1111-022 would result in direct and indirect impacts to the wilderness characteristics including: loss of size, loss of naturalness, loss of outstanding opportunities for solitude, and loss of outstanding opportunities for primitive and unconfined recreation. Impacts resulting from development in these areas was is discussed in detail within the WTP EIS in Sections 4.17.1.3.

All of parcel UT1111-021 overlaps the 1,465 acre Jack Canyon wilderness characteristics unit, which is contiguous to the 7,500 acre Jack Canyon WSA. Where development would occur within the area is currently unknown; however, it is estimated that at a minimum approximately six acres would be disturbed within the parcel as the result of the placement of a single well pad and access road. Because of the potential for discovery of oil and gas in the area, the WTP EIS estimated that up to 12 wells and 75 acres of surface disturbance could occur. Regardless of the number of wells that may be established on the parcel, it is expected that the wilderness characteristic of naturalness will be directly lost at the pad and along the access road. Acreage within the unit that is not directly affected by drilling activity and road construction will retain its natural character. This is because topography and vegetative screening can disrupt the visual and auditory impacts from drilling activity. Other indirect impacts to the wilderness characteristic of outstanding opportunity for solitude will occur within the immediate vicinity of the drilling activity (visual and auditory impacts) and would extend for a short distance beyond the areas of direct disturbance. However outstanding opportunities for solitude and primitive recreation do not have to be present upon every acre of potential wilderness character lands. The Jack Canyon unit is contiguous to the Jack Canyon WSA and those wilderness characteristics found in the WSA are also attributed to the inventory unit. As a result the remaining acreage of the Jack Canyon unit that retains its naturalness would still have wilderness character.

Approximately 5,233 acres of parcels UT1111-017 through UT1111-020 and UT1111-022 would overlap the 204,643 acre Desolation Canyon wilderness characteristics unit, which is contiguous with the 290,845 acre Desolation Canyon WSA. Where development would occur within the nominated leases is currently unknown; however, it is estimated that at a minimum approximately 30 acres would be disturbed as the result of the placement of a single well pad and access road on each parcel, Because of the potential for discovery of oil and gas in the area, the WTP EIS estimated that up to 198 wells and 1,205 acres of surface disturbance could occur on existing leased acreage and on the parcels under consideration in the wilderness characteristics unit. Regardless of the number of wells that may be established on the parcels, it is expected that the wilderness characteristic of naturalness will be directly lost at the pad and along the access road locations. Acreage within the unit that is not directly affected by drilling activity and road construction will retain its natural character. This is because topography and vegetative screening can disrupt the visual and auditory impacts from drilling activity. Other indirect impacts to the wilderness characteristic of outstanding opportunity for solitude will occur within the immediate vicinity of the drilling activity (visual and auditory impacts) and would extend for a short distance beyond the areas of direct disturbance. However outstanding opportunities for solitude and primitive recreation do not have to be present upon every acre of potential wilderness character lands. The Desolation Canyon unit One is contiguous to the Desolation Canyon WSA and those wilderness characteristics found in the WSA are also attributed to the inventory unit. As a result the remaining acreage of the Desolaton Canyon unit One that retains its naturalness would still have wilderness character.

Within the WTP ROD the BLM outlined specific conditions of approval for development in these areas to minimize impacts to sensitive resources. These parcels may be subject to the terms and conditions included in the ROD.

4.3.1.6 Air Quality

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 will remain 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) will need to be conducted to adequately analyze direct and indirect potential air quality impacts. 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 nearby 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, since the Uinta Basin is considered to be in attainment of the NAAQS. Different emission sources would result from the two site specific lease development phases: well development and well production.

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.

Lease stipulation UT-S-01 Air Quality, which regulates the amounts of NO_X emission per horse-power hour based on internal combustion engine size, would be attached to all parcels. However, additional air impact mitigation strategies have recently been developed in the Uinta Basin. These are listed in the below mitigation section.

Emissions Inventory Parcels Within the WTP Project Area (UT1111-017 through UT1111-022):

Air quality was analyzed for the 6 parcels within the WTP EIS and all information can be found within the Air Quality Technical Report (Appendix J), as such BLM is tiering to this EIS. This Report includes a near field dispersion model and meteorology, exposure thresholds, sub grid impacts and air pollutant results, including an emissions discussion. This air quality analysis remains valid because the RFD has not changed and remains current.

These parcels occur within the Unita Basin where an additional air analysis was completed for the Greater Natural Buttes EIS that also addressed regional settings, standards, emissions data (including production and operation values), modeling procedures, assessment/reporting of impacts, and greenhouse gas emissions. BLM is incorporating by reference the relevant portions of this EIS, as supplement.

Emissions Inventory for Parcels Outside of WTP Project Area (UT1111-01, UT1111-02 and UT1111-05):

Due to the very small level of anticipated development (1 well per year), an emission inventory (EI) has not been conducted for the parcels that occur outside of the WTP project area. A typical oil and gas well EI is estimated for the purpose of this analysis and is based on the following analysis assumptions:

- Each oil and gas well would cause 6 acres of surface disturbance. This acreage is divided into 5 acres for road and pipeline construction and 1 acre for well pad construction.
- 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 14 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 will not be considered as they are dispersed, sporadic, temporary, and not likely to cause or contribute to exceedence of the National Ambient Air Quality Standards.
- The estimated EI for the typical well includes particulate matter of less than 10 micrometers in diameter (PM_{10}), nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compounds (VOC). Emissions of sulfur dioxide (SO_2) and lead (Pb) from oil and gas development activities are insignificant and are not included.

4.3.1.7 Mitigation

The BLM in coordination with the EPA and the UDAQ, among others, developed the following air quality mitigation measures. Integration of and adherence to these measures may help minimize adverse local or regional air quality impacts from activities carried out during oil and gas development (including but not limited to construction, drilling, and production). As per the WTP ROD and the GNB DEIS, as supplemented, the following avoidance and minimization measures should be considered in the Plan of Development:

- Electric compression, where feasible.
- Emission controls having a control efficiency of 95 percent on existing condensate tanks with a potential to emit of greater 20 tpy, and on new condensate tanks with a potential to emit of 5 tpy VOCs.
- Green completions for all well completion activities.
- Tier II drill rig engines by 2012, with phase-in of Tier IV engines or equivalent emission reduction technology as soon as possible thereafter, but no later than 2018
- Lean burn natural gas-fired stationary compressor engines or equipment with equivalent emission rates.
- Catalyst on all natural gas-fired compressor engines to reduce the emissions of CO and VOCs.
- Dry seals on new centrifugal compressors.
- An annual inspection and maintenance program to reduce VOC emissions, including:
    - Performing inspections of thief hatch seals and Enardo pressure relief valves to ensure proper operations.
    - Reviewing gathering system pressures to evaluate any areas where gathering pressure may be reduced, resulting in lower flash losses from the condensate storage tanks.
    - Vent emissions from stock tanks and natural gas TEG dehydrators would be controlled by routing the emissions to a flare or similar control device which would reduce emissions by 95% or greater.
    - Low bleed pneumatics would be installed on separator dump valves and other controllers. The use of low bleed pneumatics would result in a lower emission of VOCs.

  - During completion, flaring would be limited as much as possible. Production equipment and gathering lines would be installed as soon as possible.
  - Well site telemetry would be utilized as feasible for production operations.
- 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 NO_x 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 NO_x per horsepower-hour.

Additional site-specific measures may also be employed to avoid or minimize effects to local or regional air quality. These additional measures will be developed and implemented in coordination with the EPA, the UDAQ, and other agencies with expertise or jurisdiction as appropriate.

Residual Impacts

Application of these lease notices to each of parcels on federal surface would be adequate for the leasing stage to disclose potential future restrictions and to facilitate the reduction of potential impacts upon receipt of a site specific APD.

4.3.2 Alternative B – No Action

This alternative (not to offer any of the nominated parcels for sale) would not meet the need for the proposed action. The sale of oil and gas leases is needed to meet the growing energy needs of the United States. Furthermore, it is a stated goal of the PFO ROD/RMP to provide opportunities for mineral exploration and development under the mining and mineral leasing laws subject to legal requirements to protect other resource values. The PFO ROD/RMP categorizes the areas incorporated by the nominated parcels as open to leasing with the application of standard leasing stipulations and notices.

4.3.2.1 Cultural Resources and Native American Concerns

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

The No Action alternative would prevent future potential impacts relating to lease operations. Although drilling and production activities on federal land surfaces are restricted to leased parcels, oil and gas exploration may also be authorized on unleased public lands, on a case-by-case basis, pursuant to 43 CFR 3150.0-1. Accordingly, this alternative would not prevent direct, indirect, or cumulative environmental impacts relating to oil and gas exploration activities through denial of the proposed action. Additionally, this alternative would not prevent indirect impacts relating to rights of way authorizations to support oil and gas operations on adjacent leased parcels. Native American concerns for these actions for parcels UT1111-017 through UT1111-022 were addressed in the WTP EIS (BLM2010).

4.3.2.2 Threatened, Endangered, Candidate or Sensitive Animal Species

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

4.3.2.3 Threatened, Endangered, Candidate or Sensitive Plant Species

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

4.3.2.4 Hydrologic Conditions

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

4.3.2.5 Non WSA Lands with Wilderness Characteristics

The No Action Alternative would prevent future potential impacts relating to lease operations within the Non-WSA lands with wilderness characteristics. Impacts to Non-WSA lands with wilderness characteristics would continue at present levels from existing oil and gas development.

4.3.2.6 Air Quality

The No Action alternative would not result in potential impacts relating to development should the parcels be leased.

4.3.3 Cumulative Impacts Analysis

A cumulative impact is defined in CEQ regulations (40 CFR §1508.7) as “the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.” Cumulative impacts can result from individually minor but collectively major actions taking place over a period of time. The Proposed Resource Management Plan and Final Environmental Impact Statement, 2008 developed an RFD scenario and analyzed the cumulative impacts of oil and gas leasing based on that scenario. That analysis is incorporated by reference herein.

The RFD projects the number of well pads to be constructed in the planning area during the next 20 years on all lands (BLM, USFS, State of Utah, and private). Spacing of Coalbed Natural Gas (CBNG) wells is currently at one well pad per 160 acres, but future activity could reduce the spacing to one well pad per 80-acres (note: an increase in well pad density to one well pad per 80 acres, 40 acres, or other spacing does not necessarily mean twice or four times the number of well pads as multiple wells may be drilled from a single pad). 80-acre well pad spacing is projected for parts of the Tavaputs Plateau area, but future activity could reduce this to 40-acre spacing or even less.

It is anticipated that approximately 75 percent of the new well pads will be on BLM land, and 25 percent on USFS, State of Utah, or private lands, with most activities for BLM-managed lands occurring in the CBNG and the West Tavaputs area.

The described impact estimates are for analysis purposes. Actual disturbances may vary based on multiple wells from a single pad, unforeseen economic conditions, new technologies, inaccuracies in the RFD scenario, and other changed conditions. Such changes will be addressed in any required site-specific analyses. The RFD analysis cannot be viewed as an absolute threshold for limiting activities, but rather as information necessary for making informed decisions regarding the allocation of lands that will be made available for oil and gas leasing under appropriate stipulations. Oil and gas implementation actions will undergo further reviews as necessary to ensure the existing EAs and EISs are adequate, current, and accurately reflect potential impacts for informed decision making. Future analyses may result in modification/amendment of the proposed RMP decisions, goals, objectives, management actions, and the accompanying EIS impact analysis.

4.3.3.1 Cultural Resources and Native American Concerns

Parcels UT1111-001, UT1111-002 and UT1111-005

Known cultural resources are located in such a fashion (size, density and placement) that avoidance is feasible during development of oil and gas resources. The Propose Action will avoid adverse effects to NRHP eligible cultural resources; therefore implementation of the proposed action would not contribute to cumulative impacts to this resource.

Parcels UT1111-017 through 022

Cumulative impacts for Cultural Resources for the WTP parcels are incorporated by reference to 5.12 in the WTP EIS. For cultural resources, the CIA is the Book Cliffs Roan Plateau physiographic subdivision within the Colorado Plateau. The CIA is known to have substantial Fremont and Ute period archaeological sites such as those that can be found in Range Creek, Desolation Canyon, and Nine Mile Canyon. Activities within the CIA that could have potential cumulative impacts on cultural resources include surface-disturbing activities, dust accumulation and its impact on rock art, changes in visitation, inadvertent or advertent (i.e., vandalism) damage to cultural resources, impacts to identified and unidentified Traditional Cultural Properties, scientific studies, increased motorized access into areas, and recreational use. Surface disturbance resulting from mineral exploration and development as well as road construction could potentially cause the greatest amount of cumulative effects to cultural resources in the CIA. Visual, noise, atmospheric, vibration, and other such intrusions affect the cultural setting and viewshed of historic properties, both of which contribute to their NRHP eligibility.

The WTP ROD integrates the WTP Programmatic Agreement which incorporates several measures that are intended to monitor, reduce, minimize, or avoid cumulative impacts to cultural resources. In addition, many potential cumulative impacts to cultural resources would be reduced through the implementation of Federal regulatory laws, actions, and guidelines designed to protect cultural resources, and through the consultation process with the SHPO and Native American Tribal representatives.

4.3.3.2 Threatened, Endangered, Candidate or Sensitive Animal Species

The CIA for Threatened, Endangered, Proposed or Candidate Animal Species will be the Price Planning Area. Cumulative impacts are incorporated by reference to 4.7.3 in the Price RMP. Cumulative impacts include reduction in AUMs for wildlife and loss of wildlife and fisheries habitat, habitat fragmentation, and disruption or alteration of seasonal migration routes. 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 activities. The proposed action would contribute to these cumulative impacts by making nine parcels available for lease sale and oil and gas development; with the potential for future surface disturbance should the leases be developed. It is assumed that the proposed action would add one well pad with road and pipeline on each lease for those not within WTP. For those within WTP the cumulative impact to Threatened, Endangered, Candidate, BLM Sensitive and Otherwise Special Status Animal Species was analyzed in Section 5.10.1

and is hereby incorporated within this document. The No Action alternative would not contribute any cumulative impacts.

Mexican spotted owl

The development of minerals and associated infrastructure could cause slight to substantial changes to important habitat components and population function. Individually, authorized wells would probably not affect overall species populations or threaten their existence; however, population function may decline over time and could become substantial as development increases. Disturbance to habitats could displace MSO, and possible long-term habitat deterioration could eliminate potential habitat that might otherwise foster expansion from current territories.

Potential displacement of nesting and hunting MSOs could occur as a result of increased noise levels (e.g., increased volumes and changes in ambient noise levels from construction, drilling, and production equipment, changes in ambient tones or tonal noises, and repetitive low frequency noise emanating from production equipment such as compressor stations) and artificial lighting associated with project-related activities such as drilling and use of temporary working housing. Displacement from preferred nesting and hunting areas could force MSOs to travel further distances and thereby expend additional energy, causing greater physical stress. Displacement could also cause MSOs to move into less suitable habitats with greater predation or higher inter- and intra-specific competition for resources, even hiking through canyons could lead to declines in important activities such as prey delivery for nesting MSOs. Construction, drilling, and completion activities, and compressor stations and engines would increase noise levels and artificial lighting within the area, which could further limit use of potential nesting and hunting habitats.

Fish

Impact analysis for the bonytail, Colorado pikeminnow, humpback chub, and razorback sucker (collectively known as the Colorado River fish) are discussed together, based on their similarity of affected habitat within the Green River and potential impacts under the Proposed Action.

The development of minerals and associated infrastructure could cause slight to substantial changes to important habitat components and population function. Individually, authorized wells would probably not affect overall species populations or threaten their existence; however, population function may decline over time and could become substantial as development increases.

Depletion of surface water from Nine Mile Creek, Dry Creek, and Cottonwood Creek would result in a reduction of water flow within and downstream of the project area. Reduction of water flow could lead to habitat loss and/or degradation to the Colorado River fish.

The development of minerals and associated infrastructure could also degrade USFWS-designated critical habitat for Colorado River fish in the Green River by increasing erosion, sediment yield, and the potential for exposure to hazardous substances in the case of an accidental spill. However, impacts related to accidental spills of hazardous substances would be minimized due to compliance with SPCC regulations.

Sage-Grouse

The cumulative impact analysis area of sage-grouse includes all habitat within the PFO. Impacts to sage-grouse would primarily occur from lands and mineral actions within the PFO including oil and gas development and associated infrastructure, which could cause slight to substantial changes to important habitat components and population function.

Potential displacement of brooding and nesting sage-grouse could occur as a result of increased noise levels (e.g., increased volumes and changes in ambient noise levels from construction, drilling, and production equipment, changes in ambient tones or tonal noises, and repetitive low frequency noise emanating from production equipment such as compressor stations) and artificial lighting associated with project-related activities such as drilling and use of temporary working housing. Displacement from preferred brooding and nesting areas could force sage grouse to travel further distances and thereby expend additional energy,

causing greater physical stress. Displacement could also cause sage-grouse to move into less suitable habitats with greater predation or higher inter- and intra-specific competition for resources. The presence of surface facilities could also increase predation from perching raptors.

4.3.3.3 Threatened, Endangered or Candidate Plant Species

The CIA for Threatened, Endangered or Candidate Plant Species includes the PFO planning area. However, as suitable and occupied habitats have not been completely mapped and population estimates are largely unknown, accurate disturbance estimates for the CIA cannot be precisely quantified.

Cumulative impacts to Threatened, Endangered or Candidate Plant Species is directly associated with their ongoing habitat losses, sensitivity to disturbance, and declining population numbers, these species (e.g., Uinta Basin hookless cactus) would be more sensitive than other, more common species to impacts related to development within the CIA. Past, present, and reasonably foreseeable surface-disturbing land uses have reduced, and will likely continue to reduce, the quality and quantity of suitable and occupied habitats in the CIA for Threatened, Endangered or Candidate Plant Species.

Based on direct and indirect cumulative impacts, ongoing and future oil and gas development and other land uses such as OHV travel, forage utilization by livestock and wildlife, and noxious weed encroachment and management in the CIA could cumulatively and incrementally reduce and fragment habitats for Threatened, Endangered or Candidate Plant Species.

For those within WTP the cumulative impact to Threatened, Endangered, Candidate, BLM Sensitive and Otherwise Special Status Plant Species was analyzed in Section 5.10.2 and is hereby incorporated within this document.

4.3.3.4 Hydrologic Conditions

The associated surface disturbance should oil and gas development occur on the proposed leases would have the potential to interrupt surface flow patterns which could create new channeling of surface runoff from storms and spring snow melt. Should facilities be development close to or crossing waterways on the proposed parcels, the likelihood of project impacts would increase. These impacts could include increased sedimentation; increased salt loading; contamination by petroleum products, chemicals, or produced waters; and flow alterations. Impacts to hydrologic conditions could increase sediment loading and associated dissolved solids into streams. Impacts can be reduced or avoided through proper project design, construction, maintenance activities, and implementation of best management practices.

