United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Lewistown Field Office
920 North East Main Street
Lewistown, Montana 59457-4079
www.blm.gov/mt

In Reply Refer To:

3100

May 21, 2012

Dear Reader:

The Bureau of Land Management (BLM) Lewistown Field Office has prepared an environmental assessment (EA) to analyze the potential effects from offering four nominated lease parcels for competitive oil and gas leasing in a sale tentatively scheduled to occur on October 23, 2012.

This EA with an unsigned Finding of No Significant Impact (FONSI) are available for a 30-day public comment period. Written comments must be postmarked by June 19, 2012 to be considered. Comments may be submitted using one of the following methods:

Email: BLM_MT_LewistownFO_Lease_EA@blm.gov

Mail: Lewistown Field Office
Attn: Abel Guevara
920 NE Main
Lewistown, Montana 59457

Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – will be available for public review. If you wish to withhold personal identifying information from public review or disclosure under the Freedom of Information Act (FOIA), you must clearly state, in the first line of your written comment, "CONFIDENTIALITY REQUESTED." While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from organizations, from businesses, and from individuals identifying themselves as representatives of organizations or businesses, will be available for public review.

Upon review and consideration of public comments, the EA will be updated as needed. Based on our analysis, parcels recommended for leasing in our assessment would be included as part of a competitive oil and gas lease sale tentatively scheduled to occur on October 23, 2012.

Prior to issuance of any leases, the Decision Record and FONSI will be finalized and posted for public review on our BLM website. Please refer to the Montana/Dakotas BLM website at http://blm.gov/57jd. From this home page, go to the heading titled "Frequently Requested," where you will find a number of links to information about our oil and gas program. Current and updated information about our EAs, Lease Sale Notices, and corresponding information can be found on the link titled "Oil and Gas Lease Sale Information." Once there, click on 2012 and search for the October 23, 2012 lease sale to review the Lewistown Field Office EA and the parcel list with recommended stipulations.

If you have any questions or would like more information about lease sale notices or the issuance of the EA, Decision Record and FONSI, please contact Abel Guevara at 406-538-1977 or me at 406-538-1918.

Sincerely,

Geoff Beyersdorf
Field Manager

United States Department of the Interior
Bureau of Land Management

Environmental Assessment DOI-BLM-MT-L060-2012-0041-EA
May 21, 2012

Project Title: Oil and Gas Lease Parcel Sale,
October 23, 2012

Location: Central Montana District, Lewistown Field Office (See Appendix A for list of lease parcels by number and legal description and Maps 3 and 4)

Applicant/Address:

Lewistown Field Office
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Lewistown, MT 59457

Project Contact:

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Lewistown Field Office Oil and Gas Lease Sale EA
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Lewistown Field Office Oil and Gas Lease Sale EA
DOI-BLM-MT-L060-2012-0041-EA

1.0 PURPOSE AND NEED

1.1 Introduction

It is the policy of the Bureau of Land Management (BLM) to make mineral resources available for use and to encourage development of mineral resources to meet national, regional, and local needs. This policy is based on various laws, including the Mineral Leasing Act of 1920 and the Federal Land Policy and Management Act of 1976. The Federal Onshore Oil and Gas Leasing Reform Act of 1987 Sec. 5102(a)(b)(1)(A) directs the BLM to conduct quarterly oil and gas lease sales in each state whenever eligible lands are available for leasing. The Montana State Office conducts mineral estate lease auctions for lands managed by the federal government, whether the surface is managed by the Department of the Interior (BLM or Bureau of Reclamation), United States Forest Service, or other departments and agencies. In some cases the BLM holds subsurface mineral rights on split estate lands where the surface estate is owned by another party, other than the federal government. Federal mineral leases can be sold on such lands as well. The Montana State Office has historically conducted five lease sales per year.

Members of the public file Expressions of Interest (EOI) to nominate parcels for leasing by the BLM. From these EOIs, the Montana State Office provides draft parcel lists to the appropriate field offices for review. BLM field offices then review legal descriptions of nominated parcels to determine: if they are in areas open to leasing; if new information has come to light which might change previous analyses conducted during the land use planning process; if there are special resource conditions of which potential bidders should be made aware; and which stipulations should be identified and included as part of a lease. Ultimately, all of the lands in proposed lease sales are nominated by private individuals, companies, or the BLM, and therefore represent areas of high interest.

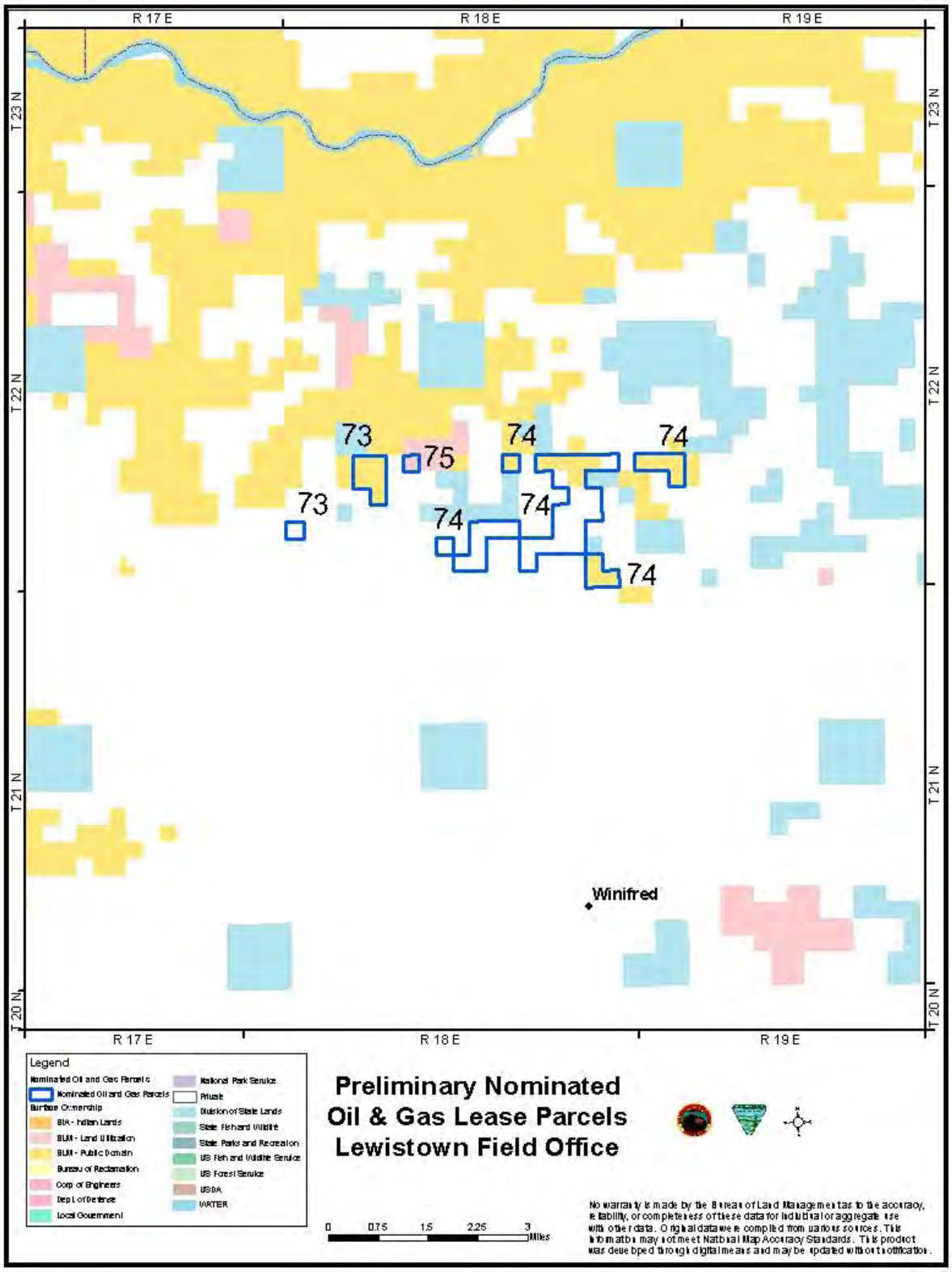
This environmental assessment (EA) has been prepared to disclose and analyze the potential environmental consequences from leasing all 21 nominated lease parcels located in the Lewistown Field Office (LFO), to be included as part of a competitive oil and gas lease sale tentatively scheduled to occur in October 2012. Of the 21 parcels received by the Lewistown Field office from the public, 1 parcel (partial) is located in or adjacent to, preliminary general habitat for Greater Sage-Grouse. These areas are designated as Greater Sage-Grouse core areas by Montana Fish, Wildlife and Parks. Additonally 19 parcels (17 whole, 2 partial) are located in or adjacent to Sprague's Pipit habitat. Table 1 details which parcels that contain Greater Sage-Grouse and Sprague's Pipit habitat. Land management decisions, including leasing for oil and gas development are currently under consideration until the completetion of a Lewistown Field Office Resource Management Plan revision. Further consideration of the remaining 20 parcels nominations is contained within section 2.4 of this document.

The analysis area includes the 21 nominated parcels in Fergus (Map1), Pondera and Teton counties (Map 2).