Specific locations, development techniques, and mitigation procedures are not included in the proposed action; therefore, specific descriptions of potential effects are unattainable at this time. Authorization of proposed projects would require full compliance with BLM directives and stipulations that relate to hydrologic conditions.

For those within WTP the cumulative impact to soils and water was analyzed in Section 5.4 and 5.5 and is hereby incorporated within this document.

4.3.3.5 Non-WSA Lands with Wilderness Characteristics

Cumulative impacts to lands with wilderness characteristics were considered in detail within the WTP EIS (Section 5.17.3.2) and the PFO RMP/ROD. The CIA for the Jack Canyon wilderness complex consists of the Jack Canyon non-WSA lands with wilderness characteristics, as well as the Jack Canyon WSA. The CIA for the Desolation Canyon wilderness complex consists of the Desolation Canyon Unit non-WSA lands with wilderness characteristics as well as the Desolation Canyon WSA. Cumulative impacts resulting from other past, present and reasonably foreseeable actions, including oil and gas development include loss of size, loss of naturalness, loss of outstanding opportunities for solitude, and loss of outstanding opportunities for primitive and unconfined recreation. During the PFO land use planning process, the Jack Canyon Unit and the Desolation Canyon Unit non-WSA lands were considered and thoroughly analyzed for the protection, preservation, and maintenance of those wilderness characteristics as well as for the

impacts that could occur if other resource developments and uses were allowed. The Approved Resource Management Plan, October 2008, Record of Decision, determined that the non-WSA lands with wilderness characteristics would not be managed for those characteristics because those lands were found to have other important resource uses that would conflict with protection, preservation, or maintenance of the wilderness characteristics (BLM, 2008b). Jack Canyon and Desolation Canyon Units fall within that determination.

4.3.3.6 Air Quality

The CIAA for air quality is the Uinta Basin. Cumulative air quality impacts are defined as the combination of emissions resulting from potential development of the proposed leases, existing nearby permitted sources, and Reasonably Foreseeable Development (RFD) within the region. Cumulative impacts are incorporated by reference to the Uinta Basin Air Quality Study (UBAQS, 2009), the Greater Natural Buttes air quality study (2010), and the West Tavaputs air quality study (2008). The modeling domain for each of these projects covers the parcels being considered under this lease sale. In addition each of these studies includes reasonably foreseeable development scenarios in the Uinta Basin for development on leased and unleased lands. It is not possible to accurately estimate emissions 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 will remain 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) will need to be conducted to adequately analyze cumulative potential air quality impacts. 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 nearby Class 1 areas (National parks and Wilderness areas).

The increase in emissions associated with development of the proposed leases would be localized, in some cases temporary (well drilling phase), and on a much smaller scale in comparison with regional emissions. Depending on the size of specific development on the proposed leases, regional ozone modeling may or may not be feasible when conducting project specific NEPA analysis for cumulative ozone impacts. For smaller projects without substantial emissions cumulative ozone impacts would be indistinguishable from, and dwarfed by, the margin of uncertainty associated with the regional cumulative VOC and NOx emission inventory. In these cases ozone and other cumulative regional air quality issues would be analyzed and disclosed through tiering to regional modeling currently ongoing in the Uinta Basin and/or associated with larger projects which can be effectively modeled using regional “one-atmosphere" photochemical models. Large oil and gas projects proposed for development under this lease sale will have project specific regional ozone modeling conducted to determine project specific impacts and to insure compliance with NAAQS and disclosure of any potential impacts to Air Quality Related Values. When compared to regional emissions inventories, the amounts of ozone precursors emitted from the assumed development are not expected to have a measurable contribution or effect on regional ozone formation due to agreed upon air pollution controls and mitigation. The No Action alternative would not result in an accumulation of impacts.

The assessment of GHG emissions and climate change is still in its earliest stages of formulation. At present, under current scientific data and models, it is not technically feasible to know with any certainty the net impacts to climate due to global emissions, let alone regional or local emissions. The inconsistency in results of scientific models used to predict climate change at the global scale, combined with the lack of scientific models designed to predict climate change on regional or local levels, prohibits the ability to quantify potential future impacts of decisions made at the local level, particularly for small scale projects such as the assumed development of the proposed leases. However, assumed drilling and development activities are anticipated to release a negligible amount of emissions, including GHGs, into the local airshed. The No Action alternative would not result in an accumulation of impacts.

For those within WTP the cumulative impact to air quality was analyzed in Section 5.3 and is hereby incorporated within this document.

5 CONSULTATION AND COORDINATION

5.1 Introduction

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

5.2 Persons, Groups, and Agencies Consulted

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
U.S. Fish & Wildlife Service	Information on Consultation, under Section 7 of the Endangered Species Act (16 USC 1531)	Formal consultation was completed as part of the RMP/ROD in the form of the Biological Opinion. Informal consultation was completed on May 5, 2011. Clarification of the consultation was completed on May 31 and June 7, 2011.
Utah State Historic Preservation Office	Consultation for undertakings, as required by the National Historic Preservation Act (NHPA) (16 USC 470)	Consultation letter was sent 6/1/11. BLM recommended "No Historic Properties Affected; eligible sites present, but not affected." SHPO concurrence was received.
Utah Division of Wildlife Resources	Coordination with UDWR as the agency with expertise on wildlife species.	Information for the Price parcels was received on May 2, 2011. All were incorporated into the document. Mitigation measures suggested were incorporated.
US Forest Service	Consult as USFS as a leasing program partner.	A letter was sent to the USFS on April 20, 2011 and subsequent letter on May 10, 2011. The UTSO received a letter from the Regional Forester on May 13,2011 expressing that the USFS had no comments regarding the lands in the November 2011 sale.
School and Institutional Trust Lands Administration	Coordinated with as leasing program partner.	A letter was sent to the SITLA on April 20, 2011 and subsequent letter on May 10, 2011 and no comments received.
Public Lands Policy	Coordinated with as leasing	A letter was sent to the PLPCO

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Coordination Office	program partner.	on April 20, 2011 and subsequent letter on May 10, 2011 and no comments received.
Paiute Tribe of Utah (PITU), Ute Indian Tribe, Hopi Tribe, Zuni Tribe, Navaho Nation, Ute Mountain Tribe, Southern Ute Tribe, Northwestern Band of Shoshone Nation, Shoshone-Bannock Tribes, and Eastern Shoshone Tribe	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and NHPA (16 USC 1531)	Consultation letters were sent May 25, 2011. Response letter from the Paiute Indian Tribe of Utah dated June 13, 2011, did not have any objections to the sale. Response letter from the Hopi Tribe dated June 6, 2011, requested a copy of the literature and inventory review for review and comment. In depth tribal consultation for the WTP area can be found in section 6.2.1 of the WTP EIS; and in the Programmatic Agreement found in attachment 4 of the WTP ROD.

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 issues related to a Proposed Action" (40 CFR 1501.7) several actions were taken to involve the public.

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

The BLM received 4separate comment letters from the public on the November 2011 lease sale. Comments were received from Bill Barrett Corporation, Stonegate Resource LLC, Southern Utah Wilderness Alliance[3] and the United States Environmental Protection Agency. However, only three [4] of these letters applied to the PFO EA. Modifications to this EA and responses to these comments are described in Sections 5.3.1 and 5.3.2, respectively.

The BLM also refers to the public involvement process utilized in developing the PFO ROD/RMP, the West Tavaputs Full Field Development ROD and the Greater Natural Buttes EIS, as supplemented.

[3] The Southern Utah Wilderness Alliance, the Utah Chapter of the Sierra Club, the Grand Canyon Trust, the Center for Native Ecosystems and the Wilderness Society collectively submitted one comment letter.
[4] Stonegate Resources LLC did not comment on this EA.

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

5.3.1 Modifications Based on Public Comment and Internal Review

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

1. Corrections to grammar, sentence structure, and formatting were made throughout the EA. In general, these changes were made without further clarification. Examples include: updates to the Table of Contents, changes in font size and style or insertion of footnotes. An August 2011 date was inserted into the header of each page.
2. Section 1.1, Introduction, an EOI nominator withdrew portions of their interest in parcels UT1111-017, UT1111-018 and UT1111-022. The corresponding acreage of the 9 parcels was changed to reflect this withdrawal.
3. Section 1.5, Relationship to Statutes, Regulations, or Other Plans, the Greater Natural Buttes Supplement to the Draft Environmental Impact Statement (2011) document was added.
4. Section 1.7, Issues Considered but Eliminated from Further Analysis, based on public comment additional discussion was included for disturbed desert dust.
5. Section 2.2, Proposed Action Alternative, BLM incorporates the conditions of approval and stipulations as defined in the WTP ROD, attachment 2 and provides additional clarification of the withdrawal of some portions of an EOI nomination.
6. Section 3.3.1, Cultural Resources, title was edited to include “and Native American Concerns.” This was done for the relevant sections in Chapter 4. Updates to Tribal consultation were inserted based on Tribal responses.
7. Section 3.3.3, Threatened, Endangered, Candidate or Sensitive Plant Species, BLM clarifies committed mitigation and conditions of approval as identified in the WTP ROD.
8. Sections 3.3.5 and 4.3.1.5, Non-WSA lands with wilderness characteristics, were edited to include specific discussions of the Jack Canyon Unit and Desolation Canyon Unit One and impacts associated with well development and retention of their wilderness character.
9. Section 3.3.6, Air Quality, a typical one well emission inventory is presented in a new Table 3.
10. Section 4.2.1, Reasonably Foreseeable Development, was edited to clarify the number of well RFDs.
11. Section 4.3.1.1, Cultural Resource and Native American Concerns, updates include SHPO concurrence and correspondence from the Tribes.
12. Section 4.3.1.2, Threatened, Endangered, Candidate or Sensitive Animal Species, under the Mexican spotted owl and fish subheadings, the discussion of waivers, modifications or exceptions was deleted.
13. Section 4.3.1.3, Threatened, Endangered, Candidate or Sensitive Plant Species, corrections were made to the lease notice numbers for the Utah sensitive species and special status plants.
14. Section 4.3.1.6, Air Quality, an emissions inventory discussion for parcels within and outside of the WTP project area was added.
15. Section 4.3.1.7, Mitigation, was changed to include the controls as established in the WTP ROD and the GNB EIS, as supplemented.

16. Sections 4.3.3.2 through 4.3.3.4 and 4.3.3.6, were clarified to incorporate by reference the WTP cumulative impact analysis.
17. Section 5.3, Agencies Consulted, the table findings and conclusions were updated subsequent correspondence with the SHPO and Tribes.
18. Section 5.3, Public Involvement, was updated to incorporate a summary of the EA public comment periods.
19. Section 5.3.1, Modification Based on Public Comments and Internal Review, was added to Chapter 5 to identify specific changes to the EA.
20. Section 5.3.2, Responses to Public Comment, was added to summarize concerns and responses to the comments received from the public. Because one of the comment letters contains several exhibits, none of the comment letters are attached to this EA. The actual comment letters and their associated exhibits have been posted on the oil and gas webpage for the November 2011 lease sale. Copies of each letter and their exhibits are made part of the lease sale record.
21. Section 6.1, References Cited, Greater Natural Buttes Supplement to the Draft EIS was added to the list of references.
22. Appendix A, list of parcels was modified to include the lease number assigned to each parcel. This information is necessary for the administration of a lease. For each parcel, the listing of stipulations and notices was changed cosmetically from all capital letters. As such, the content is easier to read. Stipulation UT-S-285 was not necessary and therefore removed from the list. Lease notice UT-LN-96 was edited and added to parcels UT1111-017 through UT1111-022, to include air quality controls required by the Greater Natural Buttes EIS, as supplemented. An EOI nominator withdrew portions of their interest in parcels UT1111-017, UT1111-018 and UT1111-022. The corresponding legal descriptions and acreages were changed to reflect this withdrawal. Lastly, as per plan maintenance, the following stipulations were edited to provide clarity and compliance with WO IM-2010-117: UT-S-212 (TL-greater sage grouse), UT-S-232 (TL-mule deer and elk winter range), UT-S-248 (TL-mule deer fawning and elk calving areas), UT-S-253 (TL-desert and rocky mountain bighorn sheep), UT-S-257 (TL-moose winter range), UT-S-260 (TL-raptor habitat) and UT-S-269 (NSO-Mexican spotted owl nests).
23. Appendix B, Maps, with the change in the EOI nomination for parcels UT1111-017, UT1111-018 and UT1111-022 and subsequent changes in the GIS shapefile, the corresponding maps were redrawn.
24. Appendix C, Interdisciplinary Team Checklist, was edited to delete the Critical Elements sub heading and replace it with resources and issues considered as per Appendix 1 of H-1790-1. EO 13112 was added to the invasive, non-native species resource column. Greenhouse gases was added to the checklist.
25. Appendix D, Response to Comments, was added to provide a summary of public comments and BLM's responses.

5.3.2 Response to Public Comment

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 field office, including the subject lease parcels.

Information within the comment letters 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.

Challenges[5] to the BLM's 2008 Price Field Office Record of Decision and Resource Management Plan (ROD/RMP) will not be considered. Likewise, specific responses to ongoing litigation will not be made.

Nominated parcels UT1111-017, UT1111-018, UT1111-019, UT1111-020 and UT1111-022 caused the most concerns. Overall, the public comments expressed concerns over BLM's level of analysis related to the potential impacts of oil and gas leasing and subsequent development on resources, specifically to air quality and its attributes for ozone and particulate matter [fine 2.5 microns ($PM_{2.5}$) and coarse 10 microns (PM_{10})]. A projected inventory of criteria pollutants and volatile organic compound emissions was requested. Also requested was the incorporation of mitigation as contained in the West Tavaputs and Greater Natural Buttes projects as stipulations or notices and to include a discussion as to how a future plan of development would consider the need for additional mitigation. Other issues raised included the application of the RFD and an associated well count estimate, surface disturbance estimates, climate change discussions, Stiles Report recommendations including ongoing litigation, management of lands with wilderness characteristics, incorporation of visual resource inventory and compliance with WO IM-2010-117.

Specific comments and responses are detailed in Appendix D.

5.4 List of Preparers

Name[6]	Office	Title	Responsible for the Following Section(s) of this Document
Kyle Beagley	PFO	NRS	Team Lead
David Waller	PFO	Wildlife Biologist	Threatened, Endangered, Candidate or Sensitive Animal Species
Dana Truman	PFO	Range Specialist	Threatened, Endangered or Candidate Plant Species
Kathryn Lloyd	PFO	Recreation Specialist	Non WSA Lands with Wilderness Characteristics
Blaine Miller	PFO	Archeologist	Cultural Resources
Jeffrey Brower	PFO	Hydrologists	Hydrologic Conditions
Leonard Herr	USO	Air Quality Specialist	Air Quality

[5] The PFO RMP and associated EIS provide the basis for land use allocations including oil and gas leasing decisions. Challenges to the planning process, including the RMP and associated EISs, will not be considered as part of oil and gas leasing decisions. The public was afforded opportunities to protest the Proposed RMP and Final EIS documents. Protests were resolved by the BLM Director in 2008. Copies of the Director's Protest Resolution Reports are available on-line at (scroll down to Utah): http://www.blm.gov/wo/st/en/prog/planning/protest_resolution/protestreports.html. Subsequent to protest resolution, the Record of Decision and Approved RMP was signed by the Assistant Secretary for Lands and Minerals, Department of the Interior, which constituted the final decision for the Department of the Interior, and ended all administrative courses of action on those planning processes.

[6] Refer also to the Interdisciplinary Team Checklist (Appendix C) and the list of preparers for the West Tavaputs Full Field Development EIS and Greater Natural Buttes EIS (as supplemented).

6 REFERENCES, ACRONYMS AND APPENDICES

6.1 References Cited

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6.2 List of Acronyms

APD	Application for Permit to Drill
ACEC	Area of Critical Environmental Concern
APE	Area of Potential Effect
BLM	Bureau of Land Management
BMP	Best Management Practices
CBNG	Coalbed Natural Gas
CFR	Code of Federal Regulations
CIA	Cumulative Impact Area
CSU	Conditional Surface Use
DR	Decision Record
EA	Environmental Assessment
EIS	Environmental Impact Statement
ENBB	Environmental Notification Bulletin Board
EOI	Expression of Interest
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act of 1976
FONSI	Finding of No Significant Impact
GIS	Geographic Information System
GNB EIS	Greater Natural Buttes Draft EIS, as Supplemented
IDPR	Interdisciplinary Parcel Review
IM	Instruction Memorandum
LUP	Land Use Plan
NAGPRA	Native American Graves Protection and Repatriation Act
NCLS	Notice of Competitive Lease Sale
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPS	National Park Service
NSO	No Surface Occupancy
PFO RMP	Price Field Office Resource Management Plan
PLPCO	Public Land Policy Coordination Office
RMP ROD	Resource Management Plan Record of Decision
RMP	Resource Management Plan
RFD	Reasonably Foreseeable Development
ROD	Record of Decision
SHPO	State Historic Preservation Office
SITLA	School and Institutional Trust Lands Administration
UDWR	Utah Division of Wildlife Resources
USDI	United States Department of the Interior
USO	Utah State Office
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
WO	Washington Office
WSA	Wilderness Study Area
WTP EIS	West Tavaputs Plateau Natural Gas Full Field Development Plan Environmental Impact Statement
WTP EIS ROD	West Tavaputs Plateau Natural Gas Full Field Development Plan Environmental Impact Statement Record of Decison

6.3 Appendices

A. Preliminary Oil and Gas Lease Sale List with Stipulations and Lease Notices
B. Maps
C. Interdisciplinary Team Checklist
D. Comment Response Table

APPENDIX A

PRELIMINARY OIL AND GAS LEASE SALE LIST WITH STIPULATIONS AND LEASE NOTICES

PRELIMINARY OIL AND GAS LEASE SALE LIST
WITH STIPULATIONS AND LEASE NOTICES

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.

UTU88619
(UT111–001)
T. 12 S., R. 9 E., Salt Lake
Sec. 6: W2SE;
Sec. 7: Lots 2-4, E2NW;
Sec. 17: NE, NENW, SWNW, NESW, SWSW, NESE;
Sec. 18: Lots 2, 3, N2NE, NENW, E2SW, SE.
1,095.84 Acres
Carbon County, Utah
Price Field Office

STIPULATIONS

UT-S-01:	Air Quality
UT-S-97:	NSO – Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101:	CSU – Fragile Soils/Slopes 20-40 Percent
UT-S-126:	NSO – Natural Springs
UT-S-127:	NSO – Intermittent and Perennial Streams
UT-S-156:	TL – High-Country Watershed Areas
UT-S-169:	CSU – Cultural Resource Inventories
UT-S-203:	TL – Greater Sage Grouse Nesting and Brooding
UT-S-212:	TL – Greater Sage Grouse Winter Habitat
UT-S-232:	TL – Mule Deer and Elk Crucial Winter Range
UT-S-248:	TL – Mule Deer Fawning and Elk Calving Areas
UT-S-257:	TL – Moose Winter Range
UT-S-260:	TL – Raptor Habitat
UT-S-269:	NSO – Mexican Spotted Owl Nests
UT-S-305:	CSU – Noxious Weed

NOTICES

UT-LN-03:	Crucial Mule Deer and Elk Winter Habitat
UT-LN-08:	Crucial Elk Calving and Deer Fawning Habitat
UT-LN-24:	Crucial Moose Habitat
UT-LN-45:	Migratory Bird
UT-LN-53:	Riparian Areas
T&E-06:	Mexican Spotted Owl

UTU88620
(UT1111–002)
T. 12 S., R. 9 E., Salt Lake
Sec. 10: SENW, SW;
Sec. 11: S2SW, SWSE;
Sec. 14: N2NE, SENE, S2NW, S2;
Sec. 15: All.
1,480.00 Acres
Carbon County, Utah
Price Field Office

STIPULATIONS

UT-S-01:	Air Quality
UT-S-97:	NSO – Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101:	CSU – Fragile Soils/Slopes 20-40 Percent
UT-S-126:	NSO – Natural Springs
UT-S-127:	NSO – Intermittent and Perennial Streams
UT-S-156:	TL – High-Country Watershed Areas
UT-S-169:	CSU – Cultural Resource Inventories
UT-S-203:	TL – Greater Sage Grouse Nesting and Brooding
UT-S-212:	TL – Greater Sage Grouse Winter Habitat
UT-S-248:	TL – Mule Deer Fawning and Elk Calving Areas
UT-S-260:	TL – Raptor Habitat
UT-S-269:	NSO – Mexican Spotted Owl Nests
UT-S-305:	CSU – Noxious Weed

NOTICES

UT-LN-08:	Crucial Elk Calving and Deer Fawning Habitat
UT-LN-45:	Migratory Bird
UT-LN-49:	Utah Sensitive Species
UT-LN-96:	Air Quality
T&E-06:	Mexican Spotted Owl

UTU88621
(UT1111 – 005)
T. 13 S., R. 13 E., Salt Lake
Sec. 4: Lot 2, SWSE;
Sec. 9: NWNE, SENW, E2SW.
238.97 Acres
Carbon County, Utah
Price Field Office

STIPULATIONS

UT-S-01:	Air Quality
UT-S-97:	NSO – Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101:	CSU – Fragile Soils/Slopes 20-40 Percent
UT-S-126:	NSO – Natural Springs
UT-S-127:	NSO – Intermittent and Perennial Streams
UT-S-156:	TL – High-Country Watershed Areas
UT-S-169:	CSU – Cultural Resource Inventories
UT-S-177:	CSU – Fossil Resources
UT-S-248:	TL – Mule Deer Fawning and Elk Calving Areas
UT-S-305:	CSU – Noxious Weed

NOTICES

UT-LN-08:	Crucial Elk Calving and Deer Fawning Habitat
UT-LN-96:	Air Quality

UTU88624*
(UT1111 – 017)
T. 12 S., R. 16 E., Salt Lake
Sec. 13: S2.
320.00 Acres
Carbon County, Utah
Price Field Office

STIPULATIONS

UT-S-01:	Air Quality
UT-S-97:	NSO – Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101:	CSU – Fragile Soils/Slopes 20-40 Percent
UT-S-126:	NSO – Natural Springs
UT-S-127:	NSO – Intermittent and Perennial Streams
UT-S-169:	CSU – Cultural Resource Inventories
UT-S-177:	CSU – Fossil Resources
UT-S-212:	TL – Greater Sage Grouse Winter Habitat
UT-S-232:	TL – Mule Deer and Elk Crucial Winter Range
UT-S-305:	CSU – Noxious Weed
UT-S-319:	NSO –Cultural ACEC

NOTICES

UT-LN-03:	Crucial Mule Deer and Elk Winter Habitat
UT-LN-49:	Utah Sensitive Species
UT-LN-51:	Special Status Plants: Not Federally Listed
UT-LN-96:	Air Quality
UT-LN-97:	West Tavaputs
T&E-05:	Listed Plant Species

*Parcel will be offered at the lease sale only if they are no longer subject to pending litigation.

UTU88625*
(UT1111 – 018)
T. 12 S., R. 16 E., Salt Lake
Sec. 14: S2S2;
Sec. 15: E2SW, W2SE, SESE.
360.00 Acres
Carbon County, Utah
Price Field Office

STIPULATIONS

UT-S-01:	Air Quality
UT-S-97:	NSO – Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101:	CSU – Fragile Soils/Slopes 20-40 Percent
UT-S-126:	NSO – Natural Springs
UT-S-127:	NSO – Intermittent and Perennial Streams
UT-S-169:	CSU – Cultural Resource Inventories
UT-S-177:	CSU – Fossil Resources
UT-S-212:	TL – Greater Sage Grouse Winter Habitat
UT-S-232:	TL – Mule Deer and Elk Crucial Winter Range
UT-S-269:	NSO – Mexican Spotted Owl Nests
UT-S-305:	CSU – Noxious Weed
UT-S-319:	NSO –Cultural ACEC

NOTICES

UT-LN-03:	Crucial Mule Deer and Elk Winter Habitat
UT-LN-49:	Utah Sensitive Species
UT-LN-51:	Special Status Plants: Not Federally Listed
UT-LN-96:	Air Quality
UT-LN-97:	West Tavaputs
T&E-05:	Listed Plant Species
T&E-06:	Mexican Spotted Owl

*Parcel will be offered at the lease sale only if they are no longer subject to pending litigation.

UTU88626*
(UT1111 – 019)
T. 12 S., R. 16 E., Salt Lake
Sec. 22: E2, E2W2;
Sec. 23: All;
Sec. 24: All excluding the Desolation Canyon WSA.
1,751.20 Acres
Carbon County, Utah
Price Field Office

STIPULATIONS

UT-S-01:	Air Quality
UT-S-97:	NSO – Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101:	CSU – Fragile Soils/Slopes 20-40 Percent
UT-S-126:	NSO – Natural Springs
UT-S-127:	NSO – Intermittent and Perennial Streams
UT-S-169:	CSU – Cultural Resource Inventories
UT-S-177:	CSU – Fossil Resources
UT-S-212:	TL – Greater Sage Grouse Winter Habitat
UT-S-232:	TL – Mule Deer and Elk Crucial Winter Range
UT-S-260:	TL – Raptor Habitat
UT-S-269:	NSO – Mexican Spotted Owl Nests
UT-S-305:	CSU – Noxious Weed

NOTICES

UT-LN-03:	Crucial Mule Deer and Elk Winter Habitat
UT-LN-40:	Golden Eagle Habitat
UT-LN-45:	Migratory Bird
UT-LN-49:	Utah Sensitive Species
UT-LN-51:	Special Status Plants: Not Federally Listed
UT-LN-96:	Air Quality
UT-LN-97:	West Tavaputs
T&E-05:	Listed Plant Species
T&E-06:	Mexican Spotted Owl

*Parcel will be offered at the lease sale only if they are no longer subject to pending litigation.

UTU88627*
(UT1111 – 020)
T. 12 S., R. 16 E., Salt Lake
Sec. 25: Lots 1-4, S2N2 excluding the Desolation Canyon WSA;
Sec. 26: Lots 1-5, S2NE, SENW;
Sec. 27: NE, E2NW.
811.12 Acres
Carbon County, Utah
Price Field Office

STIPULATIONS

UT-S-01:	Air Quality
UT-S-97:	NSO – Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101:	CSU – Fragile Soils/Slopes 20-40 Percent
UT-S-126:	NSO – Natural Springs
UT-S-127:	NSO – Intermittent and Perennial Streams
UT-S-169:	CSU – Cultural Resource Inventories
UT-S-177:	CSU – Fossil Resources
UT-S-212:	TL – Greater Sage Grouse Winter Habitat
UT-S-232:	TL – Mule Deer and Elk Crucial Winter Range
UT-S-269:	NSO – Mexican Spotted Owl Nests
UT-S-270:	CSU – Designated Mexican Spotted Owl Critical Habitat
UT-S-305:	CSU – Noxious Weed

NOTICES

UT-LN-03:	Crucial Mule Deer and Elk Winter Habitat
UT-LN-40:	Golden Eagle Habitat
UT-LN-45:	Migratory Bird
UT-LN-96:	Air Quality
UT-LN-97:	West Tavaputs
T&E-03:	Endangered Fish of the Upper Colorado River Drainage Basin
T&E-06:	Mexican Spotted Owl

*Parcel will be offered at the lease sale only if they are no longer subject to pending litigation.

UTU88628*
(UT1111 – 021)
T. 13 S., R. 16 E., Salt Lake
Sec. 3: Lots 1, 2, 3, 4, 5, SWSE; S2SW;
Sec. 4: Lots 1, 2, 3, SESW, S2SE;
Sec. 5: Lot 2, SWSE;
Sec. 8: NWNE;
Sec. 9: N2NE, NENW, SENW;
Sec. 10: N2NW;
Sec. 11: Lot 1.
962.59 Acres
Carbon County, Utah
Price Field Office

STIPULATIONS

UT-S-01:	Air Quality
UT-S-97:	NSO – Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101:	CSU – Fragile Soils/Slopes 20-40 Percent
UT-S-126:	NSO – Natural Springs
UT-S-127:	NSO – Intermittent and Perennial Streams
UT-S-156:	TL – High-Country Watershed Areas (Portions of parcel above 7000')
UT-S-169:	CSU – Cultural Resource Inventories
UT-S-177:	CSU – Fossil Resources
UT-S-212:	TL – Greater Sage Grouse Winter Habitat
UT-S-232:	TL – Mule Deer and Elk Crucial Winter Range
UT-S-260:	TL – Raptor Habitat
UT-S-269:	NSO – Mexican Spotted Owl Nests
UT-S-270:	CSU – Designated Mexican Spotted Owl Critical Habitat
UT-S-305:	CSU – Noxious Weed

NOTICES

UT-LN-03:	Crucial Mule Deer and Elk Winter Habitat
UT-LN-45:	Migratory Bird
UT-LN-96:	Air Quality
UT-LN-97:	West Tavaputs
T&E-06:	Mexican Spotted Owl

*Parcel will be offered at the lease sale only if they are no longer subject to pending litigation.

UTU88629*
(UT1111 – 022)
T. 12 S., R. 17 E., Salt Lake
Sec. 19: All excluding the Desolation Canyon WSA;
Sec. 20: S2SW;
Sec. 21: SWNE, S2NW, N2SW, S2S2 excluding the Desolation Canyon WSA;
Sec. 28: W2, W2SE excluding the Desolation Canyon WSA;
Sec. 29: All excluding the Desolation Canyon WSA;
Sec. 30: N2, SE excluding the Desolation Canyon WSA;
Sec. 32: W2NE, E2NW excluding the Desolation Canyon WSA;
Sec. 33: NWNE, E2NW excluding the Desolation Canyon WSA.
1,551.20 Acres
Carbon County, Utah
Price Field Office

STIPULATIONS

UT-S-01:	Air Quality
UT-S-97:	NSO – Fragile Soils/Slopes for Slopes Greater Than 40%
UT-S-101:	CSU – Fragile Soils/Slopes 20-40 Percent
UT-S-126:	NSO – Natural Springs
UT-S-127:	NSO – Intermittent and Perennial Streams
UT-S-169:	CSU – Cultural Resource Inventories
UT-S-177:	CSU – Fossil Resources
UT-S-212:	TL – Greater Sage Grouse Winter Habitat
UT-S-232:	TL – Mule Deer and Elk Crucial Winter Range
UT-S-253:	TL – Desert and Rocky Mountain Bighorn Sheep
UT-S-269:	NSO – Mexican Spotted Owl Nests
UT-S-270:	CSU – Designated Mexican Spotted Owl Critical Habitat
UT-S-305:	CSU – Noxious Weed

NOTICES

UT-LN-03:	Crucial Mule Deer and Elk Winter Habitat
UT-LN-49:	Utah Sensitive Species
UT-LN-51:	Special Status Plants: Not Federally Listed
UT-LN-96:	Air Quality
UT-LN-97:	West Tavaputs
T&E-03:	Endangered Fish of the Upper Colorado River Drainage Basin
T&E-05:	Listed Plant Species
T&E-06:	Mexican Spotted Owl

*Parcel will be offered at the lease sale only if they are no longer subject to pending litigation.

LEASE STIPULATIONS SUMMARY

UT-S-01	**AIR QUALITY** 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 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-97	**NSO – FRAGILE SOILS/SLOPES GREATER THAN 40 PERCENT** NSO on slopes greater than 40 percent. **Exception:** If after an environment analysis the authorized officer determines that it would cause undue or unnecessary degradation to pursue other placement alternatives, surface occupancy in the area may be authorized. In addition, a plan from the operator and BLM's approval of the plan would be required before construction and maintenance could begin. The plan would have to include: • An erosion control strategy • GIS modeling • Proper survey and design by a certified engineer. **Modification**: None **Waiver**: None
UT-S-101	**CSU – FRAGILE SOILS/SLOPES 20-40 PERCENT** In surface disturbing proposals regarding construction on slopes of 20 percent to 40 percent, include an approved erosion control strategy and topsoil segregation/restoration plan. Such construction must be properly surveyed and designed by a certified engineer and approved by the BLM prior to project implementation, construction, or maintenance. **Exception:** If after an environment analysis the authorized officer determines that it would cause undue or unnecessary degradation to pursue other placement alternatives, surface occupancy in the area may be authorized. In addition, a plan from the operator and BLM's approval of the plan would be required before construction and maintenance could begin. The plan must include: • An erosion control strategy • GIS modeling • Proper survey and design by a certified engineer. **Modification:** Modifications also may be granted if a more detailed analysis is conducted and shows that impacts can be mitigated, e.g., Order I soil survey conducted by a qualified soil scientist, finds that surface disturbance activities could occur on slopes between 20 and 40 percent while adequately protecting areas from accelerated erosion. **Waiver**: None

UT-S-126	**NSO – NATURAL SPRINGS** No surface disturbance or occupancy will be maintained around natural springs to protect the water quality of the spring. The distance would be based on geophysical, riparian, and other factors necessary to protect the water quality of the springs. If these factors cannot be determined, a 660-foot buffer zone would be maintained. **Exception:** An exception could be authorized if (a) there are no practical alternatives, (b) impacts could be fully mitigated, or (c) the action is designed to enhance the riparian resources. **Modification**: None **Waiver**: None
UT-S-127	**NSO – INTERMITTENT AND PERENNIAL STREAMS** No new surface disturbance (excluding fence lines) will be allowed in areas within the 100-year floodplain or 100 meters (330 feet) on either side from the centerline, whichever is greater, along all perennial and intermittent streams, streams with perennial reaches, and riparian areas. **Exception:** The authorized officer could authorize an exception if it could be shown that the project as mitigated eliminated the need for the restriction. An exception could be authorized if (a) there are no practical alternatives, (b) impacts could be fully mitigated, or (c) the action is designed to enhance the riparian resources. **Modification**: None **Waiver:** None
UT-S-156	**TL – HIGH-COUNTRY WATERSHED AREAS** High-country watershed areas (above 7,000 feet) will be closed seasonally from **December 1 to April 15**. **Exception:** Upon review and monitoring, the authorized officer may grant exceptions because of climatic conditions if activities would not cause undue damage to soils or roads. **Modification:** Season may be adjusted depending on climatic and vegetation conditions. **Waiver:** Activities may be allowed as long as all surface disturbing activities are conducted before seasonal closure.

UT-S-169	**CSU – CULTURAL RESOURCE INVENTORIES** Cultural resources inventories (including point, area, and linear features) will be required for all federal undertakings that could affect cultural resources or historic properties in areas of both direct and indirect impacts. Waiver of Inventory: Although complete Class III inventories will be performed for most land use actions, an authorized officer could waive inventory for any part of an Area of Potential Effect when one or more of the following conditions exist: • Previous natural ground disturbance has modified the surface so extensively that the likelihood of finding cultural properties is negligible. (Note: This is not the same as being able to document that any existing sites may have been affected by surface disturbance; ground disturbance must have been so extensive as to reasonably preclude the location of any such sites.) • Human activity within the last 50 years has created a new land surface to such an extent as to eradicate locatable traces of cultural properties. • Existing Class II or equivalent inventory data are sufficient to indicate that the specific environmental situation did not support human occupation or use to a degree that would make further inventory information useful or meaningful. • Previous inventories must have been conducted according to current professionally acceptable standards. • Records are available and accurate and document the location, methods, and results of the inventory. • Class II "equivalent inventory data" includes an adequate amount of acreage distributed across the same specific environmental situation that is located within the study area. • Inventory at the Class III level has previously been performed, and records documenting the location, methods, and results of the inventory are available. Such inventories must have been conducted according to current professionally acceptable standards. • Natural environmental characteristics (such as recent landslides or rock falls) are unfavorable to the presence of cultural properties. • The nature of the proposed action is such that no impact can be expected on significant cultural resources. • Conditions exist that could endanger the health or safety of personnel, such as the presence of hazardous materials, explosive ordnance, or unstable structures.
UT-S-177	**CSU – FOSSIL RESOURCES** A BLM permitted paleontologist will be required to be onsite during surface disturbance in any Potential Fossil Yield Classification (PFYC) 4 or 5 areas. **Exceptions:** None **Modification:** None **Waiver:** None

UT-S-203	**TL – GREATER SAGE GROUSE NESTING AND BROODING** No surface disturbing or otherwise disruptive activities within 2 miles of a known greater sage-grouse lek from **March 15 to July 15**. **Exception:** The authorized officer may grant an exception if an environmental analysis demonstrates that the action would not impair the function or utility of the habitat for nesting or early brood-rearing activities. **Modification:** Season may be adjusted depending on climatic and habitat conditions. Disturbance could occur if the activity were proposed to occur within the buffer, but would occur in non-sagebrush habitat, i.e., the activity could be allowed if it was not in sage-grouse habitat and did not in some other way disturb nesting or brood-rearing activity. **Waiver:** This stipulation may be waived if, in cooperation with UDWR, it is determined that the site has been permanently abandoned or unoccupied for a minimum of 5 years.
UT-S-212	**TL – GREATER SAGE GROUSE WINTER HABITAT** No surface disturbing or otherwise disruptive activities within Greater sage-grouse winter habitat areas seasonally from **December 1 to March 14**. **Exception:** Upon review and monitoring, the Authorized Officer may grant exceptions because of climatic and/or habitat conditions if certain criteria are met and if activities would not cause undue stress to wintering greater sage-grouse. **Modification:** Season may be adjusted depending on climatic and habitat conditions. **Waiver:** This stipulation may be waived if, in cooperation with the State wildlife agency, it is determined that the site has been permanently abandoned or unoccupied for a minimum of 5 years.
UT-S-232	**TL – MULE DEER AND ELK CRUCIAL WINTER RANGE** No surface disturbing or otherwise disruptive activities within mule deer and elk crucial winter range from **December 1 to April 15**. **Exception:** Upon review and monitoring, the authorized officer may grant exceptions because of climatic and/or range conditions if certain criteria are met and if activities would not cause undue stress to deer and/or elk populations or habitats. **Modification:** Season may be adjusted depending on climatic and range conditions. **Waiver:** A waiver may be granted if the winter range habitat is unsuitable for or unoccupied during winter months by deer/elk and there is no reasonable likelihood of future winter range use.
UT-S-248	**TL – MULE DEER FAWNING AND ELK CALVING AREAS** No surface disturbing or otherwise disruptive activities within mule deer fawning and elk calving areas from **May 15 to July 5**. **Exception:** Upon review and monitoring, the authorized officer may grant exceptions because of climatic and/or range conditions if certain criteria are met and if activities would not cause undue stress to deer and elk populations or habitats. **Modification:** Season may be adjusted depending on climatic and range conditions. **Waiver:** A waiver may be granted if the fawning and calving habitat is unsuitable or unoccupied by deer/elk and there is no reasonable likelihood of future use.