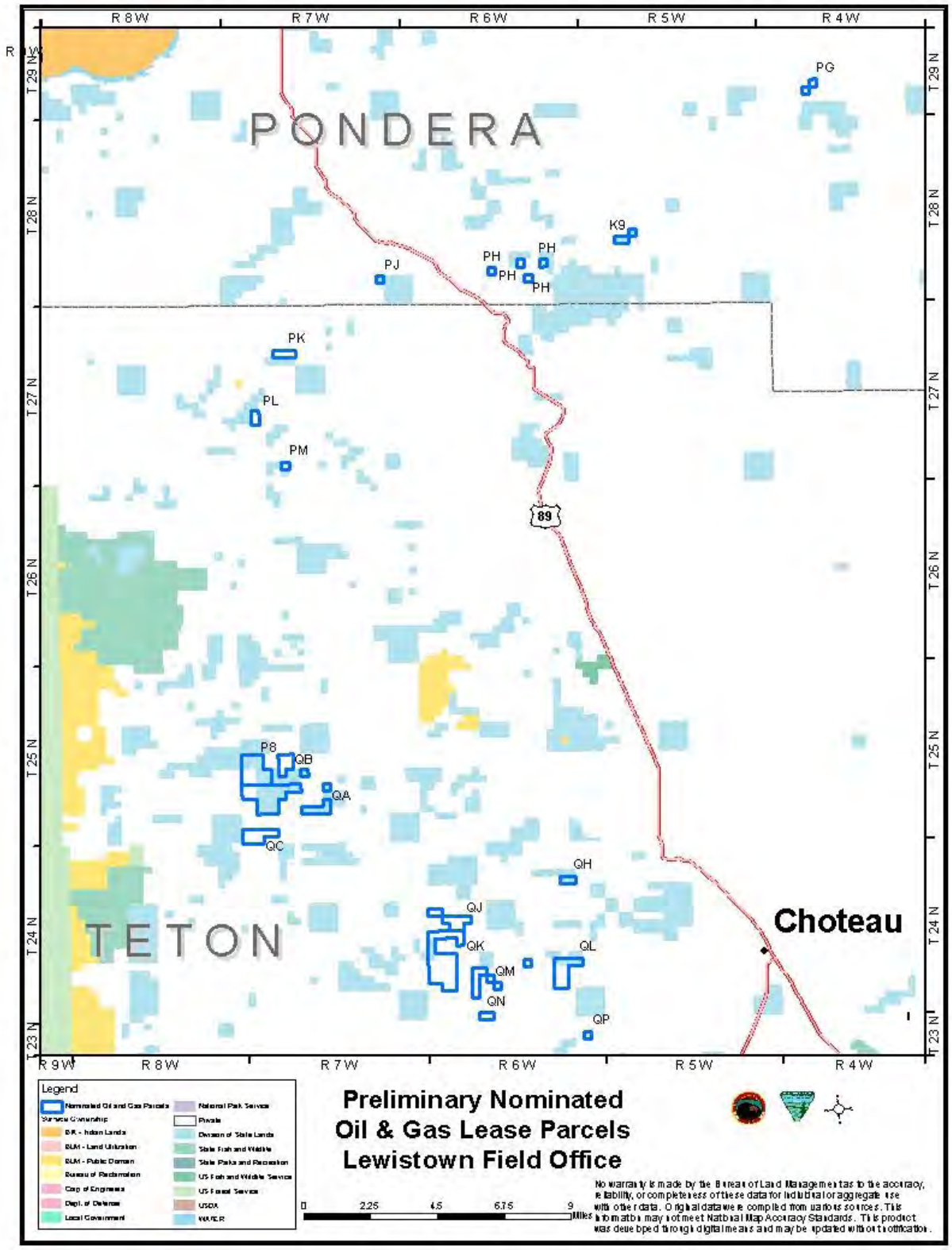
Table 1. Parcels that contain habitat for Greater Sage-Grouse and Sprague's Pipit.

Nominated Parcels	County	Greater Sage-Grouse Habitat	Sprague's Pipit Habitat
MTM 97300-73	Fergus		✓
MTM 97300-74	Fergus	✓	
MTM 97300-75	Fergus		
MTM 97300-K9	Pondera		✓
MTM 97300-PG	Pondera		✓
MTM 97300-PH	Pondera		✓
MTM 97300-PJ	Pondera		✓
MTM 97300-P8	Teton		✓
MTM 97300-PK	Teton		✓
MTM 97300-PL	Teton		✓
MTM 97300-PM	Teton		✓
MTM 97300-QA	Teton		✓
MTM 97300-QB	Teton		✓
MTM 97300-QC	Teton		✓
MTM 97300-QH	Teton		✓
MTM 97300-QJ	Teton		✓
MTM 97300-QK	Teton		✓
MTM 97300-QL	Teton		✓
MTM 97300-QM	Teton		✓
MTM 97300-QN	Teton		✓
MTM 97300-QP	Teton		✓

Map 1. Preliminary Nominated Parcels in Fergus County.



Map 2. Preliminary Nominated Parcels in Pondera and Teton counties.



1.2 Purpose and Need for the Proposed Action

The purpose of offering parcels for competitive oil and gas leasing is to provide opportunities for private individuals or companies to explore for and develop federal oil and gas resources after receipt of necessary approvals and to sell the oil and gas in public markets.

This action is needed to help meet the energy needs of the people of the United States. By conducting lease sales, the BLM provides for the potential increase of energy reserves for the U.S., a steady source of income, and at the same time meets the requirement identified in the Energy Policy Act, Sec. 362(2), Federal Oil and Gas Leasing Reform Act of 1987, and the Mineral Leasing Act of 1920, Sec. 17.

The decision to be made is whether to sell and issue oil and gas leases on the lease parcels identified, and, if so, identify stipulations that would be included with specific lease parcels at the time of lease sale.

1.3 Conformance with Land Use Plan(s)

This EA is tiered to the information and analysis; and conforms to the decisions contained in the Fergus Management Framework Plan (MFP) (approved January 1978), and the Lewistown District Oil & Gas Environmental Assessment of the BLM Leasing Program (approved September 1981) and the Headwaters Resource Management Plan as approved in 1984. A more complete description of activities and impacts related to oil and gas leasing, development, and production, etc… can be found in:

> Fergus MFP: M-2.1 The BLM will retain and assure the continued availability of public land and privately owned land having oil and gas reserved to the United States for oil and gas leasing and exploration.
>
> Lewistown District Oil & Gas Environmental Assessment of BLM Leasing Program, approved September 1981: Leasing federal minerals administered by the Bureau of Land Management, Lewistown Field Office for oil and gas exploration and development is specifically analyzed in the Lewistown District Oil & Gas Environmental Assessment of BLM Leasing Program, approved September 1981.
> Pertinent information in the EA: Chapter 1, Proposed Action, pages 1-26.
>
> Headwaters Resource Management Plan: As a general rule, public land outside the Rocky Mountain Front is available for oil and gas leasing. In many areas, oil and gas leases will be issued with only standard stipulations attached (Final Headwaters RMP/EIS, page 13).

The Headwaters Resource Management Plan was approved in 1984 to guide management of all resources on BLM administered public lands that are now within the Lewistown Field Office (LFO) in portions of Cascade, Lewis and Clark, Meagher, Pondera and Teton counties excluding lands now withdrawn from oil and gas leasing and development by section 403 (a) of Public Law 109-432 (January 8, 2007). The nominated parcel that is located within Pondera county that falls under the authority of the Headwaters RMP is located within Management Unit 7. Under the

final decision no special stipulations are required for oil and gas leasing within Management Unit 7.

Headwaters RMP, approved July 1984: Leasing federal minerals administerd by Lewistown Field Office of the Bureau of Land Management for oil and gas exploration and development within the portions of Cascade, Lewis and Clark, Meagher, Pondera and Teton counties excluding lands withdrawn from oil and gas leasing and development by section 403 (a) of Public Law 109-432 (January 8, 2007) is allowed: Chap 2, Management Guidance Common to All Alternatives, pages 12 and 13, Management Units map and appendix B.

Analysis of the 21nominated parcels is documented in this EA, and was conducted by Lewistown Field Office resource specialists who relied on professional knowledge of the areas involved, review of current databases and file information, and site visits to ensure that appropriate stipulations were recommended for a specific parcel. Analysis may have also identified the need to defer entire or partial parcels from leasing pending further environmental review.

In 1988, the BLM suspended lease issuance on lands that required special stipulations to protect wildlife resources until a new resource management plan was completed. This was a result of a protest on issuance of oil and gas leases by the BLM in Montana. In the early 1990s, the BLM prepared the Judith-Valley-Phillips RMP to address this protest along with other resource issues. However, a subsequent protest to the 1992 Judith-Valley-Phillips RMP warranted a supplement to address an alternative for oil and gas leasing that would avoid leasing valuable wildlife habitat. The BLM will continue to defer leasing federal minerals that would require special wildlife stipulations until a new RMP is completed.

At the time of this review it is unknown whether a particular parcel will be sold and a lease issued. It is also unknown when, where, or if future well sites, roads, and facilities might be proposed on parcels that are sold. Analysis of potential activities and impacts was based on potential well densities discerned from the Reasonably Foreseeable Development (RFD) Scenario developed for the Lewistown Field Office. Detailed site-specific analysis and mitigation of activities associated with any particular lease would occur when a lease holder submits an application for permit to drill (APD). A more complete description of mitigation, BMPs, and conditions of approval related to oil and gas lease activities can be found in the Headwaters RMP pages 168-213, the Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development-The Gold Book, and online at http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices. html.

Offering the parcels for sale and issuing leases would not be in conflict with any local, county, or state laws or plans.

1.4 Public Scoping and Identification of Issues

Public scoping for this project was conducted through a 15-day scoping period advertised on the BLM Montana State Office website and posted on the Lewistown Field Office website National Environmental Policy Act (NEPA) notification log. Scoping was initiated March 26, 2012;

comments were received through April 9, 2012. No comments were received during the scoping period. One letter and one email was received after the scoping period. All issues in the letter and email were addressed in the EA since all parcels are being deferred.

The BLM coordinates with Montana Fish, Wildlife, and Parks (MFWP), and the United States Fish and Wildlife Service (USFWS) to manage wildlife habitat because BLM management decisions can affect wildlife populations which depend on the habitat. The BLM manages habitat on BLM lands, while MFWP is responsible for managing wildlife species populations. The USFWS also manages some wildlife populations but only those federal trust species managed under mandates such as the Endangered Species Act, Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act. Managing wildlife is factored into project planning at multiple scales and is to be implemented early in the planning process.

Coordination with MFWP was conducted for the 21 lease parcels being reviewed and in the completion of this EA in order to prepare the analysis, identify protective measures, and apply stipulations and lease notices associated with these parcels being analyzed. A letter was sent to the USFWS during the 15-day scoping period requesting comments on the 21 parcels being reviewed. No comments were received.

The BLM consults with Native Americans under Section 106 of the National Historic Preservation Act. The BLM sent letters (March 26, 2012) to tribes in Montana at the beginning of the 15 day scoping period informing them of the potential for the 21 parcels nominated to be leased and inviting them to submit issues and concerns BLM should consider in the environmental analysis. Letters were sent to the Tribal Presidents and Tribal Historic Preservation Office (THPO) or other cultural contacts for the Blackfeet Nation, Rocky Boy (Chippewa Cree), Confederated Salish Kootenai Tribe, Crow Tribe of Montana, Ft. Belknap Indian Community (Assiniboine, Gros Ventre), Ft. Peck Tribes (Sioux and Assiniboine) and Northern Cheyenne Tribe. The BLM will send a second letter to the tribes informing them about the 30 day public comment period for the EA and soliciting any information BLM should consider before making a decision whether to offer any or all of the 21 parcels for sale. On May 2, 2012, the LFO Manager and Archaeologist met with Salish-Kootenai Tribal Preservation staff. The Salish-Kootenai had no comment on this proposed lease action.

2.0 DESCRIPTION OF ALTERNATIVES, INCLUDING PROPOSED ACTION

2.1 Alternative A - No Action

For EAs on externally initiated Proposed Actions, the No Action Alternative generally means that the Proposed Action would not take place. In the case of a lease sale, this would mean that all expressions of interest to lease (parcel nominations) would be denied or rejected.

The No Action Alternative would exclude all 4 parcels within the Lewistown Field Office from the lease sale. Surface management would remain the same and ongoing oil and gas development would continue on surrounding federal, private, and state leases.