UT-S-253	**TL – DESERT AND ROCKY MOUNTAIN BIGHORN SHEEP** No surface disturbing or otherwise disruptive activities within Desert bighorn sheep and Rocky Mountain bighorn sheep spring/lambing within crucial yearlong range from **April 15 to June 15**. **Exception:** Upon review and monitoring, the authorized officer may grant exceptions because of climatic and/or range conditions if certain criteria are met and if activities would not cause undue stress to Desert bighorn sheep and Rocky Mountain bighorn sheep populations or habitats. **Modification:** Season may be adjusted depending on climatic and range conditions. **Waiver:** A waiver may be granted if the habitat is determined to be unsuitable for lambing and there is no reasonable likelihood of future use as bighorn lambing grounds.
UT-S-257	**TL – MOOSE WINTER RANGE** No surface disturbing or otherwise disruptive activities within moose winter range from **December 1 to April 15**. **Exception:** Upon review and monitoring, the authorized officer may grant exceptions because of climatic and/or range conditions if certain criteria are met and if activities would not cause undue stress to moose populations or habitats. **Modification:** Season may be adjusted depending on climatic and range conditions. **Waiver:** A waiver may be granted if the winter range habitat is unsuitable or unoccupied during winter months by moose and there is no reasonable likelihood of future winter range use.
UT-S-260	**TL – RAPTOR HABITAT** Raptor nesting complexes and known raptor nest sites will be closed seasonally from **February 1 to July 15** within ½ mile of occupied nests. **Exception:** The authorized officer may grant an exception if the raptor nest in question is deemed to be inactive by May 31 and if the proposed activity would not result in a permanent structure or facility that would cause the subject nest to become unsuitable for nesting in future years. **Modification:** Season may be adjusted depending on climatic and range conditions. Distance may be adjusted if natural features provide adequate visual screening. **Waiver:** This stipulation may be waived if, in cooperation with the UDWR, it is determined that the site has been permanently abandoned or unoccupied for a minimum of 3 years.
UT-S-269	**NSO – MEXICAN SPOTTED OWL NESTS** No surface occupancy within 1/2 mile of known Mexican Spotted Owl (MSO) nests. **Exception:** The authorized officers may grant an exception if an environmental analysis demonstrates that the action would not impair the function or utility of the site for nesting or other owl-sustaining activities. **Modification:** The authorized officers may modify the NSO area in extent if an environmental analysis finds that a portion of the area is nonessential to site utility or function or if natural features provide adequate visual or auditory screening. **Waiver:** A waiver may be granted if the MSO is de-listed and the area is determined as not necessary for the survival and recovery of the MSO.

UT-S-270	**CSU – DESIGNATED MEXICAN SPOTTED OWL CRITICAL HABITAT** Any surface use or occupancy within designated critical habitat will be strictly controlled through close scrutiny of any surface use plan filed to protect habitat values and the use of the area by Mexican spotted owls. Modifications to the Surface Use Plan of Operations may be required for the protection of these resources. This limitation may apply to operation and maintenance of producing wells. **Exception:** The authorized officer may grant an exception if an environmental analysis demonstrates that the action will not impair the function or utility of the site for nesting or other owl-sustaining activities. **Modification:** The authorized officer may modify the CSU area in extent if an environmental analysis finds that a portion of the area is nonessential to site utility or function or if natural features provide adequate visual or auditory screening. **Waiver:** A waiver may be granted if the species is de-listed and the critical habitat is determined as not necessary for the survival and recovery of the species.
UT-S-305	**CSU – NOXIOUS WEED** Continue implementation of noxious weed and invasive species control actions in accordance with national guidance and local weed management plans, in cooperation with State, federal, affected counties, adjoining private land owners, and other partners or interests directly affected. Implement Standard Operating Procedures and Mitigation Measures for herbicide use as well as prevention measures for noxious and invasive plants identified in the Record of Decision Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States PEIS and associated documents. **Exception**: None **Modification**: None **Waiver**: None
UT-S-319	**NSO – CULTURAL ACEC** NSO for cultural values within areas of critical environmental concern (ACEC) to retain the cultural character and context of the area. **Exception:** The AO may grant an oil and gas exception if it is determined that no other economical and technical feasible access is available to reach and drain the fluid mineral resources of the area. A block cultural survey must be completed and a treatment plan developed and submitted to BLM and the State Historic Preservation Office (SHPO) for their approval. The plan must contain measures to mitigate surface disturbance and reduce visual intrusion. **Modification:** None **Waiver**: None

LEASE NOTICES SUMMARY

UT-LN-03	**CRUCIAL MULE DEER AND ELK WINTER HABITAT** The lessee/operator is given notice that the area has been identified as containing crucial mule deer and elk winter habitat. Exploration, drilling and other development activities may be restricted from December 1 through April 15. Modifications including seasonal restrictions may be required to the Surface Use Plan of Operations in order to protect the winter habitat. This limitation does not apply to operation and maintenance of producing wells.
UT-LN-08	**CRUCIAL ELK CALVING AND DEER FAWNING HABITAT** The lessee/operator is given notice that lands in this lease have been identified as containing crucial elk calving or deer fawning habitat. Exploration, drilling and other development activities may be restricted from May 15 through July 5 to protect calving / fawning. Modifications may be required in the Surface Use Plan of Operations including seasonal timing restrictions to protect the species and its habitat.
UT-LN-24	**CRUCIAL MOOSE HABITAT** The lessee/operator is given notice that the area has been identified as containing crucial moose habitat. Exploration, drilling and other development activities may be restricted from December 1 through April 15 to protect crucial moose winter range. Modifications, including seasonal/timing restrictions, may be required in the Surface Use Plan of Operations to protect moose habitat.
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 TLs. 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-51	**SPECIAL STATUS PLANTS: NOT FEDERALLY LISTED** The lessee/operator is given notice that lands in this lease have been identified as containing special status plants, not federally listed, and their habitats. Modifications to the Surface Use Plan of Operations may be required in order to protect the special status plants and/or habitat from surface disturbing activities in accordance with Section 6 of the lease terms, Endangered Species Act, and 43 CFR 3101.1-2.
UT-LN-53	**RIPARIAN AREAS** The lessee/operator is given notice that this lease has been identified as containing riparian areas. No surface use or otherwise disruptive activity allowed within 100 meters of riparian areas unless it can be shown that (1) there is no practicable alternative; (2) that all long-term impacts are fully mitigated; or (3) that the construction is an enhancement to the riparian areas. Modifications to the Surface Use Plan of Operations may be required in accordance with section 6 of the lease terms and 43CFR3101.1-2.

UT-LN-96	**AIR QUALITY**
	The lessee is given notice that the Bureau of Land Management (BLM) in coordination with the U.S. Environmental Protection Agency and the Utah Department of Air Quality, among others, have developed the following air quality mitigation measures that may be applied to any development proposed on this lease. Integration of and adherence to these measures may help minimize adverse local or regional air quality impacts from oil and gas development (including but not limited to construction, drilling, and production).
	• Electric compression, where feasible.
	• Emission controls having a control efficiency of 95 percent on existing condensate tanks with a potential to emit of greater 20 tpy, and on new condensate tanks with a potential to emit of 5 tpy VOCs.
	• Green completions for all well completion activities.
	• Tier II drill rig engines by 2012, with phase-in of Tier IV engines or equivalent emission reduction technology as soon as possible thereafter, but no later than 2018
	• Lean burn natural gas-fired stationary compressor engines or equipment with equivalent emission rates.
	• Catalyst on all natural gas-fired compressor engines to reduce the emissions of CO and VOCs.
	• Dry seals on new centrifugal compressors.
	• An annual inspection and maintenance program to reduce VOC emissions, including:
	  ▪ Performing inspections of thief hatch seals and Enardo pressure relief valves to ensure proper operations.
	  ▪ Reviewing gathering system pressures to evaluate any areas where gathering pressure may be reduced, resulting in lower flash losses from the condensate storage tanks.
	  ▪ Vent emissions from stock tanks and natural gas TEG dehydrators would be controlled by routing the emissions to a flare or similar control device which would reduce emissions by 95% or greater.
	  ▪ Low bleed pneumatics would be installed on separator dump valves and other controllers. The use of low bleed pneumatics would result in a lower emission of VOCs.
	  ▪ During completion, flaring would be limited as much as possible. Production equipment and gathering lines would be installed as soon as

	possible. ▪ Well site telemetry would be utilized as feasible for production operations. • 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 NO_x 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 NO_x per horsepower-hour. Additional site-specific measures may also be employed to avoid or minimize effects to local or regional air quality. These additional measures will be developed and implemented in coordination with the U.S. Environmental Protection Agency, the Utah Department of Air Quality, and other agencies with expertise or jurisdiction as appropriate.
UT-LN-97	**WEST TAVAPUTS** The lessee is given notice that the parcel falls within the area recently analyzed West Tavaputs Plateau Natural Gas Full-Field Development Environmental Impact Statement (WTP EIS). The Record of Decision (ROD) for the WTP EIS was signed in July, 2010 and includes provisions regarding development activities within the WTP EIS study area. Those provisions include but are not limited to, protection of cultural resources, as outlined in the WTP Programmatic Agreement; wildlife mitigation, as outline in the WTP wildlife mitigation plan; water quality monitoring, as outlined in the Water Quality Monitoring Plan; and air quality measures, which would minimize air quality impacts. Additional provisions can be found in Attachment 2 of the WTP EIS ROD.
T&E-03	**ENDANGERED FISH OF THE UPPER COLORADO RIVER DRAINAGE BASIN** The Lessee/Operator is given notice that the lands in this parcel contain Critical Habitat for the Colorado River fish (bonytail, humpback chub, Colorado pike minnow, and razorback sucker) listed as endangered under the Endangered Species Act, or these parcels have watersheds that are tributary to designated habitat. Critical habitat was designated for the four endangered Colorado River fishes on March 21, 1994 (59 FR 13374-13400). Designated critical habitat for all the endangered fishes includes those portions of the 100-year floodplain that contain primary constituent elements necessary for survival of the species. Avoidance or use restrictions may be placed on portions of the lease. The following avoidance and minimization measures have been designed to ensure activities carried out on the lease are in compliance with the Endangered Species Act. Integration of and adherence to these measures will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of Endangered Species Act, Section 7 consultation at the permit stage. Current avoidance and minimization measures include the following: Surveys will be required prior to operations unless species occupancy and distribution information is complete and available. All surveys must be conducted by qualified individual(s). Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated. Water production will be managed to ensure maintenance or enhancement of riparian habitat. Avoid loss or disturbance of riparian habitats. Where technically and economically feasible, use directional drilling or multiple wells from

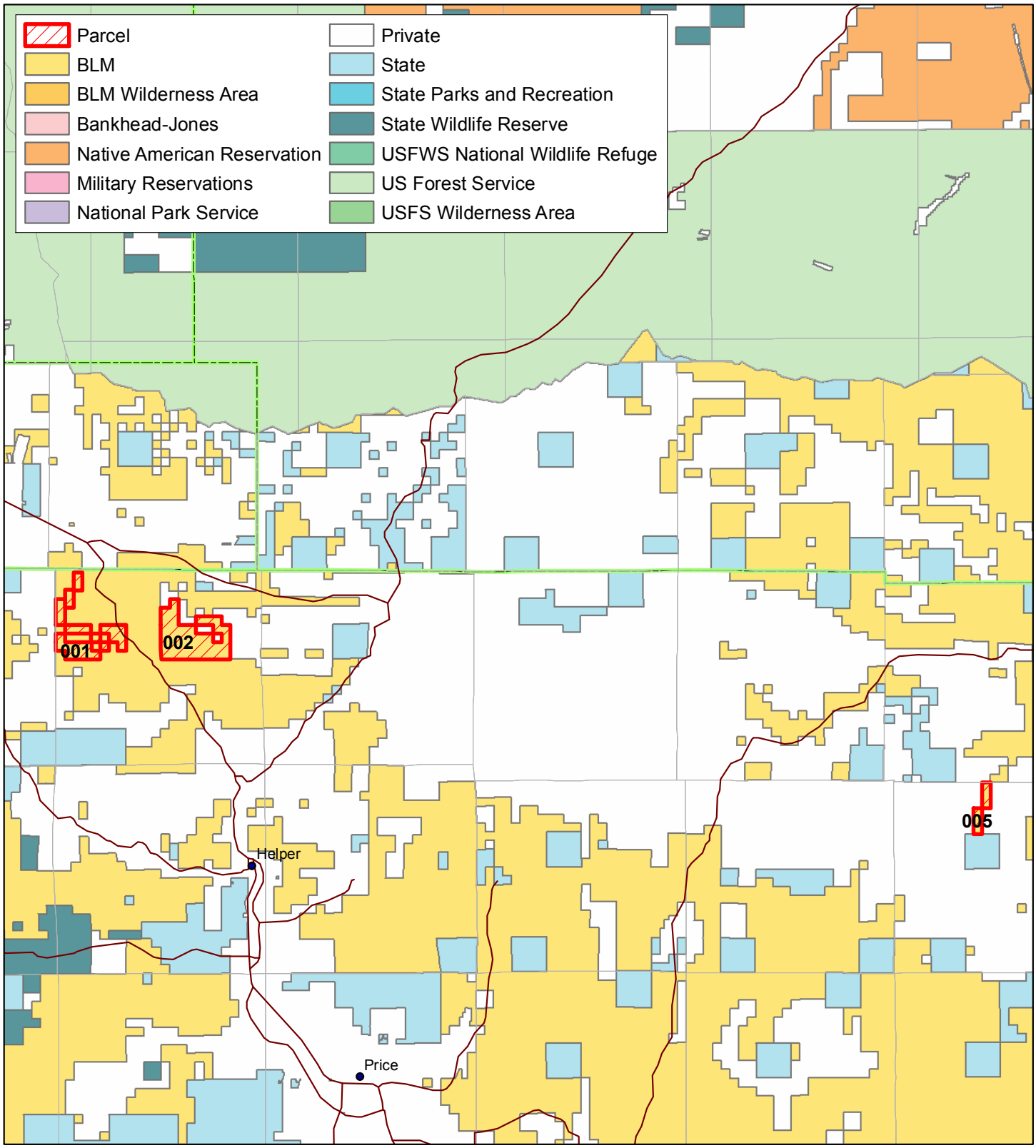
	the same pad to reduce surface disturbance and eliminate drilling in suitable riparian habitat. Ensure that such directional drilling does not intercept or degrade alluvial aquifers. Conduct watershed analysis for leases in designated critical habitat and overlapping major tributaries in order to determine toxicity risk from permanent facilities. Implement the Utah Oil and Gas Pipeline Crossing Guidance (from BLM National Science and Technology Center). Drilling will not occur within 100 year floodplains of rivers or tributaries to rivers that contain listed fish species or critical habitat. In areas adjacent to 100-year flood plains, particularly in systems prone to flash floods, analyze the risk for flash floods to impact facilities, and use closed loop drilling, and pipeline burial or suspension according to the Utah Oil and Gas Pipeline Crossing Guidance, to minimize the potential for equipment damage and resulting leaks or spills. Water depletions from *any* portion of the Upper Colorado River drainage basin above Lake Powell are considered to adversely affect or adversely modify the critical habitat of the four resident endangered fish species, and must be evaluated with regard to the criteria described in the Upper Colorado River Endangered Fish Recovery Program. Formal consultation with USFWS is required for all depletions. All depletion amounts must be reported to BLM. Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the U.S. Fish and Wildlife Service between the lease sale stage and lease development stage to ensure continued compliance with the ESA.
T&E-05	**LISTED PLANT SPECIES** The Lessee/Operator is given notice that the lands in this parcel contain suitable habitat for federally listed plant species under the Endangered Species Act. The following avoidance and minimization measures have been developed to facilitate review and analysis of any submitted permits under the authority of this lease. Site inventories: Must be conducted to determine habitat suitability, Are required in known or potential habitat for all areas proposed for surface disturbance prior to initiation of project activities, at a time when the plant can be detected, and during appropriate flowering periods, Documentation should include, but not be limited to individual plant locations and suitable habitat distributions, and All surveys must be conducted by qualified individuals. Lease activities will require monitoring throughout the duration of the project. To endure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated. Project activities must be designed to avoid direct disturbance to populations and to individual plants: Designs will avoid concentrating water flows or sediments into plant occupied habitat. Construction will occur down slope of plants and populations where feasible; if well pads and roads must be sited upslope, buffers of 100 feet minimum between surface disturbances and plants and populations will be incorporated. Where populations occur within 200 ft. of well pads, establish a buffer or fence the individuals or groups of individuals during and post-construction. Areas for avoidance will be visually identifiable in the field, e.g., flagging, temporary fencing, rebar, etc. For surface pipelines, use a 10 foot buffer from any plant locations:

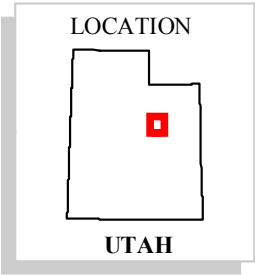
	If on a slope, use stabilizing construction techniques to ensure the pipelines don't move towards the population. For riparian/wetland-associated species, e.g. Ute ladies-tresses, avoid loss or disturbance of riparian habitats: Ensure that water extraction or disposal practices do not result in change of hydrologic regime. Limit disturbances to and within suitable habitat by staying on designated routes. Limit new access routes created by the project. Place signing to limit ATV travel in sensitive areas. Implement dust abatement practices near occupied plant habitat. All disturbed areas will be re-vegetated with native species comprised of species indigenous to the area. Post construction monitoring for invasive species will be required. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in plant habitat. Ensure that such directional drilling does not intercept or degrade alluvial aquifers. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated. Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the U.S. Fish and Wildlife Service between the lease sale stage and lease development stage to ensure continued compliance with the ESA.
T&E-06	**MEXICAN SPOTTED OWL** The Lessee/Operator is given notice that the lands in this lease contain suitable habitat for Mexican spotted owl, a federally listed species. The Lessee/Operator is given notice that the lands in this lease contain Designated Critical Habitat for the Mexican spotted owl, a federally listed species. Critical habitat was designated for the Mexican spotted owl on August 31, 2004 (69 FR 53181-53298). Avoidance or use restrictions may be placed on portions of the lease. Application of appropriate measures will depend whether the action is temporary or permanent, and whether it occurs within or outside the owl nesting season. A <u>temporary</u> action is completed prior to the following breeding season leaving no permanent structures and resulting in no permanent habitat loss. A <u>permanent</u> action continues for more than one breeding season and/or causes a loss of owl habitat or displaces owls through disturbances, i.e. creation of a permanent structure. The following avoidance and minimization measures have been designed to ensure activities carried out on the lease are in compliance with the Endangered Species Act. Integration of, and adherence to these measures, will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of Endangered Species Act, Section 7 consultation at the permit stage. Current avoidance and minimization measures include the following: Surveys will be required prior to operations unless species occupancy and distribution information is complete and available. All Surveys must be conducted by qualified individual(s). Assess habitat suitability for both nesting and foraging using accepted habitat models in conjunction with field reviews. Apply the conservation measures below if project activities occur within 0.5 mile of suitable owl habitat. Determine potential effects of actions to owls and their habitat. a. Document type of activity, acreage and location of direct habitat impacts, type and

	extent of indirect impacts relative to location of suitable owl habitat. b. Document if action is temporary or permanent. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated. Water production will be managed to ensure maintenance or enhancement of riparian habitat. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in canyon habitat suitable for Mexican spotted owl nesting. For all temporary actions that may impact owls or suitable habitat: a. If the action occurs entirely outside of the owl breeding season (March 1 – August 31), and leaves no permanent structure or permanent habitat disturbance, action can proceed without an occupancy survey. b. If action will occur during a breeding season, survey for owls prior to commencing activity. If owls are found, activity must be delayed until outside of the breeding season. c. Rehabilitate access routes created by the project through such means as raking out scars, re-vegetation, gating access points, etc. For all permanent actions that may impact owls or suitable habitat: Survey two consecutive years for owls according to accepted protocol prior to commencing activities. If owls are found, no actions will occur within 0.5 mile of identified nest site. If nest site is unknown, no activity will occur within the designated Protected Activity Center (PAC). Avoid drilling and permanent structures within 0.5 mi of suitable habitat unless surveyed and not occupied. Reduce noise emissions (e.g., use hospital-grade mufflers) to 45 dBA at 0.5 mile from suitable habitat, including canyon rims. Placement of permanent noise-generating facilities should be determined by a noise analysis to ensure noise does not encroach upon a 0.5 mile buffer for suitable habitat, including canyon rims. Limit disturbances to and within suitable habitat by staying on approved routes. Limit new access routes created by the project. Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the U.S. Fish and Wildlife Service between the lease sale stage and lease development stage to ensure continued compliance with the ESA.

APPENDIX B
MAPS

Map 1





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0 2.5 5 10 Miles

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Workspace/ut/so/pschulle/11-2011 Sale

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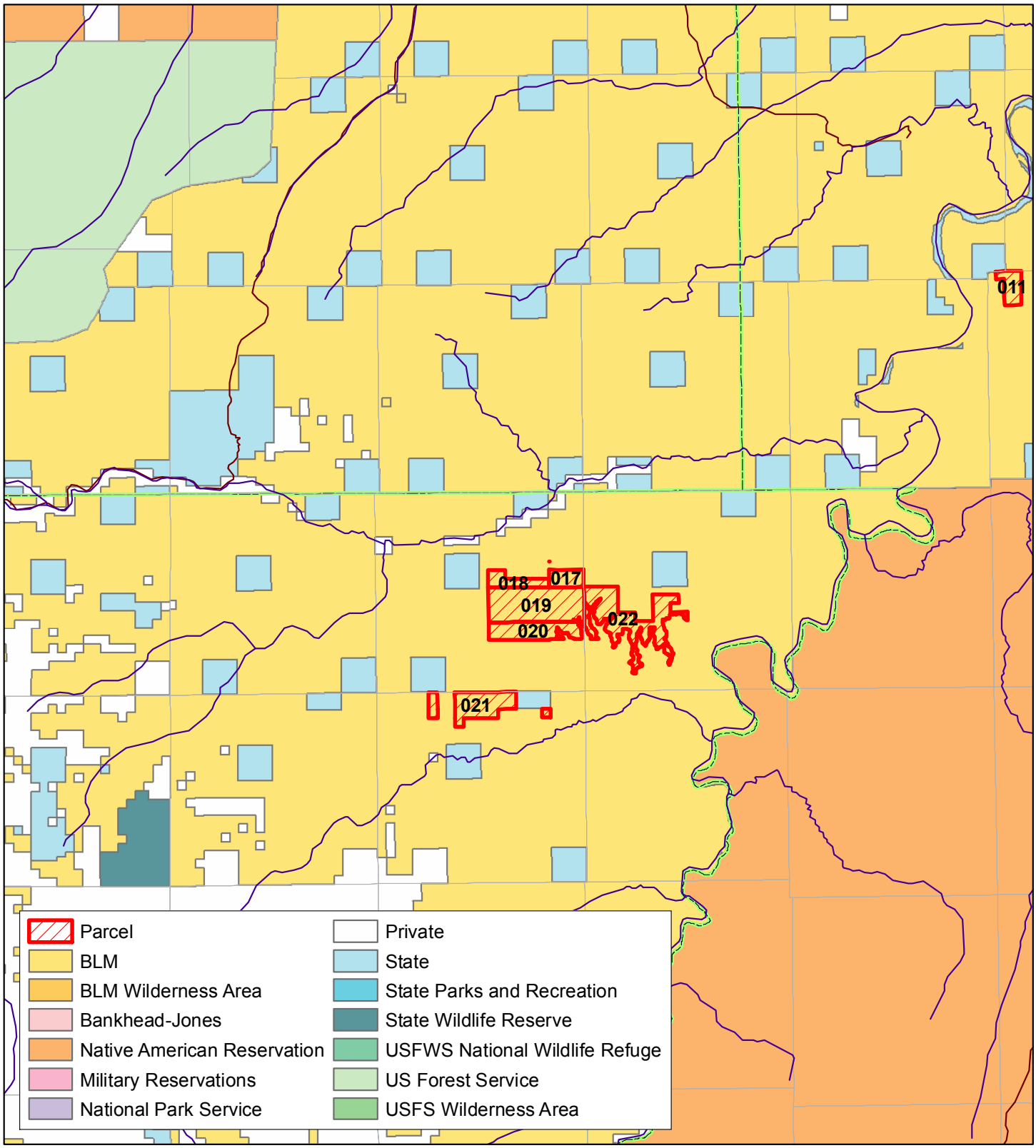
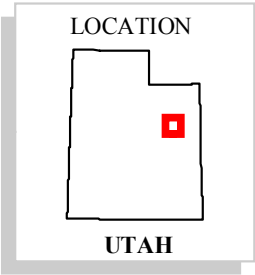
Map 2





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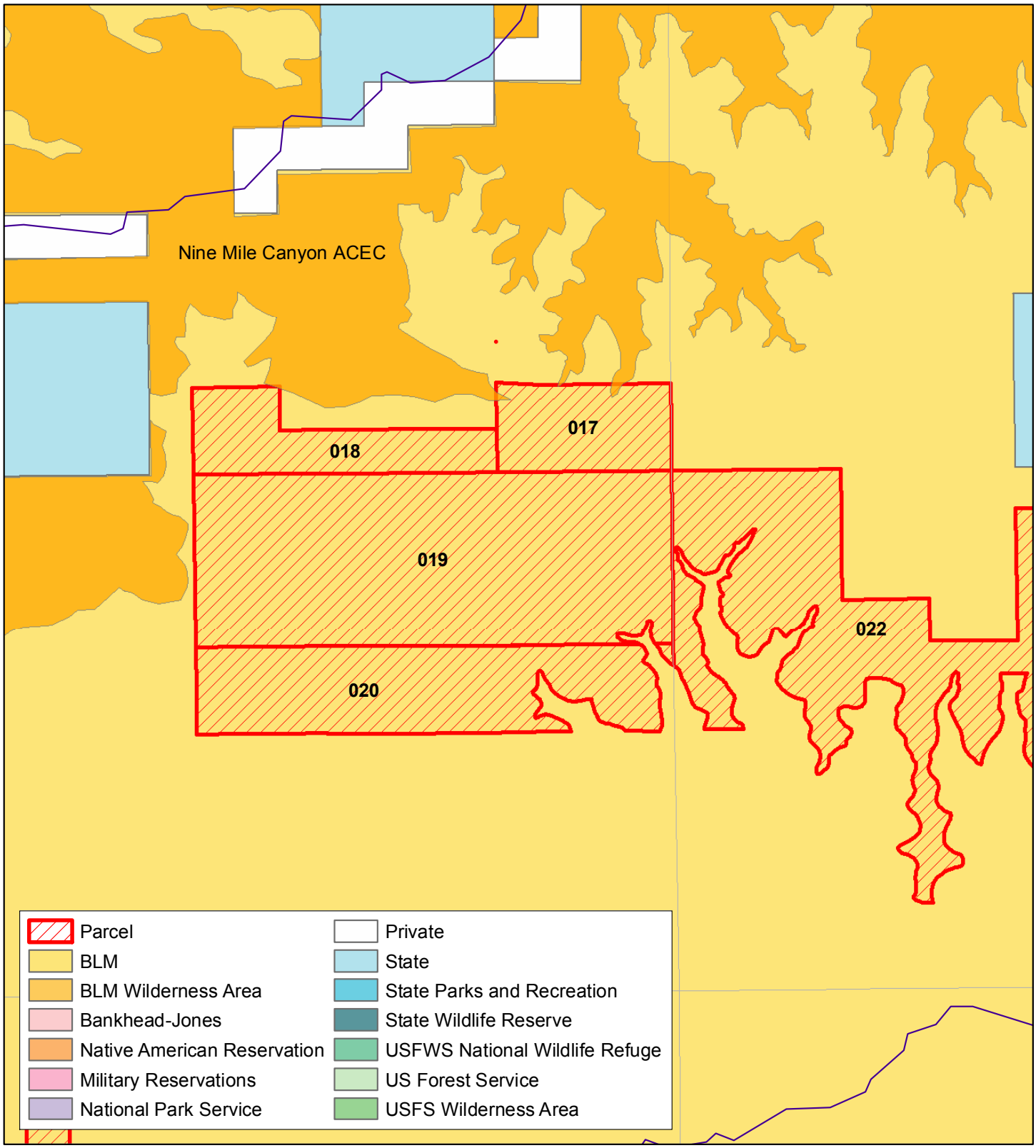
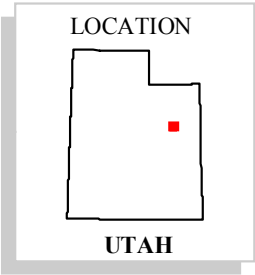
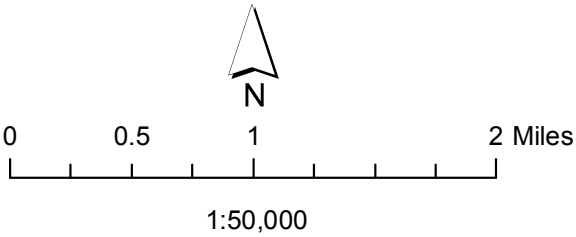
Map 3

Nine Mile Canyon ACEC - NSO







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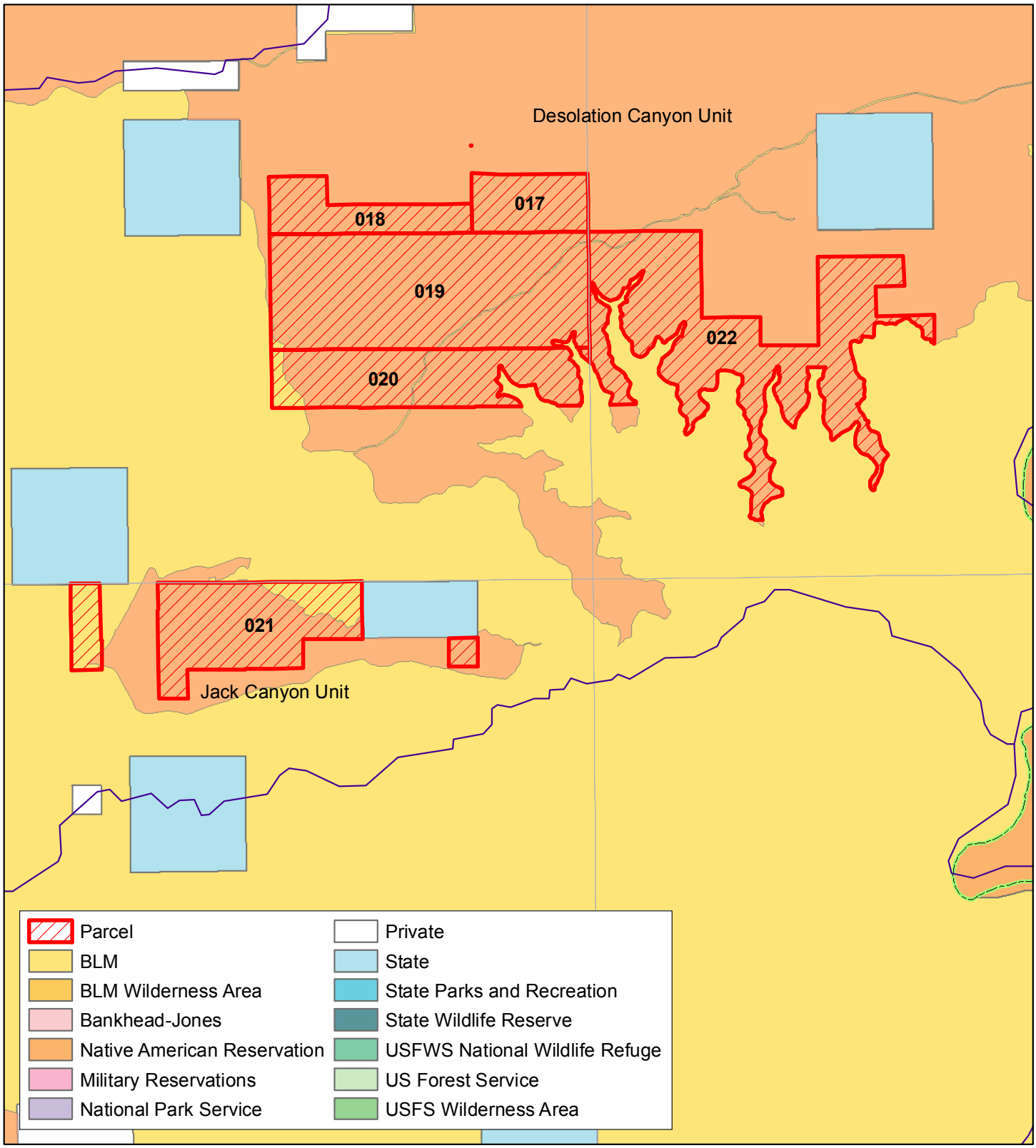
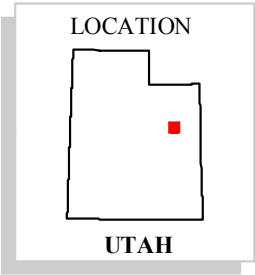
Map 4 Non-WSA Lands with Wilderness Characteristics





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APPENDIX C

INTERDISCIPLINARY TEAM CHECKLIST

INTERDISCIPLINARY TEAM CHECKLIST

Project Title: November 2011 Competitive Oil and Gas Lease Sale
NEPA Log Number: DOI-BLM-UT-G021-2011-0030-EA
File/Serial Number: Not Applicable
Project Leader: Kyle Beagley

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 significant impact analyzed in detail in the EA; or identified in a DNA as requiring further analysis
NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form.

Determi-nation	Resource	Rationale for Determination	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
PI	Air Quality	Modeling conducted for the WTP EIS (2008) and the Uinta Basin Air Quality Study (UBAQS) (2009) predict that ozone levels will be above the 8-hour NAAQs of 75 ppb in the Uinta Basin. In addition, air monitoring for ozone conducted in 2010 and 2011 in the Uinta Basin (which includes the West Tavaputs Plateau) has recorded winter ozone concentrations in excess of the NAAQs. UT-S-01 and UT-LN-96 are applied to all parcels (Air Quality).	Stephanie Howard	5/25/11
NI	Areas of Critical Environmental Concern	After review of the GIS/RMP data, it has been determined that lease parcels 017, and 018 have edges within the Nine Mile Canyon ACEC. Oil and gas will be open to leasing subject to major constraints (NSO). Oil and gas development in the Nine Mile Canyon ACEC will be permitted after compliance with the NHPA. Lease Notices and stipulations have been attached to parcels that are in the Nine Mile ACEC, (lease parcels 017, & 018). UT-S-319 is attached to parcels, 017 and 018. (NSO within the ACEC).	Kathryn Lloyd	05/23/11
NI	BLM Sensitive Animal Species	Northern goshawks, Bald eagles, Swainson's Hawks have been observed, and there is potential for sensitive bat species to be in the area. Lease stipulations and notices should be added to those parcels to reduce any future project's impacts. Site-specific effects cannot be analyzed until an exploration or development application is received, after leasing has occurred. UT-S-260 and UT-LN-45 are attached to parcel 001 (Bald Eagle). UT-S-260 and UT-LN-45 are attached to parcels 001 and 002 (Northern Goshawk and Swainson's hawk). UT-LN-49 is attached to parcel 002 (Bats).	David L. Waller	4/21/11

Determi-nation	Resource	Rationale for Determination	Signature	Date
PI	Cultural Resources	Only about 100 acres of the 9011 acres lease parcels have been inventoried. Fourteen archaeological sites have been recorded. ParcelsUT1111-001, 002 and 005 are located in areas where site size and density are small. Known cultural resources are located in such a fashion (size, density and placement) that avoidance is feasible during development of oil and gas resources. Parcels UT1111-017 to 022 are located within the area of The West Tavaputs Plateau Natural Gas Full Field Development Plan. This area contains many important cultural resources including Nine Mile Canyon. A complete inventory of the proposed lease parcels has not occurred; therefore, to assure appropriate consideration of future effects from the lease sale, the BLM would add the following "lease stipulations" (WO-IM-2005-003 and UT-S-169), to all parcels offered for lease. The Utah Protocol Part VII.A.B. will be applied, subject to the SHPO concurrence, to the cultural resource review for the November 2011 Oil and Gas Lease Sale. A letter was sent to SHPO on May 31, 2011. The PFO has determined that the proposed undertaking will have "No Historic Properties Affected" on historic properties. However, there is some expectation that drilling and development could occur, at which time additional NEPA would be conducted.	Blaine Miller	5/27/11
NI	Environmental Justice	The ethnic composition and economic situation of residents of Carbon and Emery Counties indicate that no minority or low-income populations are experiencing disproportionately high or adverse effects from current management actions (PFO Proposed RMP/Final EIS). Leasing would not adversely or disproportionately affect minority, low income or disadvantaged groups.	Kyle Beagley	5/13/11
NP	Farmlands (Prime or Unique)	After review of NRCS Soil Survey of Carbon Area, Utah, it is determined that there is no Prime or Unique Farmlands within the project area.	Jeffrey Brower	05/03/11
NP	Floodplains	After review of USGS 7.5 min. maps of the project areas, no floodplain as defined by EO 11988, FEMA, or Corps of Engineers is found on or near the project area.	Jeffrey Brower	04/06/11
PI	Greenhouse Gas Emissions	Emissions from earth-moving equipment, vehicle traffic, drilling and completion activities, separators, oil storage tanks, dehydration units, and daily tailpipe and fugitive dust emissions could adversely affect air quality.	Stephanie Howard	8/11/11

Determi-nation	Resource	Rationale for Determination	Signature	Date
NI	Invasive, Non-native Species (EO 13112)	Musk thistle, white top, hounds tongue, cheat grass, and halogeton infestations are known to exist in parcels 001 & 002 and musk thistle, and hounds tongue are known to exist in parcel 005. Musk thistle, hounds tongue, tamarisk and cheat grass infestations are known to exist in parcels 017, 018, 019, 020, 021 and 022. Surface disturbing activities could introduce or spread invasive/non-native species. Lessees would be required to control invasive/non-native species on roads, pads and ROWs. A PUP and PAR would be required before and after all chemical treatments. If treatment occurs as part of regular operations, BMPs, SOPs and site specific mitigation are applied at the APD stage as conditions of approval, negligible impacts would be expected. UT-S-305 is attached to all parcels (Noxious Weeds).	Stephanie Bauer	4/11/11
PI	Native American Religious Concerns	Letters containing notification of this lease sale, location maps and legal descriptions of the offered parcels were sent to the Tribes on 5/25/11. The letters detailed the leasing proposal and requested comments and concerns.	Blaine Miller	5/27/11
PI	Threatened, Endangered or Candidate Plant Species	Lease notices and stipulations have been attached to parcels that are known to contain threatened, endangered or candidate plant species or their habitat and site-specific surveys will determine whether T&E plant species are present. The Uinta Basin hookless cactus may be present within the lease parcels 017, 018 and 022. Should T&E plant species be found, the surface use plan of operations may be amended to protect or avoid these species. T&E-05 is applied to parcels 017, 018 and 022.	Dana Truman	5/20/11
NI	Threatened, Endangered or Proposed Animal Species	There is modeled potential habitat for Mexican Spotted Owls on some of the parcels, based upon USFWS GIS models. No other listed or proposed species would be expected to be potentially on these sites. Lease stipulations and notices should be added to those parcels to reduce any future project's impacts. Site-specific effects cannot be analyzed until an exploration or development application is received, after leasing has occurred. Until there is a site-specific proposal, there is no action directly or indirectly causing modifications to the land, water, or air, therefore "no effect" on any listed animal species or designated critical habitat. UT-S-269 and T&E-06 are applied to parcels 001, 002, and 018 – 022 (MSO). UT-S-270 and T&E-06 are applied to parcels 020 – 022 (MSO). T&E-03 is applied to parcels 020 and 022	David L. Waller	4/21/11

Determi-nation	Resource	Rationale for Determination	Signature	Date
		(Endangered Fish of the Upper Colorado River Basin).		
PI	ESA Candidate Animal Species	Greater sage grouse are known to be present on the parcels. Lease stipulations and notices should be added to those parcels to reduce any future project's impacts. Greater sage grouse are now a candidate specie, which was not the case when the PFO ROD/RMP was completed. Further analysis in the EA is recommended to determine if additional stipulations are needed. Due to very important wintering habitat the following area is recommended for deferral - T. 13 S., R. 16 E., SLM; Sec. 4: Lot 4, SWSW; Sec. 5: Lot 1, SESE; Sec. 8: NENE; Sec. 9: NWNW. UT-S-203 is applied to parcels 001 and 002 (SG nesting). UT-S-212 is applied to parcels 001, 002, 017 – 022 (SG winter).	David L. Waller	4/26/11
NP	Wastes (hazardous or solid)	No chemicals subject to SARA Title III in amounts greater than 10,000 pounds would be used. No hazardous substances as defined in 40 CFR 355 and threshold planning quantities would be used.	Jeffrey Brower	4/06/11
NI	Water Quality (drinking /ground)	Maintenance and refueling of equipment could impact water quality. However, standard protocols would minimize possibility of releases. Drill holes will be cased to an elevation below 5800 feet. No surface disturbance or occupancy would be maintained within 660 feet of any natural springs to protect the water quality of the spring. No new disturbance will be allowed in areas equal to the 100-year floodplain or 100 meters on either side of the center line of any stream, stream reach, or riparian area. At the time of development, drilling operators will conform to the provisions of the operational regulations and Onshore Oil & Gas Order Number 2, which requires the protection and isolation of all useable quality waters. High-country watershed areas would be closed seasonally from December 1 to April 15 to surface disturbing activity. UT-S-126 and UT-S-127 are attached to all parcels (Natural Springs, and Floodplains, Riparian Areas, Springs and Public Water Resources). UT-S-156 is applied to parcels 001, 002, 005, and 021 (High Country Watershed).	Jeffrey Brower	4/06/11
PI	Hydrologic Conditions	The associated surface disturbance from oil and gas development on the proposed leases would have the potential to interrupt surface flow patterns which could create new channeling of surface runoff from storms and spring snow melt. The construction of well pads, roads and pipelines could interrupt surface runoff and create paths for concentrated surface flow. Impacts to hydrologic conditions could increase sediment loading	Jeffrey Brower	5/23/11

Determi-nation	Resource	Rationale for Determination	Signature	Date
		and associated dissolved solids into streams.		
NI	Wetlands/ Riparian Zones	Wetlands and riparian zones present on the subject parcels include Horse Creek (Parcel 001), Ford Creek, Price River (Parcel 002), Cow Canyon (Parcel 005), and unnamed springs in Parcels 001 and 002. UT-S-126 and UT-S-127 are applied to the following parcels 001, 002, 005, and springs in parcels 001 and 002.	Karl Ivory	5/23/11
NP	Wild and Scenic Rivers	There are no Wild and Scenic Rivers within this project area as per PFO ROD/RMP/GIS review.	Kathryn Lloyd	4/5/11
NP	Wilderness and Wilderness Study Areas	There are no Wilderness/WSAs within this project area as per PFO ROD/RMP/GIS review.	Kathryn Lloyd	4/5/11
NI	Rangeland Health Standards and Guidelines	Water quality, soils, vegetation, Threatened & Endangered Species habitat and other components of ecological conditions that are considered in Rangeland Health Standards and Guides have been analyzed in the PFO Proposed RMP/Final EIS. Given the degree of anticipated exploration and development and application of standard operating procedures, best management practices and mitigation applied at the APD stage as conditions of approval it is concluded that Rangeland Health Standards would be met.	Dana Truman	5/20/11
NI	Livestock Grazing	Standard operating procedures, best management practices and site specific mitigation applied at the APD stage as conditions of approval will address livestock grazing resource issues not already analyzed in the PFO Proposed RMP/Final EIS. Any range improvements such as fences and cattle-guards that would be affected would be replaced or repaired by the applicant. The applicant would replace any barriers to livestock that are removed through field development.	Dana Truman	5/20/11
NI	Woodland / Forestry	Standard operating procedures, best management practices and site specific mitigation applied at the APD stage as conditions of approval will address woodland and forest resources issues not already analyzed in the PFO Proposed RMP/Final EIS.	Stephanie Bauer	4/11/11
NI	Vegetation including Special Status Plant Species other than FWS candidate or listed species	Standard operating procedures, best management practices and site specific mitigation applied at the APD stage as conditions of approval will address vegetation. Graham's Penstemon may be present in parcels 017, 018, 019 and 022. Lease notices and stipulations have been attached to these parcels and site-specific surveys	Dana Truman	5/20/11

Determi-nation	Resource	Rationale for Determination	Signature	Date
		will determine whether these species are present. Should any special status plant species be found, the surface use plan of operations may be amended to protect or avoid these species. As such there will likely be no adverse impacts to special status plant species. UT-LN-49 and UT-LN-51 are applied to parcels 017, 018, 019, and 022.		
NI	Fish and Wildlife, excluding USFWS Listed Species and BLM Sensitive Species, e.g. Migratory birds	The lease parcels contain aspen and sagebrush, which are important habitats for mule deer, elk, and migratory birds. The area is mostly used as fawning and calving habitat, according to the maps prepared by UDWR. Some of the drainages in parcel 001 have Moose winter habitat. Lease stipulations and notices should be added to those parcels to reduce any future project's impacts. Site-specific effects cannot be analyzed until an exploration or development application is received, after leasing has occurred. UT-S-257 & UT-LN-24 are attached to parcel 001 (Moose winter/habitat). UT-S-232 and UT-LN-03 are attached to parcels 001, 017 – 022 (Deer and Elk crucial winter). UT-S-248 and UT-LN-08 are attached to parcels 001, 002, 005 (Deer fawning and Elk calving). UT-LN-45 is attached to parcels 001, 002, 019, and 021 (Migratory Bird).	David L. Waller	4/21/11
NI	Soils	NSO is applied on slopes greater than 40%. In surface disturbing proposals regarding construction on slopes of 20 percent to 40 percent, proponent would include an approved erosion control strategy and topsoil segregation/restoration plan. Such construction must be properly surveyed and designed by a certified engineer and approved by the BLM prior to project implementation, construction, or maintenance. Other standard operating procedures, best management practices and site specific mitigation applied at the APD stage including reclamation, as conditions of approval will address soil resource issues not already analyzed in the PFO Proposed RMP/Final EIS. UT-S-97 and UT-S-101 are applied to all parcels (NSO for slopes greater than 40%, and CSU on slopes 20 – 40%).	Jeffrey Brower	4/06/11
NI	Recreation	The proposed action is in an area (Extensive Recreation Management Area) where recreation opportunities and problems are limited and explicit recreation management is not required. Minimal management actions related to the BLM's stewardship responsibilities are adequate in these areas. Implementation of the project would have minimal	Kathryn Lloyd	4/5/11

Determi-nation	Resource	Rationale for Determination	Signature	Date
		impact on dispersed recreation in the ERMA.		
NI	Visual Resources	The Visual Resource Management Class within the proposed action is a III and IV, which allows for the level of change to the characteristic of the landscape to be moderate to high. The objectives are to provide for management activities which require moderate to major modification of the existing character of the landscape. Implementation of the proposed project will have an impact to the landscape but will not exceed the Visual Resource Management Class III or IV objectives.	Kathryn Lloyd	4/5/11
NI	Geology / Mineral Resources/ Energy Production	The FEIS adequately addresses the impacts of oil and gas leasing. 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. Mineral claims have been checked (5/23/11) and none were observed; however if claims are present or staked prior to drilling activities, the proposed actions can accommodate any claims.	Don Stephens/ Chris Conrad	5/23/11
NI	Paleontology	Parcels 005 and 017 – 022 are located where the surface is outcrop of the Green River Fm, a Potential Fossil Yield Classification System class 5. This means it is likely that a BLM-permitted paleontologist will need to be on site during any surface disturbing activities. This includes roads, pads, pump stations, pipelines, etc. A pre-work survey by a paleontologist will not be necessary since the fossil type is such that it won't be visible on the surface.UT-S-177 is attached to parcels 005, 017 – 022.	Michael Leschin	4/11/11
NI	Lands / Access	As described, the proposed action would not affect access to public land. Off-lease ancillary facilities that cross public land, if any, may require separate authorizations. Subsequent projects should coordinate with existing ROW holders and apply operating procedures and site specific mitigation at the APD stage that would ensure protection of existing rights.	Connie Leschin	4/11/11

Determi-nation	Resource	Rationale for Determination	Signature	Date
NI	Fuels / Fire Management	There are no past or proposed fuels treatments in the project area. The implementation of appropriate reclamation standards at the time of site specific proposals will prevent an increase of hazardous fuels.	Blaine Tarbell Brian Keating	5/27/11
NI	Socio-economics	The nominated parcels are located in rural areas with no commercial and residential development. No impacts to socio-economics are expected to occur as a result of the proposed action.	Kyle Beagley	4/26/11
NI	Wild Horses and Burros	As per review of GIS and PFO ROD/RMP maps, parcels 017 – 022 lie within the Range Creek Wild Horse Herd Management Area Boundary. However they are not within a currently occupied use area.	Mike Tweddell	5/23/11
NP	BLM Natural Areas	There are no BLM Natural Areas within this project area as per PFO ROD/RMP/GIS review.	Kathryn Lloyd	4/5/11
NI	Coal	Several of the proposed oil and gas lease sale parcels are within the Book Cliff KRCRA. While none of the parcels have previously been leased for coal, parcels 001, 002 and 003 are within acreage that at one time was proposed to be underground mined in the past. There are currently no expressions of interest in mining the coal underneath these parcels. The probability of there being coal mining interests within these parcels in the next 10 to 20 years is very low due to the depth of overburden, geologic conditions and lack of current mining in the area (access). Parcel 003 has been withdrawn from the sale due to the potential impact of oil and gas drilling on the coal resource within parcel 003. Impacts to coal resources through the sale of the other oil and gas leases are expected to be minimal.	Michael Glasson	5/23/11
PI	Non WSA Lands with Wilderness Characteristics	Several of the proposed parcels are located within Non WSA Lands with Wilderness Characteristics area as per PFO Proposed RMP/Final EIS and GIS review (017, 018, 019, 020, 021, and 022). It is anticipated that there will be both direct and indirect impacts to the wilderness characteristics such as, loss of naturalness, and loss of opportunities for solitude and primitive and unconfined recreation. However, the PFO ROD/RMP, determined that the Non WSA lands with wilderness characteristics would not be managed for those characteristics because those lands were found to have other important resource uses that would conflict with protection, preservation, or maintenance of the wilderness characteristics.	Kathryn Lloyd	5/9/11

FINAL REVIEW:

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

APPENDIX D
COMMENT RESPONSE TABLE

Number	Comment	Response
	EPA	
1	The EA could include an estimate of the maximum number of wells to be supported by the leases, based on [RFD] projections. According to the Price Field Office RMP, up to 900 wells are projected in the Emery/Book Cliffs play. Although it seems unlikely that all of these wells would be developed on the 3 Emery/Book Cliffs lease parcels, we don't see how an upper bound to the potential impacts can be known unless the EA includes a RFD well count.	As stated within the General Analysis Assumptions and Guidelines (EA section 4.2), it is unknown when, where, or if future well sites or roads might be proposed on any leased parcel. At the leasing stage, BLM cannot predict, potential development with any sort of accuracy. 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. Appendix M of the PFO Proposed RMP/Final EIS, also states that the projected [RFD] number of well pads is an estimate for analyzing potential impacts to other resources and resource uses that could result from the development of existing leases and any future leases that may be issued as a result of implementing an analyzed alternative. The number of wells per well pad is not limited by the Price RFD scenario. Future EAs and EISs for exploration and development of oil and gas resources will be tiered to this Proposed RMP/Final EIS analysis and will, at a minimum, refine the RFD scenario. As suggested, the BLM has clarified the RFD discussion at EA section 4.2.1.
2	The EA could include an estimate of the additional surface disturbance to occur on the lease parcels proposed for sale, since estimated surface disturbance acreages are important for determining impacts to many resources including wildlife, air quality and water quality.	The EA estimates a 6 acre disturbance to occur on the subject parcels (well pad at 1 acre and access roads at 5 acres). Specifically, the disturbance estimates are identified at EA sections 4.2, 4.2.1, 4.2.2 and 4.3.3.
3	The EA could include a projected inventory of criteria air pollutant and volatile organic compound emissions.	Due to the very small level of anticipated development (one well per year); an emission inventory has not been conducted for the parcels that occur outside of the WTP project area. A typical oil and gas well emission inventory is estimated for the purpose of this analysis and is based on analysis assumptions added, as suggested, at EA section 3.3.6.

Number	Comment	Response
		At section 4.3.1.6, the BLM also includes emissions discussions for parcels within the WTP project area by tiering to the WTP Final EIS. Since these parcels occur within the Uinta Basin, BLM also incorporates by reference the air quality analysis information available within the GNB EIS, as supplemented.
4	The EA could include an assessment of potential air quality impacts associated with oil and gas development supported by the lease sale, including, where applicable, incorporation of the West Tavaputs EIS air quality analysis. EPA also recommends that the BLM evaluate the RFD and emissions inventory to determine whether an air quality impact assessment should include air quality modeling and if BLM determines that no air quality modeling is needed, the EA include a qualitative narrative analysis of air quality and air quality related values.	The BLM's analysis of potential air quality impacts and its related values are provided throughout EA sections 3.3.6, 4.2, 4.3, 5 and appendices A-D. As suggested at comment 1, BLM clarified the use of a one well per parcel assumption for areas outside of the WTP. For parcels within WTP project area, BLM continues to utilize the RFD as defined in the WTP ROD/EIS. EA at section 4.2.1. An emissions inventory was not completed for the parcels outside of the WTP project area because of the anticipated small RFD and its associated minor impacts to air quality in the region. Controls for the management of air quality are established in EA section 4.3.1.7 (mitigation) and are based on the avoidance and minimization measures that should be considered in a future plan of development. Given that projected level of emissions, Because air quality is analyzed in the WTP EIS and GNG EIS (as supplemented) BLM has determined that this level of NEPA analysis is appropriate.
5	The EPA recommends that the proposed list of [air quality] mitigation measure be modified to be consistent with those contained in the West Tavaputs and the Greater Natural Buttes project EISs.	The Proposed Action description (EA section 2.2), specifies that the terms and conditions for each parcel may be subject to protections and mitigation as outlined in the West Tavaputs ROD, including those outlined in its Attachment 2. BLM has specifically attached stipulation UT-S-01 (air quality) and lease notices UT-LN-96 (air quality) and UT-LN-97 (West Tavaputs) to accommodate that mitigation outline in the West Tavaputs ROD. As suggested, the BLM has also incorporated the air quality controls defined in the Greater Natural Buttes Supplement to the Draft EIS at EA section 4.3.1.7 and in lease notice UT-LN-96. Detailed language is included in Appendix A of this EA.