2.2 Alternative B – BLM Preferred Alternative

The Proposed Action Alternative would be to offer 4 parcels (1 whole, 3 partial) of federal minerals for oil and gas leasing, covering approximately 1,442 acres administered by the Lewistown Field Office, in conformance with the existing land use planning decisions. The parcels are located in Fergus County, MT, and Pondera County, MT. Parcel number, size, and detailed locations along with associated stipulations are listed in Appendix A. Map 3 & 4 indicate the detailed location of each parcel.

Of the approximately 1,442 acres of federal mineral estate considered in this EA, approximately 482 acres (1 whole 3 partial parcels) are managed by the BLM. The remaining 960 acres (3 partial parcels) are split estate (private surface with federal mineral estate).

Project Area Description

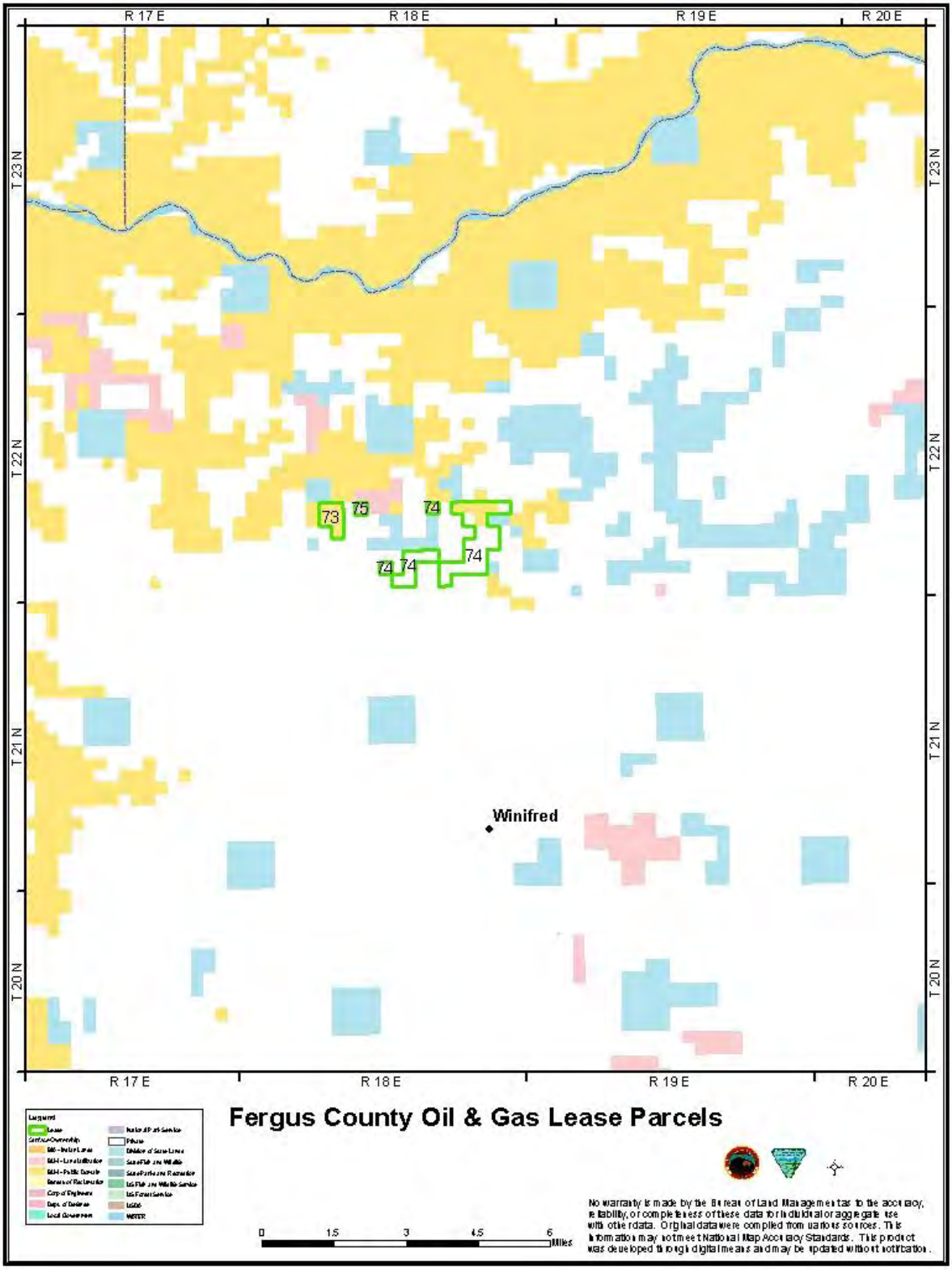
Project area description for offered parcels: Parcels 73, 74 and 75 are located in northern Fergus County approximately 6 miles north of Winifred, MT. Parcels 73 and 74 are primarily breaks habitat characterized by steep highly erodible slopes with a high percentage of bare ground. The upper portions of the draws become more gently sloped and transition from ponderosa pine in the bottoms to sagebrush habitats on the benches. Agriculture and surrounding breaks have highly fragmented the sagebrush steppe habitat. Section 3.5 contains a more detailed vegetation description. Dog Creek intersects most of parcel 74.

Parcel 75 is within a dense, mature Wyoming sagebrush stand (approximately two feet tall) with a continuous crested wheatgrass understory. It is just north (less than 1 mile) of the current sage-grouse distribution line. A small reservoir is in the northwest corner of the parcel.

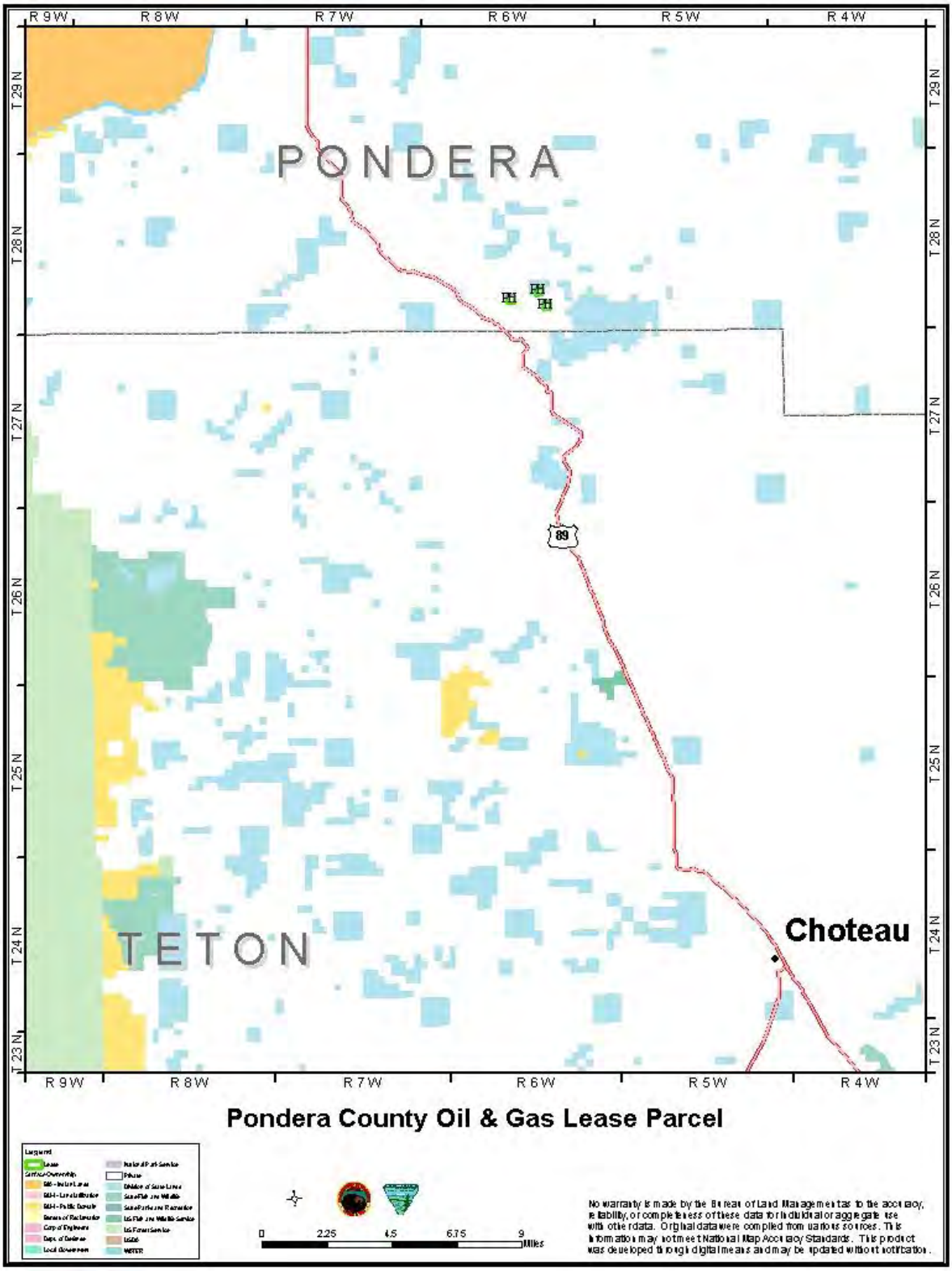
Parcel PH is located in southern Pondera county approximately 25 miles NW of Choteau, MT. Agriculture fields are within each of the three tracts, with some native grassland habitats occurring in the eastern and western tracts. The western tract is bisected by a county road and the South Fork of the Dry Fork of the Marias River.

All offered parcels can be accessed currently by either two-track, farm road, or improved road in the case of PH.

Map 3. Alternative B – Fergus County parcels.



Map 4. Alternative B – Pondera County parcels.



2.3 Alternatives Considered, but eliminated from further analysis

In 1988, the BLM suspended lease issuance on lands that required special stipulations to protect wildlife resources until a new resource management plan was completed. This was a result of a protest on issuance of oil and gas leases by the BLM in Montana. In the early 1990s, the BLM prepared the Judith-Valley-Phillips RMP to address this protest along with other resource issues. However, a subsequent protest to the 1992 Judith-Valley-Phillips RMP warranted a supplement to address an alternative for oil and gas leasing that would avoid leasing valuable wildlife habitat. The BLM will continue to defer leasing federal minerals that would require special wildlife stipulations until a new RMP is completed.

Analysis of the 21 nominated parcels resulted in offering only 4 parcels for leasing. The following is a rationale for deferring the remaining parcels based on the protest decision (IM MT 89-108).

A total of 20 lease parcels (17 whole, 3 partial), containing approximately 5,230 acres of federal minerals would be deferred. One lease parcel (partial, 280 federal mineral acres) has been found to be adjacent to preliminary priority sage-grouse habitat. Greater sage-grouse conservation areas are being considered in the Field Office's on-going planning efforts; therefore, 1 lease parcel would be deferred at this time pending further review and analysis.

Nineteen lease parcels (17 partial, 2 partial; approximately 4,950 federal mineral acres) have been found to contain habitat for Sprague's Pipit. Therefore, all 19 lease parcels would be deferred at this time pending further review and analysis until a new RMP is completed. Table 2 details the parcels that are being deferred. The 2012 LFO Lease Sale Briefing white paper contains detailed rationale for deferring each parcel.

For split-estate lease parcels, the BLM provided courtesy notification to private landowners that the federal oil and gas estate under their surface would be included in this lease sale. In the event of activity on such split-estate lease parcels, the lessee and/or operator would be responsible for adhering to BLM requirements as well as reaching an agreement with the private surface landowners regarding access, surface disturbance and reclamation.

The terms and conditions of the standard federal lease and federal regulations would apply to each parcel offered for sale. Stipulations shown in Appendix A would be included with identified parcels offered for sale. Standard operating procedures for oil and gas operations on federal leases include measures to protect the environment and resources such as groundwater, air, wildlife, historical and prehistorical concerns. Lease stipulations (as required by 43 CFR 3131.3) would be attached to the parcels to address site-specific concerns or new information not previously identified in the land use planning process. Standard operating procedures, best management practices (BMPs), conditions of approval (COAs) and lease stipulations can change over time to meet RMP objectives, resource needs or land use compatibility.

Federal oil and gas leases would be issued for a 10-year period and would remain valid for as long thereafter as oil or gas is produced in paying quantities, required payments are made and lease operations are conducted in compliance with regulations and approved permits. If a lessee fails to produce oil and gas by the end of the initial 10 year period, does not make annual rental

payments, does not comply with the terms and conditions of the lease, or relinquishes the lease ownership of the minerals leased would revert back to the federal government, and the lease could be resold. Drilling of wells on a lease would not be permitted until the lease owner or operator secures approval of a drilling permit and a surface use plan specified at 43 CFR 3162.

Table 2. Deferred parcels.

Deferred Parcels	**County**	**Total Acres**	**Greater Sage-Grouse Habitat**	**Sprague's Pipit Habitat**
MTM 97300-73*	Fergus	44		✓
MTM 97300-74*	Fergus	280	✓	
MTM 97300-K9	Pondera	120		✓
MTM 97300-PG	Pondera	80		✓
MTM 97300-PH*	Pondera	40		✓
MTM 97300-PJ	Pondera	40		✓
MTM 97300-P8	Teton	795		✓
MTM 97300-PK	Teton	120		✓
MTM 97300-PL	Teton	80		✓
MTM 97300-PM	Teton	40		✓
MTM 97300-QA	Teton	240		✓
MTM 97300-QB	Teton	798		✓
MTM 97300-QC	Teton	320		✓
MTM 97300-QH	Teton	80		✓
MTM 97300-QJ	Teton	313		✓
MTM 97300-QK	Teton	1000		✓
MTM 97300-QL	Teton	440		✓
MTM 97300-QM	Teton	280		✓
MTM 97300-QN	Teton	80		✓
MTM 97300-QP	Teton	40		✓
		5230 Total Acres Deferred	280 Acres Deferred	4,950 Acres Deferred

*Partial portion of parcel is offered for leasing

3.0 AFFECTED ENVIRONMENT

3.1 Introduction

This chapter describes the affected existing environment (i.e., the physical, biological, social, and economic values and resources) within the analysis area, which includes the 4 nominated parcels in Fergus and Pondera counties (Map 3 & 4), that could be affected by implementation of the alternatives described in Chapter 2.

The existing environment is described by the different resources found throughout the analysis area. Within each resource description, lease parcels containing the resource will be listed and analyzed further in Chapter 4. If the lease parcel does not contain the resource, then the lease parcel will be omitted from the description of that specific resource.

Unless otherwise stated, resource analysis in this chapter, and Chapter 4, will be described in approximate acres due to the scaling and precision parameters associated with the Geographic Information System (GIS), in addition to being referenced to a different land survey.

Only those aspects of the affected environment that are potentially impacted by this project are described in detail. The following aspects of the existing environment were determined to be not present or not potentially impacted by this project: air resources, air quality, climate change, solid minerals consisting of coal, locatable minerals and salable minerals, National Historic Scenic Trails; lands with wilderness characteristics, cave and karst resources, wild and scenic rivers; wilderness study areas (WSAs); hazardous wastes or solids; areas of critical environmental concern (ACECs). These resources and resource uses will not be discussed further in this EA.

3.2 Air Resources

Air resources include air quality, air quality related values (AQRVs), and climate change. As part of the planning and decision making process, BLM considers and analyzes the potential effects of BLM and BLM-authorized activities on air resources.

The Environmental Protection Agency (EPA) has the primary responsibility for regulating air quality, including seven criteria air pollutants subject to National Ambient Air Quality Standards (NAAQS). Pollutants regulated under NAAQS include carbon monoxide (CO), lead, nitrogen dioxide (NO_2), ozone, particulate matter with a diameter less than or equal to 10 microns (PM_{10}), particulate matter with a diameter less than or equal to 2.5 microns ($PM_{2.5}$), and sulfur dioxide (SO_2). Two additional pollutants, nitrogen oxides (NO_x) and volatile organic compounds (VOCs) are regulated because they form ozone in the atmosphere. Regulation of air quality is also delegated to some states. Air quality is determined by pollutant emissions and emission characteristics, atmospheric chemistry, dispersion meteorology, and terrain. AQRVs include effects on soil and water, such as sulfur and nitrogen deposition and lake acidification, and aesthetic effects, such as visibility.

Climate is the composite of generally prevailing weather conditions of a particular region throughout the year, averaged over a series of years. Climate change includes both historic and predicted climate shifts that are beyond normal weather variations.

3.2.1 Air Quality

Air quality within the analysis area is generally considered to be very good and relatively little ambient air monitoring occurs within the region. Air within the analysis area is currently monitored for CO and $PM_{2.5}$. The EPA air quality index (AQI) is an index used for reporting daily air quality (http://www.epa.gov/oar/data/geosel.html) to the public. The index tells how clean or polluted an area's air is and whether associated health effects might be a concern. When sufficient monitoring data are available, the EPA calculates the AQI for five criteria air pollutants regulated by the Clean Air Act (CAA): ground-level ozone, particulate matter, CO, SO_2, and NO_2. For each of these pollutants, EPA established NAAQS to protect public health. An AQI value of 100 generally corresponds to the primary NAAQS for the pollutant. The following terms help interpret the AQI information:

- **Good** – The AQI value is between 0 and 50. Air quality is considered satisfactory and air pollution poses little or no risk.
- **Moderate** – The AQI is between 51 and 100. Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people. For example, people who are unusually sensitive to ozone may experience respiratory symptoms.
- **Unhealthy for Sensitive Groups** – When AQI values are between 101 and 150, members of "sensitive groups" may experience health effects. These groups are likely to be affected at lower levels than the general public. For example, people with lung disease are at greater risk from exposure to ozone, while people with either lung disease or heart disease are at greater risk from exposure to particle pollution. The general public is not likely to be affected when the AQI is in this range.
- **Unhealthy** – The AQI is between 151 and 200. Everyone may begin to experience some adverse health effects, and members of the sensitive groups may experience more serious effects.
- **Very Unhealthy** – The AQI is between 201 and 300. This index level would trigger a health alert signifying that everyone may experience more serious health effects.

AQI data show that there is little risk to the general public from air quality in the analysis area (Table 3). Based on available aggregate data for Cascade County for years 2009–2011, 94 percent of the days were rated "good" and the three-year median daily AQI was 25 for monitors in the analysis area.

Table 3. EPA Air Quality Index Report (2009-2011)

County[1]	# Days in Period	# Days Rated Good or No Data	Percent of Days Rated Good or No Data	# Days Rated Moderate	# Days Rated Unhealthy for Sensitive Groups	# Days Rated Unhealthy	# Days Rated Very Unhealthy
Cascade	1,077	1,009	94%	68	0	0	0

[1]The Cascade County monitor is located in Great Falls, MT. Source: EPA Air Data website (http://www.epa.gov/airdata/ad_rep_aqi.html, accessed May 21, 2012).

The analysis area is in compliance with all NAAQS and is considered to be an attainment area.

Air resources also include visibility, which can be degraded by regional haze due in part to sulfur, nitrogen, and particulate emissions. Based on trends identified during 2005-2009, visibility has improved slightly at the UL Bend Wilderness IMPROVE monitor in Fergus County on the haziest days (20 percent worst days) and on the clearest day (20 percent best days), as shown in Figure A.