Number	Comment	Response
6	The EPA recommends that BLM rely upon the implementation of these measures to support a Finding of No Significant Impact or Finding of No New Significant Impact, and thus include these measures as lease stipulations or lease notices.	Within Appendix A, BLM has identified all stipulations and lease notices (as edited by comments) that would be attached to each parcel as per the Proposed Action–Alternative A (EA section 2.2).
7	The EPA recommends that the EA include a discussion of how a future plan of development would consider the potential need for additional mitigation.	BLM has prepared lease notice UT-LN-96 and UT-LN-97 which informs potential buyers that a parcel may be subject to additional control measures as defined in the WTP ROD (and the GNB EIS for air quality).
8	The EPA also notes that the Record of Decision for West Tavaputs approved a contracted development that incorporated important mitigation measures to reduce project impacts to air quality and non-air quality resources. We therefore recommend that the EA describe those impacts that were identified in the ROD as requiring mitigation and that compliance with this mitigation be identified in a lease notice for the six parcels in the West Tavaputs area to support the Finding of No New Significant Impact.	The EA incorporates important mitigation measures and describes the air quality issues prevalent in the area. BLM anticipates the identified mitigation/controls by applying lease notice UT-LN-96 (air quality). BLM also attaches a lease notice UT-LN-97 (West Tavaputs) for those leases located within the WTP project area that states to include that important link to the previously agreed control measures. BLM also refers to the mitigation in the West Tavaputs ROD throughout Chapter 4 of the EA. The BLM, in Appendix A, identifies numerous stipulations and/or notices for the management of cultural ACECs, cultural resource, including inventories, fossil resources, steep slopes, springs, streams, high country watersheds, greater sage-grouse (nesting, brooding and winter habitats), crucial winter range and fawning/calving habitat (mule deer and elk) and habitats for moose winter range, raptors, Mexican spotted owl (including designated critical habitat), migratory birds, listed plant species, special status plant species, Utah sensitive species, endangered Colorado river fishes, and noxious and invasive weed species. BLM notes our application of the air quality stipulation (UT-S-01) for all parcels on this lease sale.

Number	Comment	Response
	SUWA	
9	BLM must conduct environmental analysis at the leasing stage while it still retains full discretion regarding its management decisions. In the case of air quality impacts and impacts to other resources, the BLM appears to be pushing that analysis off to some other day. This is prohibited by the NEPA. At the leasing stage, BLM makes an "irrevocable commitment" to allow construction of roads, well pads, and pipelines. Once the lease is issued, BLM no longer has the authority to prevent some level of development. Because the issuance of the proposed November 2011 leases is the point of commitment, BLM must fully consider the environmental impacts of the leases, including air pollution, before issuing them.	As described by the WO[7], management of onshore federal oil and natural gas resources occurs in five distinct phases. Nothing changes on the ground as a result of a lease being issued. Likewise, no surface disturbance may begin on a lease without associated permits including the APD. BLM cannot approve an APD until the requirements of certain laws and regulations have been met, including CAA, NEPA, NHPA and ESA. BLM notes that this November 2010 lease sale EA complies with the level of NEPA analysis outlined in WO IM-2010-117 and is consistent with the National MOU for air quality. When and if an APD is submitted, BLM will also initiate NEPA that will invite additional public participation and consultation with agencies with expertise and jurisdiction by law. Based on that analysis, additional constraints may be imposed at the APD stage. Refer also to comments #4 and #11 responses.
10	Particulate matter and ozone pollution are serious problems in the Unita Basin. Monitors in the Uinta Basin reveal that ozone and fine particulate pollution concentrations have now reached levels in excess of federal air quality standards, something that [neither the Vernal nor Price resource management plans (RMPs)] ever considered and something that the [Vernal EA and Price EA] only acknowledge in passing. Ozone and $PM_{2.5}$ values in the Uinta Basin, the area of these six contested leases, have recently been recorded well in excess of federal air quality standards. [Data charts provided].	Throughout EA section 3.3.6, (and in other documents and correspondence between/among EPA) BLM acknowledges pollution levels that have exceeded NAAQS within the Uinta Basin and the corresponding data sets obtained from the EPA and UDAQ which document those exceedences. In addition to UDAQ's Vernal station, BLM utilized monitoring data from EPA's Ouray and Redwash site and NPS's Dinosaur NM.
11	The [Vernal EA and] Price EA acknowledge[s] that oil and gas development has likely caused exceedances of federal air quality standards for ozone and $PM_{2.5}$ in the Uinta Basin. Air emissions associated with oil and gas development begin at the surface	BLM states throughout the EA, that oil and gas development has likely contributed to exceedences of the ozone standard. BLM notes that there is little evidence to suggest this development activity is contributing substantially to any $PM_{2.5}$ issues in the Uinta

[7] Accessed online at: http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/leasing_of_onshore.html. The phases include planning, nomination/sales, permitting/development, operations/production and plugging/reclamation.

Number	Comment	Response
	disturbing stage and continue through full development. Two of the biggest air quality problems associated with oil and gas development are ground level ozone and $PM_{2.5}$. The pollution emissions of oil and gas projects are measurable; this evidence repudiates the [Vernal and] Price EA[s]' unsubstantiated claims to the contrary that quantitative analysis or additional analysis of these contributions would not be helpful at this point. [Not only are] oil and gas development and production emissions measurable and quantifiable, they are, at the very least, sufficient to exacerbate poor air quality in the Uinta Basin. BLM's claims to the contrary in the [Vernal EA and] Price EA lack evidence or support and are contradicted by analyses the BLM itself has done on other occasions, as well as the Price [and Vernal] EA[s] themselves. [See Price EA at 29; Vernal EA at 25]. BLM must support its claims with adequate evidence in these EA[s]. The EPA has notified BLM of its concerns that elevated ozone levels in the [Vernal Field Office] are likely to increase due to current oil and gas development. Modeling and analysis conducted by the BLM confirms this. The [Vernal EA and] Price EA acknowledge[s] that oil and gas development is responsible for the elevated levels of ozone in the Uinta Basin. [See Price EA at 17-18; Vernal EA at 17-18.] A recent environmental analysis released by the BLM also acknowledged that oil and gas development was likely responsible for elevated ozone levels in the Uinta Basin. [See Price EA at 17-18; Vernal EA at 17-18.] According to the EPA, this increase is "considered a significant project-specific contribution given the recent ozone monitored exceedances in the Uinta Basin." The EPA also notified the BLM that this project had the "potential to contribute to significant impacts to $PM_{2.5}$." The BLM routinely prepares $PM_{2.5}$analyses for oil and gas development in the [Vernal Field Office]; these analyses consistently show measurable, impactful increases in this pollutant. Thus, proposed development on existing leases in the Uinta Basin is already likely to continue and to further exacerbate	Basin. BLM is not stating that the emissions from oil and gas activities are not measureable but that the amount, location, and duration of future oil and gas operations cannot be known at the leasing stage (verses that of the project stage, as stated by the commentor) with enough certainty to conduct quantitative modeling that will produce results that could reasonably be used in decision making. BLM is not claiming that emissions from oil and gas development could not or would not exacerbate existing air quality problems. EA Section 3.3.6 clearly states that BLM believes oil and gas development is contributing to existing ozone exceedance issues. EA section 4.2.6 also states that anticipated activities from this lease sale could contribute a minor amount to future exceedences. Based on the RFD for this lease sale (1 well per certain parcels), and the mitigation identified in the EA, BLM believes it is unlikely that emissions from this level of actively would majorly impact or exacerbate existing or potential future ambient ozone concentrations that haven't already been analyzed in the WTP or GNB EISs. BLM does not "routinely" conduct $PM_{2.5}$ analyses, nor has the analyses that have been done to date show measurable impactful increases in this pollutant. Refer also to comment #4 response.

Number	Comment	Response
	poor air quality. Oil and gas development in the Uinta Basin contributes measurable, impactful levels of ozone and $PM_{2.5}$ pollution. In light of the poor air quality in the Uinta Basin as a result of these two pollutants, those contributions are particularly damaging. These contributions have not been fully acknowledged and analyzed by the BLM in the [Vernal and] Price EA[s].	
12	BLM has not taken a hard look at the adverse effects of oil and gas development on air quality and it cannot approve development that will exceed federal air quality standards on these six lease parcels. This is a critical failure as ozone and $PM_{2.5}$ pollution are above federal standards in the Uinta Basin, where these six leases are located, and new development will likely only further exacerbate this problem. For this reason, BLM must take a hard look at impacts to air quality from potential development, since after a lease has been issued the agency will have made an irreversible and irretrievable commitment of resources that could only further violate federal air quality standards. The [Vernal and] Price EA[s] are contradictory in their air quality analysis and as a result, have not taken a hard look at the impacts of these potential leasing decisions on air quality. This oversight is remarkable. [Both] the Price EA [and the Vernal EA] acknowledge[s] that oil and gas development is likely the main culprit behind elevated levels of ozone and $PM_{2.5}$ pollution. [See Price EA at 17-18; Vernal EA at 17-18.] The BLM further acknowledges that continued development will exceed federal and state air quality standards. See Price EA at 75. The BLM also recognizes that the oil and gas development likely to flow from the leasing of these parcels will produce emissions that contribute to ozone and $PM_{2.5}$ pollution. [See id. at 29; Vernal EA at 25.] However, the [Vernal EA and] Price EA then suggest, at some points that these contributions to pollution levels will be "negligible" and that they are not likely to contribute to any violations of standards, or at the very least, will "only contribute a small amount" to future exceedances of air quality standards. [See	The BLM disagrees that the Vernal and Price November 2011 lease sale EAs contradict each other or within the individual EAs themselves and the commentor does not provide BLM with the specific locations of the implied contradictions. BLM cannot logically follow the commentor's points. As stated in our response to comment #11, BLM acknowledges that oil and gas development contributes to elevated levels of ozone pollution; however, this is not the case with particulate matter ($PM_{2.5}$). Particulate matter contributions have not been proven in this case. Within the comments, errors are not identified with respect to the application of the air quality stipulation (UT-S-01) or with lease notices UT-LN-96 (Air Quality) and UT-LN-97 (West Tavaputs) for all applicable best management practices that would apply at the development stage for the subject parcels. Air quality is also affected by how well soil resources are managed. As such, concerns were not identified with BLM's application of the stipulations for steep slopes, springs, streams, high country watersheds or noxious weed control. Informative and accurate modeling cannot occur before development proposals including locations, equipment, and development levels are known. The only reasonable foreseeable development on these parcels is exploratory at this stage. At that RFD level projected in this EA, development impacts would indeed be "negligible" and "only contribute a small amount" or have been analyzed in previous documents. It is critical to note that BLM acknowledges that even at the minor level of development forecast by the RFDs described in this EA, BLM is acknowledging that

Number	Comment	Response
	Vernal EA at 25; Price EA at 29-30.] Regardless, the BLM then appears to commit to prepare dispersion modeling at the site-specific proposal stage before development will take place. [See Vernal EA at 25; Price EA at 29.] This internal inconsistency in the [Vernal EA and] Price EA must be eliminated and the BLM must perform this modeling analysis now, before it has issued these leases and before it has committed itself to development. Considering the poor air quality of the region, it is not clear that any development can take place without further exacerbating already poor air quality levels. Dispersion modeling is a mathematical approximation of the atmosphere, allowing the BLM to estimate how certain pollutants will concentrate or disperse once emitted. See id. at 4-13. Thus, modeling allows for descriptions of pollution concentrations that are similar to federal air quality standards, the benchmark that BLM should use to evaluate air quality impacts. BLM's Vernal and Price EAs claim that modeling at the prelease stage is not an accurate way to identify possible impacts. See Vernal EA at 25; Price EA at 29. This explanation, however, conflicts with prior declarations by the BLM, with BLM's practice, with reasonably foreseeable development scenarios the agencies has constructed, and with guidance from the EPA. The BLM's repeated use of dispersion modeling on various projects demonstrates that the agency does find it useful for estimating impacts and quantifying them. It also shows that such models may be prepared well before leasing. In addition, the EPA, the agency charged with protecting the nation's air quality and the technical expert in this realm, has continually indicated to BLM that modeling is useful and worthwhile. The BLM has already developed reasonably foreseeable development scenarios for how development might take place on leased parcels. See Price EA at 19-21. These scenarios, which are used to project potential impacts to other resources, can easily be	emission will contribute, albeit to a minor level, to existing air quality issues (EA Section 4.2.6). It is not until larger development is proposed that potential impacts and appropriate mitigation can be conclusively defined through more extensive analysis, including photochemical modeling where appropriate. As per the mitigation section within the EA, appropriate air quality controls are attached as stipulations or lease notices as defined in the WTP and GNB EIS for the parcels located within the WTP project area. BLM notes that an important distinction is made here. The BLM thanks the commentor for acknowledging our efforts at project modeling and that it is done when modeling is appropriate. Modeling at the project stage has been and will continue to be used to estimate air pollution impacts from BLM authorized activities. BLM does not know, at the present time, what projects may or may not occur on these parcels beyond the RFDs identified in the EA. It is possible that further development may be proposed resulting from the exploratory development reflected by the RFDs, and if and when that occurs, BLM will incorporate that site specific information needed to conduct modeling. Modeling was conducted for the WTP and GNB EIS in which BLM tiers to or incorporates by reference in this EA for the parcels located within the WTP project area. The commentor maintains that the BLM's repeated use of dispersion modeling on various projects demonstrates that the agency does find it useful for estimating impacts and quantifying them and that it also shows that such models may be prepared well before leasing. The BLM maintains that the use of modeling at the project stage in no way says anything about the feasibility of doing modeling "well before leasing". If anything is repudiates that notion. Refer also to comment #9 response.

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	applied to air quality impacts analysis. BLM has not explained why such projections could not be applied to air quality development. To comply with NEPA's "hard look" requirement, BLM must explain how its actions will or will not comply with environmental laws and policies, such as NAAQS. See 40 C.F.R. § 1502.2(d). In fact, the Federal Land Policy and Management Act requires BLM to ensure that its approval of oil and gas development complies with all applicable air quality standards. 43 U.S.C. § 1712(c)(8) (requiring BLM to "provide for compliance with applicable pollution control laws, including State and Federal air … pollution standards"); 43 C.F.R. § 2920.7(b)(3) (requiring that BLM "land use authorizations shall contain terms and conditions which shall … [r]equire compliance with air … quality standards established pursuant to applicable Federal or State law") (emphasis added). Accordingly, BLM must analyze air emissions associated with oil and gas development, and determine whether those emissions will result in violations of federal air quality standards.	
13	The BLM did not consider the effects of its decision to issue these six leases on climate change or how climate change will impact the resources related to the development of these six leases. The EPA has pointed out the inadequacies of BLM's analysis and the BLM itself has now begun preparing some climate change analysis in other documents, demonstrating that this may be done. Unfortunately, the BLM's protest decision merely attempts to explain its refusal to conduct this analysis at the lease sale stage, the point of an irreversible and irretrievable commitment of resources. In Secretarial Order 3289, Secretary Salazar stated that BLM "must consider and analyze potential climate change impacts when undertaking long-range planning exercises" and also made clear that the requirements in Secretarial Order No. 3226 remain in effect. Order 3226, issued by then-Interior Secretary Bruce Babbitt, requires BLM to "consider and analyze potential climate change impacts" when undertaking long-range planning exercises, including specifically "management plans and activities developed	BLM has not made a decision as to whether these parcels will be leased and continues with the NEPA process. Numerous statements are made about a "decision" and "protest decision" within this comment. Where this occurs the BLM believes these are remnants of other correspondence with the BLM and that it would not apply to this situation. Greenhouse gases and climate change were discussed at EA sections 3.3.6, 4.2, and 4.3.3.6. BLM has also added greenhouse gases to the ID Team Checklist, appendix C. BLM acknowledges climate change in the PFO Proposed RMP/Final EIS and incorporates the information and analysis contained in its sections 3.1.1 and 4.2.1. In addition, BLM also incorporates the analysis completed for the West Tavaputs Plateau and Greater Natural Buttes EISs. As the tools for predicting climate change improve and policy for determining effects of climate change is solidified, BLM remains committed to adjust management accordingly at that time.

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	for public lands." These Orders are enforceable and demand BLM's compliance. The issuance of these six leases and the potential oil and gas development that would ensue constitute the sort of activity on public lands where BLM must consider climate change. Whether this analysis should have taken place at the resource planning stage or the lease issuance stage, BLM's actions here appear more reflective of an attempt to avoid this analysis by pushing it off to some other phase (which phase never comes). Under NEPA, BLM must adequately and accurately describe the environment that will be affected by the proposed action—the "affected environment." 40 C.F.R. § 1502.15. This includes the affected environment as modified by climate change. BLM did not adequately conduct any analysis of the effects of climate change in the Vernal RMP nor did the agency consider the greenhouse gas contributions of reasonably foreseeable oil and gas development originating in these six lease parcels. In the Vernal RMP, BLM claimed that it could not analyze the impacts of climate change due to lack of tools for quantification, including a lack of guidance from EPA. See, e.g. Vernal RMP at 4-8; Director's Protest Resolution Report for Vernal RMP at 49-50 (Oct. 29, 2008). The same goes for the Price RMP. However, EPA rejected that precise argument in its comments on the Vernal RMP, stating that "NEPA requires federal agencies to take a hard look at potential environmental impacts associated with their proposed actions" and the "[l]ack of regulatory protocol or emission standards for greenhouse gases does not preclude BLM from fulfilling this responsibility." Letter from Svoboda to Sierra at 4-5. The BLM attempts to waive away these issues by asserting that it is too soon to address issue of climate change. See Vernal EA at 32; Price EA at 37. However, such an argument ignores the fact that this analysis must take place at the point of irreversible and irretrievable commitment. See supra (citing Southern Utah Wilderness Alliance, 159 IBLA at 240-43; Friends of the Southeast's Future, 153 F.3d at 1063; Pennaco Energy, Inc., 377 F.3d at 1159-61; Union Oil Co., 102 IBLA at 189; Conner, 848	At EA section 1.7, BLM considered but eliminated disturbed desert dust and impacts to snowpacks as an issue to be considered in this EA. BLM reviewed the information provided and believes that that attempting to complete such analyses at the leasing stage would not lead to accurate, useful results, would not be an appropriate use of the agency's time and resources and would be pure conjecture that would not lead to an informed Bureau decision. Instead, BLM refers the public to the discussions associated with particulate matter in whole. Air quality mitigation and controls have been specifically prepared with the guidance and recommendations of the EPA. As with our response to comment #12, BLM notes an important distinction. Logic dictates that reasoned approach must be taken to estimate air pollution or perceived impacts to global climate change from BLM authorized activities. BLM must first adhere to the agreements made with the EPA by following procedures outlined in the Air Quality MOU and those of stemming from the WTP ROD.