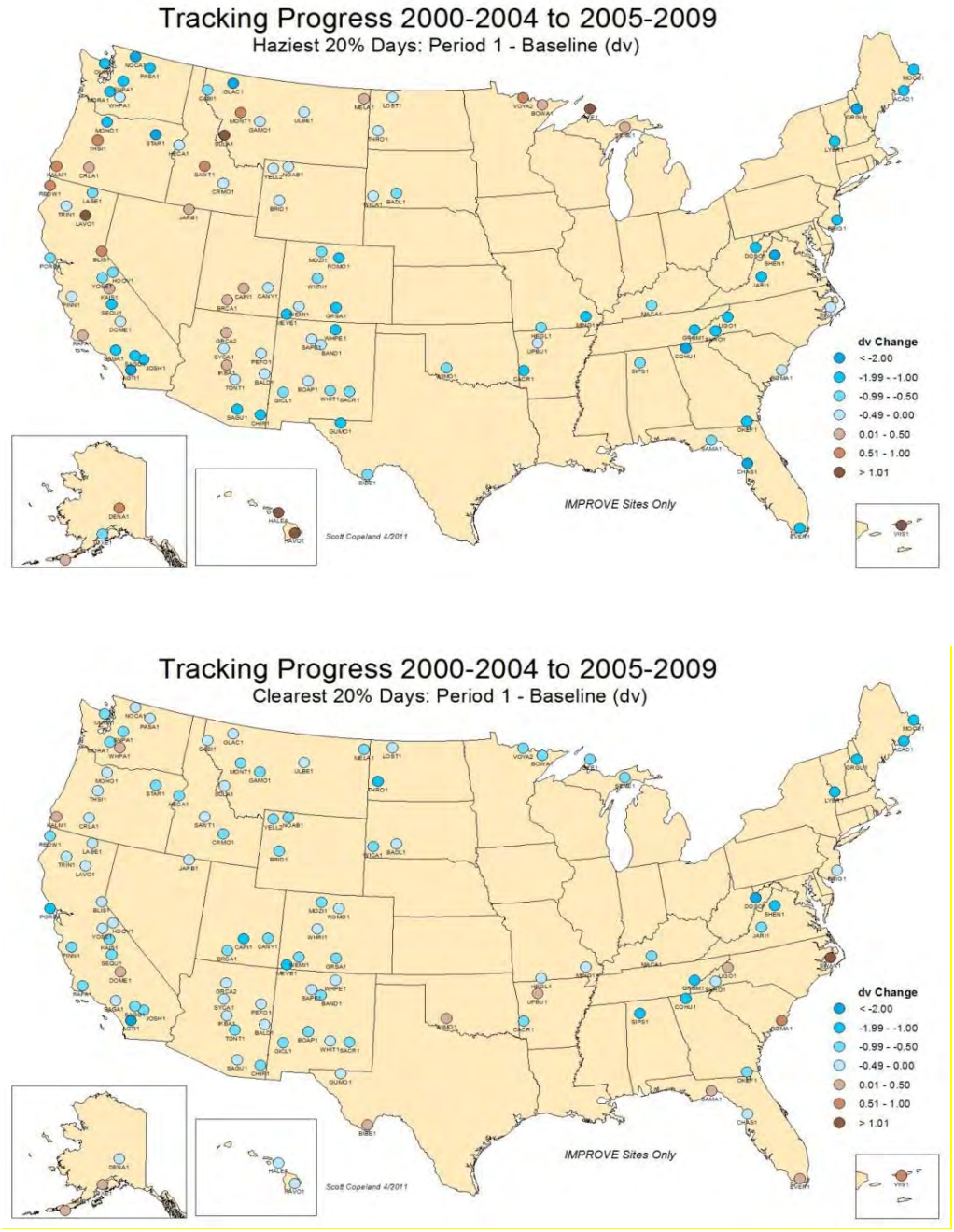


Figure A. Trends in haze index (deciview) on haziest and clearest days, 2005-2009. Source: IMPROVE 2011.

3.2.2 Climate Change

Climate change is defined by the Intergovernmental Panel on climate change (IPCC) as "a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties, and persist for an extended period, typically decades or longer. It refers to any change in climate over time, whether due to natural variability or as a result of human activity." (IPCC 2007). Climate change and climate science are discussed in detail in the climate change Supplementary Information Report for Montana, North Dakota, and South Dakota, Bureau of Land Management (Climate Change SIR 2010). This document is incorporated by reference into this EA.

The Intergovernmental Panel on climate change (Climate Change SIR 2010) states, "Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level." Global average temperature has increased approximately 1.4°F since the early 20th century (Climate Change SIR 2010). Warming has occurred on land surfaces, oceans and other water bodies, and in the troposphere (lowest layer of earth's atmosphere, up to 4-12 miles above the earth). Other indications of global climate change described by the IPCC (Climate Change SIR 2010) include:

- Rates of surface warming increased in the mid-1970s and the global land surface has been warming at about double the rate of ocean surface warming since then;
- Eleven of the last 12 years rank among the 12 warmest years on record since 1850;
- Lower-tropospheric temperatures have slightly greater warming rates than the earth's surface from 1958-2005.

As discussed and summarized in the climate change SIR, earth has a natural greenhouse effect wherein naturally occurring gases such as water vapor, CO_2, methane, and N_2O absorb and retain heat. Without the natural greenhouse effect, earth would be approximately 60°F cooler (Climate Change SIR 2010). Current ongoing global climate change is caused, in part, by the atmospheric buildup of greenhouse gases (GHGs), which may persist for decades or even centuries. Each GHG has a global warming potential that accounts for the intensity of each GHG's heat trapping effect and its longevity in the atmosphere (Climate Change SIR 2010). The buildup of GHGs such as CO_2, methane, N_2O, and halocarbons since the start of the industrial revolution has substantially increased atmospheric concentrations of these compounds compared to background levels. At such elevated concentrations, these compounds absorb more energy from the earth's surface and re-emit a larger portion of the earth's heat back to the earth rather than allowing the heat to escape into space than would be the case under more natural conditions of background GHG concentrations.

A number of activities contribute to the phenomenon of climate change, including emissions of GHGs (especially CO_2 and methane) from fossil fuel development, large wildfires, activities using combustion engines, changes to the natural carbon cycle, and changes to radiative forces and reflectivity (albedo). It is important to note that GHGs will have a sustained climatic impact over different temporal scales due to their differences in global warming potential (described above) and lifespans in the atmosphere. For example, CO_2 may last 50 to 200 years in the

atmosphere while methane has an average atmospheric life time of 12 years (Climate Change SIR 2010).

With regard to statewide GHG emissions, Montana ranks in the lowest decile when compared to all the states (http://assets.opencrs.com/rpts/RL34272_20071205.pdf, Ramseur 2007). The estimate of Montana's 2005 GHG emissions of 37 million metric tons (MMt) of gross consumption-based carbon dioxide equivalent (CO_2e) account for approximately 0.6 percent of the U.S. GHG emissions (CCS 2007).

Some information and projections of impacts beyond the project scale are becoming increasingly available. Chapter 3 of the climate change SIR describes impacts of climate change in detail at various scales, including the state scale when appropriate. The EPA identifies central Montana as part of the Great Plains region. The following summary characterizes potential changes identified by the EPA (EPA 2008) that are expected to occur at the regional scale, where the Proposed Action and its alternatives are to occur.

- The region is expected to experience warmer temperatures with less snowfall.
- Temperatures are expected to increase more in winter than in summer, more at night than in the day, and more in the mountains than at lower elevations.
- Earlier snowmelt means that peak stream flow would be earlier, weeks before the peak needs of ranchers, farmers, recreationalist, and others. In late summer, rivers, lakes, and reservoirs would be drier.
- More frequent, more severe, and possibly longer-lasting droughts are expected to occur.
- Crop and livestock production patterns could shift northward; less soil moisture due to increased evaporation may increase irrigation needs.
- Drier conditions would reduce the range and health of ponderosa and lodgepole pine forests, and increase the susceptibility to fire. Grasslands and rangelands could expand into previously forested areas.
- Ecosystems would be stressed and wildlife such as the mountain lion, black bear, long-nose sucker, marten, and bald eagle could be further stressed.

Other impacts could include:

- Increased particulate matter in the air as drier, less vegetated soils experience wind erosion.
- Shifts in vegetative communities which could threaten plant and wildlife species.
- Changes in the timing and quantity of snowmelt which could affect both aquatic species and agricultural needs.

Projected and documented broad-scale changes within ecosystems of the U.S. are summarized in the Climate Change SIR. Some key aspects include:

- Large-scale shifts have already occurred in the ranges of species and the timing of the seasons and animal migrations. These shifts are likely to continue (USGCRP 2009, as cited by Climate Change SIR 2010). Climate changes include warming temperatures throughout the year and the arrival of spring an average of 10 days to 2 weeks earlier through much of the U.S. compared to 20 years ago. Multiple bird species now migrate north earlier in the year.

- Fires, insect epidemics, disease pathogens, and invasive weed species have increased and these trends are likely to continue. Changes in timing of precipitation and earlier runoff would increase fire risks.
- Insect epidemics and the amount of damage that they may inflict have also been on the rise. The combination of higher temperatures and dry conditions have increases insect populations such as pine beetles, which have killed trees on millions of acres in western U.S. and Canada. Warmer winters allow beetles to survive the cold season, which would normally limit populations; while concurrently, drought weakens trees, making them more susceptible to mortality due to insect attack.

More specific to Montana, additional projected changes associated with climate change described in Section 3.0 of the Climate Change SIR (2010) include:

- Temperature increases in Montana are predicted to be between 3 to 5°F at the mid-21st century. As the mean temperature rises, more heat waves are predicted to occur.
- Precipitation increases in winter and spring in Montana may be up to 25 percent in some areas. Precipitation decreases of up to 20 percent may occur during summer, with potential increases or decreases in the fall.
- For most of Montana, annual median runoff is expected to decrease between 2 and 5 percent. Mountain snowpack is expected to decline, reducing water availability in localities supplied by meltwater.
- Wind power production potential is predicted to decline in Montana based on modeling focused on the Great Falls area.
- Water temperatures are expected to increase in lakes, reservoirs, rivers, and streams. Fish populations are expected to decline due to warmer temperatures, which could also lead to more fishing closures.
- Wildland fire risk is predicted to continue to increase due to climate change effects on temperature, precipitation, and wind. One study predicted an increase in median annual area burned by wildland fires in Montana based on a 1°C global average temperature increase to be 241 to 515 percent.

While long-range regional changes might occur within this analysis area, it is impossible to predict precisely when they could occur. The following example summarizing climate data for the West North Central Region (MT, ND, SD, and WY) illustrates this point at the regional scale. A potential regional effect of climate change is earlier snowmelt and associated runoff. This is directly related to spring-time temperatures. Over a 112-year record, overall warming is clearly evident with temperatures increasing 0.21 degrees per decade (Figure B). However, data from 1991-2005 indicate a 0.45 degree per decade cooling trend (Figure C). This example is not an anomaly, as several other 15-year windows can be selected to show either warming or cooling trends. Some of these year-to-year fluctuations in temperature are due to natural processes, such as the effects of El Ni os, La Ni a s, and the eruption of large volcanoes (Climate Change SIR 2010). This information illustrates the difficulty of predicting actual short-term regional or site-specific changes or conditions which may be due to climate change during any specific time frame.

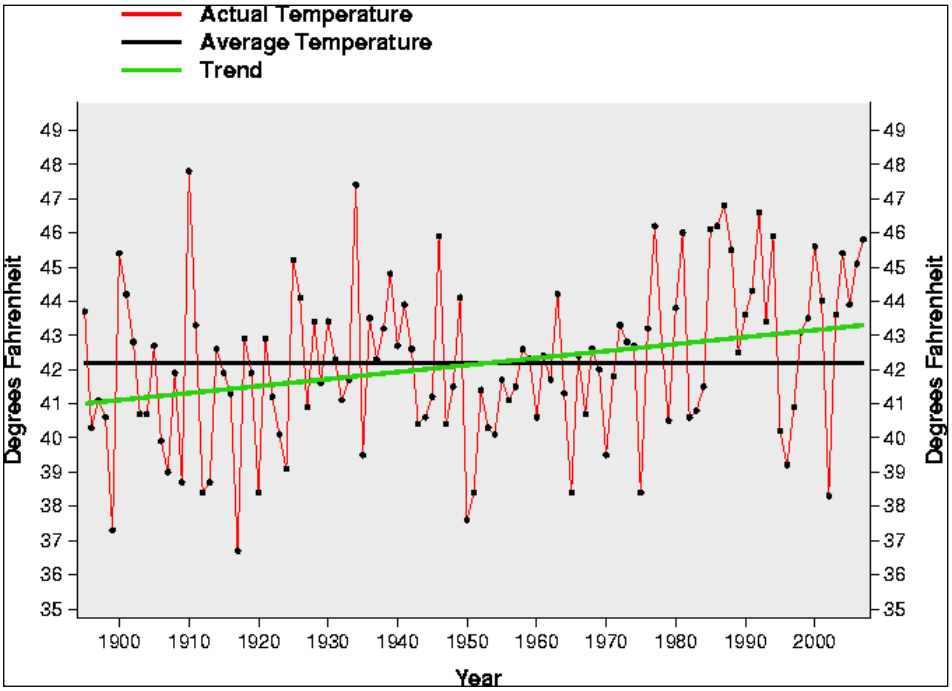


Figure B. Regional climate summary of spring temperatures (March-May) for the West North Central Region (MT, ND, SD, WY), from 1895-2007. (Source: NOAA website – http://www.ncdc.noaa.gov/oa/climate/research/cag3/wn.html**)**

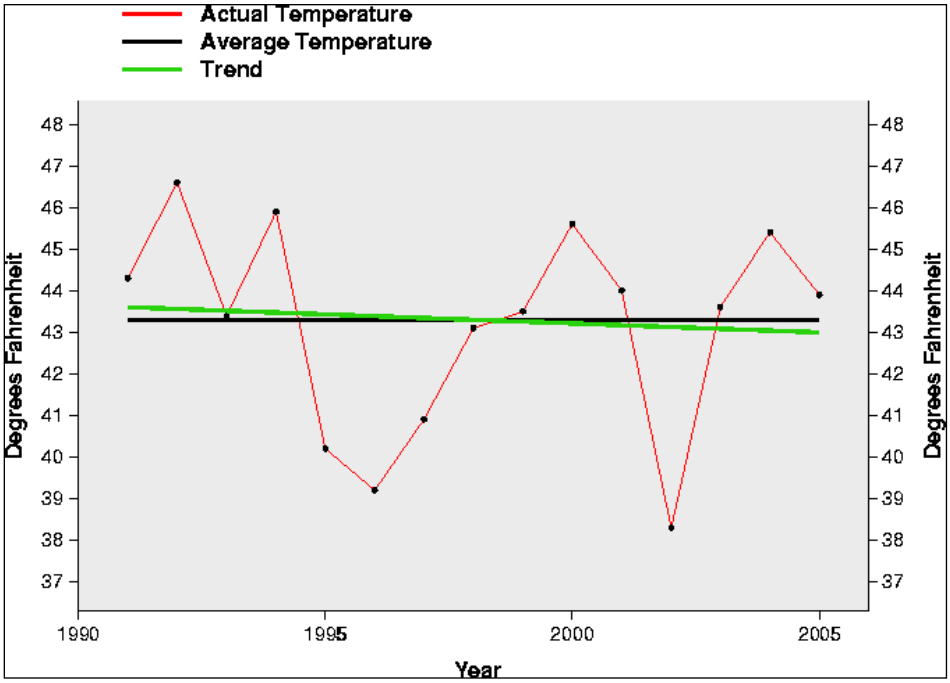


Figure C. Regional climate summary of spring temperatures (March-May) for the West North Central Region (MT, ND, SD, WY), from 1991-2005. (Source: NOAA website – http://www.ncdc.noaa.gov/oa/climate/research/cag3/wn.html)

3.3 Soil Resources

Soils were identified from the United States Department of Agriculture's Natural Resources Conservation Service's (USDA-NRCS) Soil Survey Geographic (SSURGO) dataset and the Soil Data Mart (SDM) website (http://soildatamart.nrcs.usda.gov/). Soil surveys were performed by the USDA-NRCS according to National Cooperative Soil Survey (NCSS) standards. Soils within the lease parcels developed from alluvium from shale and mixed sources; and, residuum and colluviums from sedimentary shale, mudstone, and sandstone. Landforms consist of highly erodible, steep to very steep, hillslopes and escarpments; gently sloping to moderately steep hillslopes; and nearly level to gently sloping alluvial fans, terraces and floodplains. There are areas of steep or very steep (>20% slope) barren or nearly barren land with exposures of consolidated sedimentary beds of shale and sandstone. Table 4 breaks out the Soil Map Units within each lease parcel and provides acres and soil ratings. Soil Map Unit descriptions are available from the SDM for the lease parcels.

Table 4. Soil Map Units and associated acres, slope range, and ratings for Lease Parcels based on dominant condition of each Soil Map Unit. (Source: USDA-NRCS SSURGO dataset (USDA-NRCS, 2012)).

Parcel	Map Unit	Acres[1]	Slope Range (Percent)	Water Erosion Hazard[2]	Wind Erosion Hazard[3]
MTM97300-73	3	40	15 - 45	Severe	Moderate
	190	67	-	-	-
	282	94	25 - 50	Severe	Slight
MTM97300-74	3	47	15 - 45	Severe	Moderate
	4	11	4 - 15	Moderate	Moderate
	52	6	2 - 8	Slight	Slight
	68	10	8 - 15	Moderate	Slight
	118	154	-	Slight	Slight
	149	7	0 - 2	Slight	Slight
	255	62	0 - 4	Slight	Slight
	256	11	2 - 8	Slight	Slight
	278	20	2 - 8	Slight	Slight
	282	742	25 - 50	Severe	Slight
MTM97300-75	4	31	4 - 15	Moderate	Moderate
	161	5	2 - 8	Slight	Moderate
MTM97300-PH	173E	11	15 - 35	Severe	Moderate
	377C	15	2 - 8	Slight	Moderate
	476D	7	4 - 15	Slight	Moderate
	477C	31	2 - 15	Slight	Slight
	676C	20	2 - 8	Slight	Moderate
	676D	11	8 - 15	Slight	Moderate
	776C	22	2 - 15	Slight	Moderate

1. Approximate acres of each MU ≥ 5 acres in size within the lease parcel. Approximate acres based on GIS calculations.
2. The water erosion hazard for bare, non-compacted, soil is estimated by using the formula: Water Erosion Hazard = Kw factor x Representative Value (RV) Slope. The soil erodibility factor (Kw) quantifies soil detachment by runoff and raindrop impact. This erodibility factor is an index used to predict the long-term average soil loss, from sheet and rill erosion. The Kw factor applies to the whole soil, which includes rock fragments. Kw is based primarily on percentage of silt, sand, and organic matter, soil structure, saturated hydraulic conductivity, and rock fragments (USDA-NRCS, 2012). Representative Value (RV) Slope indicates the expected slope value for a given MU.
3. The wind erosion hazard is estimated from the Wind erosion Index (WEI).The WEI is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. This index is

divided into three rating classes: slight (0, 38, 48, 56), moderate (86), and severe (134, 160, 180, 220, 250, 310) (USDA-NRCS, 2012).

3.4 Water Resources

3.4.1 Surface Hydrology

Three of the four parcels recommended for leasing are located within the Lower Dog Creek subwatershed (6th-code HUC 100401010508). Dog Creek, an intermittent stream, is only partially supporting its beneficial uses, and is listed as water quality impaired by Montana Department of Environmental Quality. One or more uses are impaired and a TMDL is required.

The fourth parcel recommended for leasing is located within the Dry Fork Marias River – New Miami Colony subwatershed (6th-code HUC 100302030702). The Upper Dry Fork of the Marias River has been assessed by MDEQ, and all uses are fully supported. The recommended lease parcels, stream channel distances from the impaired waterbody, and probable causes and sources of impairment are identified in Table 5.

Table 5. Watersheds (6th-code HUC) and impaired streams and associated causes and sources. (Source: Montana Department of Environmental Quality MT-DEQ Clean Water Act Information Center (MT DEQ, 2010).

Parcel #	Watershed (6th-code HUC)	Impaired Streams within Subwatershed	Probable Causes	Probable Sources	Stream Channel Distance from Parcel to Impaired Waterbody
MTM97300-73	Lower Dog Creek (100401010508)	Dog Creek	Nitrate/Nitrite (Nitrite + Nitrate as N), Sedimentation and Siltation	Grazing in Riparian or Shoreline Zones	1.25 miles
MTM97300-74	same	same	same	same	Immediate
MTM97300-75	same	same	same	same	1.20 miles
MTM97300-PH	Dry Fork Marias River – New Miami Colony (100301030702)	none	n/a	n/a	n/a

3.4.2 Groundwater

The quality and availability of ground water varies greatly across the three-state region (Montana, North Dakota, South Dakota). Residents in eastern Montana and the Dakotas commonly get their ground water from aquifers consisting of unconsolidated, alluvial valley-fill materials, glacial outwash, or consolidated sedimentary rock formations. Aquifers that residents most commonly use in the area covered in this EA include the Fort Union, Hell Creek, Fox Hills, Judith River, and Eagle consolidated formations. In some areas east of the Rocky Mountains, near-surface thick shale deposits such as those of the Colorado Group and Bearpaw (Pierre) Shale severely limit the economic availability of water to wells, or provide water of quality too poor for most uses. Eastern Montana aquifers typically yield less water and produce more salty, or mineralized, water compared to those in western Montana. The water in some eastern aquifers is suitable only for livestock consumption.

In northern Fergus County, which contains three of the four recommended lease parcels, principal aquifers include the Judith River Formation and the Eagle Sandstone. Aquifers are also

located within Quaternary alluvium, such as the floodplain of the Judith River. In the areas of Fergus County containing the lease parcels, the water quality of the bedrock aquifers is extremely variable; however, the specific conductance (microsiemens/centimeter at 25 degrees C) is often in Class III (2500-15000). Total dissolved solids range from 160 to 27,000 milligrams/liter (mg/L) in the Judith River Formation and 800 to 1,500 mg/L in the Eagle Formation. Water quality is generally better closer to outcrop areas near the mountains and decreases away from recharge zones.

The fourth parcel recommended for leasing is located in Pondera County. Besides surficial aquifers in Quaternary sands and gravels, principal aquifers near the recommended parcel are primarily aquifers in Mesozoic rocks and deposits, including the Kootenai Formation and the Ellis Group. The water quality is extremely variable; however, the specific conductance (microsiemens/centimeter at 25 degrees C) is often in Class II (1000-2500). Total dissolved solids range from 200 to 500 mg/L in the Kootenai Formation and are generally less than 600 mg/L in the Ellis Group.

3.5 Vegetation Resources

Pondera County Parcels:

Vegetation communities in the analysis area consist of sagebrush grasslands, grasslands, and lightly vegetated badlands. Mixed shrub communities are common in coulees and benches throughout all of these vegetation types. Common grasses and grasslike species include bluebunch wheatgrass, green needlegrass, needle and thread, western wheatgrass, prairie junegrass, blue grama, prairie junegrass, blue grama, prairie sandreed, Sandberg bluegrass and threadleaf sedge. Introduced grasses are found in some areas, either in pure stands or intermingled with native species. Introduced annual invasive species include cheatgrass and Japanese brome. Common shrubs include big sagebrush, silver sagebrush, saltbush, greasewood and rubber rabbitbrush. Other common vegetation includes prickly pear cactus and dense clubmoss. Table 6 shows types and acres of habitat within offered lease parcels.