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	F.2d at 1448-51; Peterson, 717 F.2d at 1414). These six oil and gas leases do not prohibit all surface use and therefore constitute an "irreversible and irretrievable commitment of resources." See supra; Peterson, 717 F.2d at 1414. This argument also ignores the conclusion of the EPA that the Vernal and Price RMPs do not adequately analyze greenhouse gas emissions from oil and gas development and that an "[a]nalysis of greenhouse gas emissions will still be needed for future NEPA compliance regarding the approval of oil and gas operation in the Vernal planning area." Letter from Svoboda to Sierra at 4. The same goes for the Price planning area. This oversight and obfuscation by BLM is significant. As the agency explains elsewhere, the Council on Environmental Quality released draft guidance for how NEPA analyses should consider and evaluate greenhouse gas emissions as well as climate change. Gasco Uinta Basin Project at 3-11. "Specifically, where a proposed action is anticipated to cause direct, annual emissions of 25,000 metric tons or more of CO2-equivalent greenhouse gas emissions, a quantitative and qualitative assessment is required together with the consideration of mitigation measures and reasonable alternatives to reduce greenhouse gas emissions." Id. BLM has recently evaluated a one hundred-well-per-year development in the Vernal Field Office that would result in over 63,870 tons per year of carbon dioxide, a greenhouse gas. See id. at 4-6. BLM's lack of analysis constitutes a failure to take a hard look at the impacts of its decision on climate change. The Price [and Vernal] EA[s] also fail[s] to consider the pressing issue of disturbed desert dust being deposited on nearby mountain snowpack, in turn leading to early snowmelt and increased regional temperatures, which is directly related to the larger phenomenon of climate change. The BLM should analyze the impacts of all the surface disturbing activities that would be permitted in the leasing of the parcels offered in the November 2011 lease sale along with the potential	

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	impacts of ongoing and reasonably-foreseeable activities in the [Vernal and] Price planning area[s] on the phenomenon of dust melting snow. In addition to qualitative analysis, the BLM can at least quantify total suspended particulates that are likely to be generated by wind erosion on the disturbed surfaces described above; this is something BLM already knows how to do and has employed in some projects.	
14	Lease UT1111-17, UT1111-18, UT1111-19, UT1111-20, and UT1111-22 were previously offered by the BLM in the December 2008 oil and gas lease sale. These parcels were later withdrawn after a federal court issued a temporary restraining order and the Secretary of the Interior then determined that the parcels were being offered with inadequate, flawed analysis. Subsequently, the BLM sent a team of agency staff to investigate these parcels; this investigation was compiled into a report known as the "Stiles Report." See Price EA at 2. The Stiles Report specifically recommended that lease parcels UT1111-17, UT1111-18, UT1111-19, UT1111-20, and UT1111-22 (or their precursors) be deferred from reoffering until a number of analyses could be conducted and conditions met. Stiles Report at 8-9. These conditions have not been met and the analyses have not been performed, therefore the BLM should remove these parcels from the November 2011 sale list. The Stiles Report indicated that the air quality analysis needed for the leasing of these parcels was lacking. See Stiles Report at 9. As described above, the air quality analysis for these five parcels is still deficient and the BLM should not offer them for lease. See supra. Furthermore, the Stiles Report indicated that leasing of this area at this time was not needed to ensure the orderly development of minerals. Stiles Report at 9. It recommended that BLM wait until significant oil and gas development had commenced in the	As related to the air quality assertions above, it was suggested that 4 lease parcels (UT1111-018, UT1111-019, UT1111-020 and UT1111-022) must be deferred because the required level of analysis for air quality is inadequate and that the BLM has not addressed the concerns identified in the 2009 Stiles Report. In regards to parcels UT1111-017, UT1111-018, UT1111-019, UT1111-020 and UT1111-022 (Stiles # 339, 340, 341, 342 and 345, respectively), the Stiles Report states the following: *The Team recommends deferral to reconsider the impacts on documented wilderness characteristics and to provide opportunity to consider the cumulative impacts of expanded leasing in the area near or accessed (in part) by Nine Mile Canyon. Further, leasing should be deferred until the completion of NHPA consultation relating to the use of, and development near, Nine Mile Canyon. The findings of the ongoing West Tavaputs field development Environmental Impact Statement should also inform future leasing decisions for this area, especially in the case of air quality. Leasing in this area would extend leases into the generally unleased portion of lower Nine Mile Canyon and the expansive canyon network breaking toward Desolation Canyon. Should significant oil or gas production begin on other lands in the immediate vicinity, it may be appropriate to go forward with leasing, but at the present time it does not appear that leasing of this area is needed to ensure the orderly development of minerals.* The BLM has complied with the Stiles Report recommendations for the subject parcels. The West Tavaputs Full Field Development EIS has concluded with a Record of Decision[8] signed on July 2, 2010. In addition, a programmatic agreement was signed by all parties on January 5, 2010, which also includes several concurring parties. The stipulations and notices as identified in this EA's

[8] Accessed online at: http://www.blm.gov/ut/st/en/fo/price/energy/Oil_Gas/record_of_decision.html.

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	immediate area before it might be appropriate to lease these parcels. Id. The Price EA does not explain what development has taken place in the immediate vicinity of these five parcels that would now make leasing appropriate.	Appendix A remain consistent with those of the West Tavaputs ROD, including those for air quality, cultural resources and BLM natural areas, and it's associated programmatic agreement. Lease notices UT-LN-96 (Air Quality) and UT-LN-97 (West Tavaputs) were also included to notify a lease purchaser of requirements laid out in the West Tavaputs ROD. Specifically, the West Tavaputs ROD (pages 30 and 35) states that through development and implementation of the programmatic agreement, the Advisory Council on Historic Preservation and the Utah State Historic Preservation Officer have agreed that the BLM fulfilled its statutory obligations under Section 106 of the National Historic Preservation Act. Under the Agency Preferred Alternative, the BLM addressed how effective the stipulations would be within the project area (including the area of the subject leases) and described the residual effects including mitigation measures. The programmatic agreement was carried forward as a COA under the Selected Alternative. Lastly, the signing of this programmatic agreement and its implementation concluded the Section 106 process. Lease notices UT-LN-96 and UT-LN-97 were included to inform a potential purchaser that the subject parcel is within the WTP project area and that BMPs will be most likely required at the development stage. As part of the WTP EIS, two Wilderness Inventory Areas (WIA), Desolation Canyon Unit One and Jack Canyon Unit, were reviewed by interdisciplinary teams in Price in 2007. This information was considered in preparing the PFO ROD/RMP. EA sections 1.4, 3.3.5, 4.3.2.5, 4.3.3.5 and Appendix A identify the affected environment and impacts to non-WSA lands with wilderness characteristics that apply to these parcels. As part of the WO IM-2010-117 leasing process, the ID team conducted site visits to the parcels and did not find any changed circumstances. Appendix M of the PFO Proposed RMP/Final EIS (page M-4) documents that in addition to the increased drilling activity, there

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		remains significant interest in leasing within this area as evidenced by the recent oil and gas lease sale results. It also concludes that that future exploration and development are most likely to occur on the Wasatch (Emery/Book Cliffs CBNG Plays) and Tavaputs Plateau (page M-6). There are several existing leases that surround, UT1111-020, UT1111-021 and UT1111-022. A producing gas field occurs between parcels UT1111-020 and UT1111-021; therefore BLM believes these parcels are a logical progression of development of oil and gas in the area. There is a major road that is located along the western portion of UT1111-021 allowing for connectivity with the rest of the field and industry is looking to expand this direction. Expansion this direction was also planned for in the West Tavaputs EIS.
15	Parcels UT1111-11, UT1111-17, UT1111-18, UT1111-19, UT1111-20, and UT1111-22 are all located inside of areas identified by the BLM as containing wilderness characteristics. [Vernal EA at 21; Price EA at 28.] Secretarial Order 3310; Department of Defense and Full-Year Continuing Appropriations Act (2011, Pub. L. No. 112- 010); and 'Wild Lands' Memo. (from Ken Salazar, Secretary of the Interior, to Bob Abbey), each establish Departmental or Bureau policy and recognize BLM's duty to maintain and use current inventory of lands with wilderness characteristics when making management decisions. The BLM should not offer leases 17-22 because it would be contrary to the policy of Secretarial Order 3310. Furthermore, the Secretary of the Interior's June 1, 2011, memorandum affirms BLM's obligation to inventory and "consider" wilderness characteristics "when making project-level decisions." Here, BLM has already determined that these six parcels contain wilderness characteristics. Consequently, it must now fully "consider" those characteristics while planning for the November lease sale. The [Vernal and] Price EA[s] do not fully consider these	The WO IM-2011-154, Requirement to Conduct and Maintain Inventory Information for Wilderness Characteristics and to Consider Lands with Wilderness Characteristics in Land Use Plans, dated July 25, 2011, directs offices to continue to conduct and maintain inventories regarding the presence or absence of wilderness characteristics, and to consider identified lands with wilderness characteristics in land use plans and when analyzing projects under the NEPA. BLM agrees that it is obligated to comply with FLPMA sections 201 and 202 and follow Departmental or Bureau policy. As stated, the BLM relied on wilderness characteristic inventories while preparing the 2008 PFO ROD/RMP. The methods utilized by the BLM at that time also remain consistent with requirements outlined in WO IM-2011-154. In EA section 3.3.5, BLM describes the use of its 1999 lands with wilderness characteristics inventory. BLM fully considered and documented the extent to which the value and use of lands with wilderness characteristics would be foregone when it made its decision not to manage the Jack Canyon Unit and the Desolation Canyon Unit One as BLM natural areas in the PFO ROD/RMP.

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	impacts. In order to fully "consider" wilderness characteristics in the context of this lease sale, the Secretary's Memorandum requires the BLM to develop and evaluate a leasing alternative that fully protects lands with wilderness characteristics, either through parcel deferrals or NSO stipulations. Such an alternative would comply with a key provision of IM 2010-117, which requires BLM to evaluate lease sale alternatives that "address unresolved resource conflicts." In response to this requirement of the IM, BLM has consistently included alternatives in lease sale EAs that protect wilderness characteristics, even in lease sale EAs that post-date the congressional funding limitation on implementing the Wild Lands Policy. For example, in Colorado the proposed action for the White River Field Office's August 2011 Oil and Gas Lease Sale EA, BLM deferred five parcels in order to update its wilderness inventory and protect "primitive recreation opportunities." BLM should follow suit for the November 2011 lease sale and evaluate an alternative that protects the wilderness characteristics of the preliminary sale parcels.	The impacts of this proposed action on non-WSA lands with wilderness characteristics are fully considered within the EA at sections 4.3.1.5, 4.3.2.5 and 4.3.3.5. BLM Utah notes that in their Notice of Addendum No. 1, the Colorado State Office BLM did defer their subject parcels to allow time for further resource analysis. The unsigned FONSI states that all of parcel 6005 and portions of parcels 6003, 6004, 6006, and 6007 are deferred due to concerns regarding primitive recreation opportunities, not a lack of wilderness character inventory. Colorado BLM is currently in the planning process and has elected to defer leasing of their subject parcels while they compile and analyze level of inventory information that Utah BLM already has through the 2008 PFO Proposed RMP/Final EIS. The BLM has fully considered managing 937,440 acres to protect, preserve, and maintain their wilderness characteristics within Alternative E, Proposed RMP/Final EIS. This information is summarized at page 14 of the PFO ROD/RMP. Specifically, BLM analyzed mineral leasing, including NSO, with the following categories (page 2-8, PFO Proposed RMP/FEIS): • 0 acres open to oil and gas leasing subject to the standard terms and conditions of the lease form • 870,000 acres or 34 percent open to oil and gas leasing subject to minor constraints (timing limitations, CSU, lease notices) • 130,000 acres or 6 percent open to oil and gas leasing subject to major constraints (NSO) • 1,490,000 acres or 60 percent unavailable to leasing. Under Section 201 and 201 of FLPMA, BLM is directed to conduct and maintain current inventories of public lands and the resources there-in; including wilderness characteristics. Data from these inventories are then used in resource analysis during land use plan revisions. Under this alternative, these acres were unavailable to mineral leasing and development, rights-of-way, woodcutting, and other

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		surface disturbing activities. Management of non-WSA lands to preserve their wilderness characteristics precluded potentially beneficial actions such as fuels and vegetation treatments and other healthy lands initiatives, wildlife and range improvements, and the construction of recreation facilities. Many of the areas managed to protect wilderness characteristics in Alternative E had conflicts with high development potential areas for oil and gas. Some of this acreage was also currently leased for oil and gas and coal, thereby making it impractical to protect the wilderness characteristic values. BLM found that management of all the non-WSA lands with wilderness characteristics in Alternative E as overly restrictive on other resources and uses of the public lands and did not meet the intent of Energy Policy and Conservation Act (EPCA). The EPCA provides policy directing BLM to minimize impediments to oil and gas leasing and development, and this alternative does not meet that objective. Even though portions of the parcels occur within the Jack Canyon and Desolation Canyon One units, wilderness has been reviewed most recently in the WTP EIS and that information was included into the ROD/RMP. Decisions were made off of those inventories. There has not been any change in circumstances to warrant the need to revisit those decisions made in the PFO ROD/RMP.
16	BLM cannot proceed with reoffering parcels from the December 2008 lease sale. The BLM acknowledges that a number of parcels under consideration, five in the Price Field Office (parcels UT1111-17, UT1111-18, UT1111-19, UT1111-20, and UT1111-22), were originally offered in December 2008. These parcels were the subject of a temporary restraining order issued by the U.S. District Court for the District of Columbia on January 17, 2009. In preventing the issuance of these parcels, Judge Urbina explicitly found that the plaintiff conservation groups were likely to succeed on the merits of their case. Id. Most important for this lease sale, the court found that the plaintiffs had made this showing with respect to violation of NEPA, based on BLM's failure to conduct quantitative air quality analysis. Id. "By not engaging in	As noted by the commentor, Appendix A, parcels 017, 018, 019, 020, 021 and 022 each contained a footnote "*" whereby, it was stated after the description of parcel 022, that these "parcels will be offered at the lease sale only if they are no longer subject to pending litigation." To avoid unnecessary confusion, the footnote was prominently added below each parcel (017, 018, 019, 020, 021 and 022). As stated in Section 5.3.2, BLM cannot respond to ongoing litigation comments. Judge Urbina ordered the BLM to complete new analysis. This EA is that new analysis and will be used as the basis for the BLM's subsequent decision on the November 2011 lease sale. The decision before BLM is not based on the determination of NEPA

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	quantitative ozone dispersion modeling, the plaintiffs' [sic] point out that BLM is unable to assess the concentration of pollution in the air and therefore cannot adequately measure those pollutants which are expressed in ambient concentrations." Id. at *3. Specifically, the court held that the NEPA analysis contained in the environmental impact statements prepared as part of the subject RMPs did not sufficiently address air quality impacts, stating: "BLM cannot rely on EISs that lack air pollution and ozone level statistics." Id. The BLM has not prepared quantitative air modeling that would support the offering of these same parcels as part of the November 2011 lease sale. See supra. Further, the case challenging the underlying RMPs is still pending in federal district court. BLM cannot legally proceed with selling parcels that were previously found inadequate by a court ruling. Further, in order to proceed with other parcels based on these same RMPs (and their EISs), BLM must fully account for quantitative air quality modeling. These parcels are also part of separate, ongoing litigation related to the Secretary's authority to withdraw his previous offer to lease. See Questar Exploration v. Salazar, Case No. 11-4057 (10th Cir. 2011); Impact Energy Resources, LLC v. Salazar, Case No. 11-4043 (10th Cir. 2011). Because of this pending litigation as well as the litigation related to the Price RMP, we support BLM's commitment to not offer parcels UT1111-17, UT1111-18, UT1111-19, UT1111-20, and UT1111-22 for lease until "they are no longer subject to pending litigation." Price EA at 47-52.	adequacy completed for the December 2008 lease sale. Refer also to comment #4 response.
17	BLM must comply with the requirements of IM 2010-117. In addition to directing BLM to fully analyze an alternative that would protect wilderness characteristics, see supra, IM 2010-117 directs BLM to "take into account" several "other considerations" during its evaluation of lease sale parcels, including (1) whether non-mineral resource values outweigh mineral development values in "undeveloped areas;" and (2) whether leasing will cause	Where BLM natural areas were not selected (EA Section 3.3.5, Jack Canyon Unit and Desolation Canyon Unit One), BLM found that certain inventoried areas contained other important resources and uses that would conflict with protection, preservation or maintenance of wilderness characteristics (PFO ROD/RMP, page 35). BLM fully considered their value in light of other resources and uses including the presence of existing leases that would

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	"unacceptable impacts" on units of the National Park System. Because several of the sale parcels are located in "undeveloped areas" and/or are likely to have impacts on visibility in national parks, BLM must evaluate both of these considerations in the EA. In doing so, the BLM should follow the example of Wyoming's High Desert District Office, which recently included a separate discussion for the IM's "other considerations" in a lease sale EA.9. When evaluating lease parcels, BLM should determine whether "non-mineral resource values are greater than potential mineral development values" in "undeveloped areas." The six parcels, UT1111-11, UT1111-17, UT1111-18, UT1111-19, UT1111-20, and UT1111-22 at issue here, are located in undeveloped areas. Because these areas also have considerable "non-mineral resource values," such as inventoried wilderness characteristics and important recreation and scenic values, BLM must evaluate and determine whether they are outweighed by potential mineral development values. The BLM has not performed this weighing.	preclude management for wilderness characteristics. Likewise, BLM addressed recreation demands by providing SRMAs. As identified in Attachment C, this area is within the ERMA and BLM finds the associated dispersed recreation opportunity to adequately incorporate public demands. Therefore, BLM has complied with the spirit and intent of WO IM-2010-117. The Utah BLM coordinated with the NPS for the November 2011 lease sale including the parcels in question and the NPS did not provide any comments or have any concerns with the parcels being placed on the lease list. Also there are not any National Parks near any of the parcels mentioned.