Fergus County Parcels:

Vegetation communities in the analysis area consist of sagebrush grasslands, grasslands, and lightly vegetated badlands. Mixed shrub commounities are common in coulees and benches throughout all of these vegetation types. Common grasses and grasslike species include bluebunch wheatgrass, green needlegrass, needle and thread, western wheatgrass, prairie junegrass, blue grama, prairie junegrass, blue grama, prairie sandreed, Sandberg bluegrass and threadleaf sedge. Introduced grasses are found in some areas, either in pure stands or intermingled with native species. Introduced annual invasive species include cheatgrass and Japanese brome. Common shrubs include big sagebrush, silver sagebrush, saltbush, greasewood and rubber rabbitbrush. Other common vegetation includes prickly pear cactus and dense clubmoss.

Table 6. Acres of Mapped ReGap Habitat within each Offered Lease Parcel.

ReGap Habitat Classifications (Level 3)	Offered Lease Parcels				
	73	**74**	**75**	**PH**	**Grand Total**
Cultivated Cropland	0	35	0	62	**96**
Inter-Mountain Basins Big Sagebrush Steppe	53	369	36	0	**459**
Inter-Mountain Basins Greasewood Flat	0	11	0	0	**11**
Introduced Upland Vegetation - Perennial Grassland and Forbland	0	11	0	17	**28**
Northern Rocky Mountain Foothill Conifer Wooded Steppe	41	137	0	0	**178**
Northwestern Great Plains - Black Hills Ponderosa Pine Woodland and Savanna	66	95	0	0	**161**
Northwestern Great Plains Mixedgrass Prairie	6	46	3	39	**93**
Northwestern Great Plains Riparian	0	181	1	0	**182**
Northwestern Great Plains Shrubland	0	0	0	3	**3**
Open Water (Fresh)	0	1	0	0	**1**
Western Great Plains Badland	33	183	0	0	**216**
Western Great Plains Cliff and Outcrop	0	8	0	0	**8**
Western Great Plains Sand Prairie	0	1	0	0	**1**
Western Great Plains Wooded Draw and Ravine	0	2	0	0	**2**
Grand Total	**200**	**1079**	**40**	**120**	**1440**

3.6 Special Status Species

3.6.1 Special Status Animal Species

3.6.1.1 Aquatic Wildlife

BLM special status species do not occur in or near any of the proposed lease parcels. Results from Montana Fisheries Information System from Dog Creek surveys and extrapolations are listed in section 3.7 below.

3.6.1.2 Threatened, Endangered, Candidate, and Proposed Species

No formal surveys/inventories for wildlife have been completed in the offered parcels. LFO wildlife biologists attended site visits to the parcels on October 26, 2011 (parcels 73 and 74), April 10, April 11 (all Teton and Pondera County parcels) and April 17, 2012 (parcel 75). Potential habitats and species needs were evaluated. Fergus County parcels (73, 74 and 75) do not contain habitat for threatened, endangered or proposed species (Appendix D). These parcels contain potential habitat in or adjacent for Candidates Greater Sage-Grouse and Sprague's pipit. Pondera County parcel PH contains potential habitat in and adjacent for the Threatened grizzly bear and Candidate Sprague's pipit.

Based on information obtained from the Montana Natural Heritage Program website (MNHP 2012), there are no known occurrences of federally threatened or endangered species within offered parcels. No FWS critical habitat has been designated in any of the proposed lease parcels.

Recent years have seen grizzly bears (*Ursus arctos*) expanding use east onto the plains. Mike Madel's (MFWP) April 21, 2012 telemetry flight found a sow and two yearlings feeding along the Dry Fork of the Marias River. Parcel PH is in close proximity (approximately 5 miles) to this location. The Northern Continental Divide Ecosystem (NCDE) grizzly bear recovery zone is approximately 15 miles west.

Greater sage-grouse (*Centrocercus urophasianus*) is a candidate species and listing is warranted but precluded. Based on BLM records, there are no known active greater sage-grouse leks within any offered parcel. Two active leks occur approximately four miles east of parcel 74. No offered parcels are located within sage-grouse preliminary priority habitat (PPH). Approximately 1,000 acres offered in parcels 73 and 74 are within preliminary general habitat (PGH). Parcel 75 is 0.25 miles north of currently mapped PGH.

Sprague's pipit (*Anthus spragueii*), like sage-grouse, is also a candidate species and listing is warranted but precluded. All nominated parcels that had potential nesting habitat on the surface were deferred per the France decision. Potential Sprague's pipit habitat occurs adjacent to the parcels offered in Alternative B. Breeding evidence has been documented approximately 10 miles away, north of Hwy 191 and south of Winifred (MNHP 2012). A breeding bird survey route north of Bynum Reservoir in Teton County documented Sprague's pipit breeding evidence at four stops. Parcel PH is located approximately 15 miles northeast. Most of the Winifred, MT vicinity and Pondera County have not been surveyed for breeding birds.

3.6.1.3 Other Sensitive Species

Several BLM Sensitive Species have been documented through the Montana Natural Heritage Program(MNHP 2012) in the proposed lease parcel vicinity. These include: greater sage-grouse, Sprague's pipit, ferruginous hawk (*Buteo regalis*), fringed myotis (*Myotis thysanodes*), Townsend's big-eared bat (*Corynorhinus townsendii*), Baird's sparrow (*Ammodramus bairdii*), bald eagle (*Haliaeetus leucoephalus*), long-billed curlew (*Numenius americanus*), and greater short-horned lizard (*Phrynosoma hernandesi*). Habitat may occur within the offered parcels that may support the species mentioned, as well as other BLM sensitive birds, migratory birds, herpetofauna and bats that have not been recorded or observed. Appendix C lists special status species with potential to occur in the project area and Table 7 lists parcels containing potential habitat for species identified in Appendix C.

Table 7. Potential Threatened and Sensitive Species within the Analysis Area.

Species	PH	73	74	75
Great Plains toad			✓	✓
Northern leopard frog			✓	✓
Plains spadefoot			✓	✓
Greater short-horned lizard	✓	✓	✓	✓
Milk snake		✓	✓	✓
Western hog-nosed snake	✓	✓	✓	✓
Baird's sparrow	✓	✓	✓	✓
Bald eagle	✓	✓	✓	✓
Bobolink	✓	✓	✓	✓
Brewer's sparrow		✓	✓	✓
Chestnut-collared longspur	✓	✓	✓	✓
Dickcissel	✓	✓	✓	✓
Ferruginous hawk	✓	✓	✓	✓
Golden eagle	✓	✓	✓	✓
Greater sage-grouse		✓	✓	✓
Loggerhead shrike		✓	✓	✓
Long-billed curlew	✓	✓	✓	✓
Marbled godwit	✓	✓	✓	✓
McCown's longspur	✓	✓	✓	✓
Sage thrasher		✓	✓	✓
Sprague's pipit	✓	✓	✓	✓
Swainson's hawk	✓	✓	✓	✓
White-faced ibis	✓		✓	✓
Fringed myotis		✓	✓	✓
Grizzly bear	✓			
Long-eared myotis		✓	✓	✓
Long-legged myotis		✓	✓	✓
Townsend's big-eared bat		✓	✓	✓

3.6.2 Special Status Plant Species

There are no BLM sensitive species known to occur within, or near the affected area. However, no surveys for special status species have been completed on nominated lease parcels. Austin's knotweed and Crawe's sedge are BLM Sensitive Species known to occur in Pondera County. Hot springs Phacelia , little indian breadroot and square-stem monkey flower are known to occur in Fergus County. There is no potential habitat for Austin's knotweed or Crawe's sedge on or near the Pondera County parcel. Most of the parcel no longer support native vegetation due to agricultural crop conversion. There is potential habitat for little Indian breadroot and hot springs phacelia in Fergus County, but , no potential habitat exists for square-stem monkey flower.

Table 8 contains a list of Montana's species of concern and BLM sensitive plants that may have existing populations and/or suitable habitat on or near the lease parcels by county:

Table 8. BLM Sensitive Plants on or near lease parcels.

Plant Name	Counties it occurs in	Habitat description
Austin's knotweed *Polygonum austiniae*	Pondera	open, gravelly, sparsely-vegetated slopes with shale-derived soils.
Crawe's Sedge *Carex crawei*	Pondera	Crawe's sedge grows in wet, gravelly or sandy soil along streams or pond margins, often where there is some natural wave or flow disturbance.
Hot Spring Phacelia *Phacelia thermalis*	Fergus	Habitat information varies widely
Little Indian Breadroot *Pediomelum hypogaeum*	Fergus	Loose, sandy soil of grasslands and open pine woodlands on the plains, below sandstone outcrops and in blowouts
Square-stem Monkeyflower *Mimulus ringens*	Fergus	Riparian areas of streams and rivers on the plains.

(Source: Montana Natural Heritage Program 2012)

3.7 Fish and Wildlife

Terrestrial game species with potential to occur in and adjacent to the parcels include antelope (*Antilocapra americana*), Rocky Mountain bighorn sheep (*Ovis canadensis*), black bear (*Ursus americanus*), elk (*Cervus canadensis*), mule deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus*), mountain lion (*Puma concolor*), sharp-tailed grouse (*Tympanuchus phasianellus*)-, sage-grouse, wild turkey (*Meleagris gallopavo*), ring-necked pheasant (*Phasianus colchicus*) and gray partridge (*Perdix perdix*). Table 9 shows the terrestrial game occurrence within offered parcels and type/seasons of potential use (if known/mapped). Species that do not occur in Table 8 have potential habitat adjacent to Fergus County parcels (73, 74 and 75).

Table 9. Terrestrial Game Species Occurrence within Offered Lease Parcels.

Game Species	Parcels			
	PH	73	74	75
Antelope	**G***		**G**	
Black Bear	**G**			
Elk		**GW**		**GW**
Gray Partridge	✓	✓	✓	✓
Mountain Lion		**G**	**G**	**G**
Mule Deer	**GW**	**GW**	**GW**	**GW**
Pheasant	**Good**		**Fair**	
Sharp-tailed grouse	✓	✓	✓	✓
White-tailed deer	**G**		**G**	

*G = General Habitat; W = Winter Habitat; ✓= Within Mapped Distribution; Pheasant Relative Habitat Quality was Delineated;

Potential fish species in the Dog Creek include: common carp (*Cyprinus carpio*), flathead chub (*Platygobio gracilis*), lake chub (*Couesius plumbeus*), fathead minnow (*Pimephales promelas*), plains minnow (*Hybognathus placitus*), longnose dace (*Rhinichthys cataractae*), brook stickleback (*Culaea inconstans*) and white sucker (*Catostomus commersoni*).

3.8 Cultural Resources

The BLM is responsible for identifying, protecting, managing, and enhancing cultural resources which are located on public lands, or that may be affected by BLM undertakings on non-Federal lands, in accordance with the National Historic Preservation Act (NHPA) of 1966, as amended. The procedures for compliance with the NHPA are outlined in regulation under 36 CFR 800. Cultural resources include archaeological, historic, and architectural properties, as well as traditional life-way values and/or traditional cultural properties important to Native American groups.

Cultural resources are discussed in the JVP Final RMP/EIS on page 131. To update and supplement that data in 2010 the BLM completed a Class I Overview of the historic, prehistoric, and paleontological resources present throughout the Central Montana District. That document is on file at the LFO.

The BLM broadly defines cultural resources as any traditional lifeway belief or cultural property. Cultural properties are defined as distinct evidence in areas of past human occupation, activity, and use. Traditional lifeway beliefs are defined as traditional value systems of religious beliefs, cultural practices, or social exchange that are not closely and tangibly defined or identified with definite locations (JVP RMP, 1992).

Early peoples in the study area were mobile hunters and gatherers throughout and up until the historic period. The following brief overview explains changes through time as summarized by other archaeologists (Frison 1978; Ruebelmann 1983).

Cultural sites can be considered significant for several reasons; some because information about the past can be learned through methodical study of the sites, while other sites communicate a sense of a particular time period they represent in history. Finally, sites can be considered to be important because of the current use or values associated with the location.

An important consideration for management actions in this area is preserving the values of the cultural properties contained within. In order to preserve the integrity of a cultural property, it is sometimes necessary to preserve the location in which the cultural property is found. This is an important consideration when the management actions have the potential to affect the location of a cultural property, thus affecting the overall integrity of the cultural property.

The Montana Historical Society's State Historic Preservation Office, through funding provided by the BLM for a cultural resource data sharing project, maintains the State Antiquities Database. This database maintains records of all sites recorded and all cultural resource inventories completed on federal, state, and private lands. The legal descriptions of the four lease parcels were compared against this database to determine the potential for effects resulting from the leasing of the parcels. None of the private or public land has been inventoried.

In 2011 and 2012, the LFO archaeologist visited all three of the Fergus County parcels to make an initial assessment on site probability and the potential for cultural resources to be present.

MTM 97300-73 has not been inventoried. Initial assessment work identified no cultural sites.

MTM97300-74 has not been inventoried. Initial assessment work identified no cultural sites. This parcel consists of public and private land. The private land has evidence of historic agricultural use.

MTM97300-75 has not been inventoried. Initial assessment work identified no cultural sites. This parcel has evidence of historic agricultural use.

MTM97300-PH has not been inventoried. This parcel consists of private land. These parcels may contain evidence of historic agricultural use as well as prehistoric and Native American use. This area is known to have been used by the Blackfeet as well as by the Metis.

3.9 Native American Religious Concerns

BLM's management of Native American Religious concerns is guided through its 8120 Manual: *Tribal Consultation Under Cultural Resources Authorities* and 8120 Handbook: *Guidelines for Conducting Tribal Consultation*. Further guidance for consideration of fluid minerals leasing is contained in BLM Washington Office Instruction Memorandum 2005-003: Cultural Resources, Tribal Consultation, and Fluid Mineral Leasing. The 2005 memo notes leasing is considered an undertaking as defined in the National Historic Preservation Act. Generally areas of concern to Native Americans are referred to as "Traditional Cultural Properties" (TCPs) which are defined as cultural properties eligible for the National Register because of its association with cultural practices or beliefs that (a) are rooted in that community's history and (b) are important in maintaining the continuing cultural identity of the community.

None of the Indian tribes with whom we consult have identified traditional cultural properties or sacred areas within the analysis area. This area has generally been treated as open territory, or on the margins of many tribal claims. At various times the Blackfeet, Crow, and Gros Ventres have dominated the area, but none have been able to claim it solely as their tribal land. Chippewa and Cree as well as Métis and the Salish and Kootenai have used this area as well. Geographic features near the analysis area of known importance to the various tribes include the Musselshell River. This area has been used as collection sites for plants and minerals, as a sacred area, and for camping and habitation.

3.10 Paleontology

The subject oil and gas lease parcels are located within areas of varying potential fossil yield classifications (PFYC) assigned from the associated geologic units. The paleontological potentials based on Montana Bureau of Mines and Geology geologic maps and the LFO Class I Overview (Hanna 2009) are evaluated below by parcel.

MTM97300-73 (portions), 74 (portions), and 75: The flat areas above the drainages are mapped as Quaternary alluvium, a class 2 unit with very low potential for yielding vertebrate or scientifically significant nonvertebrate fossils. The steeply dipping drainages found within these parcels incise and expose bedrock of Judith River Formation, a class 5 unit that is highly fossiliferous. There are no fossil localities documented in or near the parcels.

MTM97300-PH: Much of the surface has been tilled and there is very little exposure of what is mapped as the Virgelle Formation (western and middle parcel portions) and Two Medicine Formation (middle and east parcel portions). In this area of Montana, the Virgelle Sandstone directly underlies the Two Medicine, but no outcropping of sandstone is present within the

parcels of PH. The Two Medicine Formation is a class 5 unit under the PFYC system for its highly fossiliferous nature, but none of the documented localities (107 within the LFO area) are recorded within the areas of PH. Gravels are present within the till, indicating much of the surface is overlain by Quaternary alluvium (up to 15 feet thick), a class 2 unit with very low potential for yielding vertebrate or scientifically significant nonvertebrate fossils.

3.11 Visual Resources

A Class I VRM area classification means that the existing character of the landscape should be preserved. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

A Class II VRM area classification means that the character of the landscape has unique combinations of visual features such as land, vegetation, and water. The existing character of the landscape should be retained. Activities or modifications of the environment should not be evident or attract the attention of the casual observer. Changes caused by management activities must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

A Class III VRM area classification means the level of change to the character of the landscape should be moderate. Changes caused by management activities should not dominate the view of the casual observer and should not detract from the existing landscape features. Any changes made should repeat the basic elements found in the natural landscape such as form, line, color and texture.

A Class IV VRM area classification means that the characteristic landscape can provide for major modification of the landscape. The level of change in the basic landscape elements can be high. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements. Table 10 shows VRM classes for the analysis area.

Table 10: VRM Classes for the analysis area.

Leasing Areas	Adjacent to VRM I Acres	Adjacent to VRM II Acres	VRM II Acres	VRM III Acres	VRM IV Acres
PONDERA COUNTY	***120 total acres***	***0 acres***	***0 acres***	***0 acres***	***0 acres***
MTM 97300- PH	120	0	0	0	0
FERGUS COUNTY	***0 acres***	***600 acres***	***200 acres***	***0 acres***	***240 acres***
MTM 97300-73	0	0	0	0	200
MTM 97300-74	0	600	200	0	0
MTM 97300-75	0	0	0	0	40

3.12 Livestock Grazing

The following three allotments are all within the parcels in Fergus County. The Jones Cone allotment is in compliance with standards and guidelines for rangeland health and guidelines for livestock management. The Olsen is not meeting the upland standard due to crested wheatgrass on the allotment, livestock grazing was determined to not be a factor. The Olson allotments are

not meeting the riparian and water quality standards. The riparian standard was not met due to the presence of Canada thistle, the allotment was determined to be making significant progress towards meeting the standard based on an abundance of desirable vegetation and little to no bank alteration. The allotment did not meet the water quality standard because Dog creek is listed as being water quality impaired on from Cutbank creek to the Missouri River, livestock was also not considered a factor on this allotment. Actions were taken to allow these allotments make progress towards meeting the standards. The specifics for the grazing authorization is:

Olson Allotment, 20087 is authorized to be grazed on a custodial use basis by 7 cattle from March 1 to February 28, with a total permitted use of 84 Animal Unit Months (AUMs).

Jones Cone Allotment, 20005 is authorized to be grazed on a custodial use basis by 5 cattle from March 1 to February 28, with a total permitted use of 65 Animal Unit Months (AUMs).

Olsen Allotment, 05099 is authorized to be grazed on a custodial use basis by 8 cattle from June 1 to February 28, with a total permitted use of 91 Animal Unit Months (AUMs).

3.13 Recreation and Travel Management

BLM only manages recreational opportunities and experiences on BLM-administered surface. The affected environment consists of approximately 440 acres of BLM-administered surface. Recreational activities enjoyed by the public on BLM lands within the analysis area include hunting, hiking, camping, fishing, photography, picnicking, and winter activities such as snowmobiling. Benefits and experiences enjoyed by recreational users include opportunities for solitude, spending time with families, enhancing leisure time, improving sports skills, enjoying nature and enjoying physical exercise.

Two Special Recreation Permits are located in portions of the 440 BLM-administered acres proposed for lease, which provide guided big game hunts.

Much of the approximately 440 BLM-administered acres proposed for lease consist of small and scattered tracts with limited legal public access (i.e., no public easements or rights-of-way across private property). The lack of public access limits use of the BLM parcels for recreational use by the general public. The types of limited public use on these lease parcels can be characterized as casual dispersed recreational activities including hiking, hunting (including outfitters), camping, and wildlife viewing.

3.14 Lands and Realty

The surface ownership in the parcel identified MTM-97300PH is private and/or not managed by the BLM. There are no authorized rights-of-way on these parcels.

The parcels identified in MTM 97300-73,97300-74 and 97300-75 are a mix of privately owned surface and surface managed by the BLM. There are no authorized rights-of-way on these parcels. Table 11 further details the surface/subsurface ownership of each parcel.

Table 11. Surface ownership.

Parcel	County	BLM Surface Ownership Acres Proposed for Leasing	Split Estate Acres Proposed for Leasing	Total Acres Proposed for Leasing
MTM 97300-73	Fergus	200		200
MTM 97300-74	Fergus	242.3	840	1082.3
MTM 97300-75	Fergus	40		40
MTM 97300-PH	Pondera		120	120
	Total Acreage	482.3	960	1442.3

3.15 Minerals

3.15.1 Fluid Minerals

It is the policy of the BLM to make mineral resources available for disposal and to encourage development of these resources to meet national, regional, and local needs, consistent with national objectives of an adequate supply of minerals at reasonable prices. At the same time, the BLM strives to assure that mineral development occurs in a manner which minimizes environmental damage and provides for the reclamation of the lands affected.

Currently there are 243 oil and gas leases covering approximately 154,125 acres in the Lewistown Field Office. Existing production activity holds approximately 10 percent of this lease acreage. Information on numbers and status of wells on these leases and well status and numbers of private and state wells within the the external boundary of the field office as well as Fergus and Pondera counties is displayed in Table 12. Numbers of townships, leased acres within those townships, and development activity for all jurisdictions are summarized in Table 13.

Exploration and development activities would only occur after a lease is issued and the appropriate permit is approved. Exploration and development proposals would require completion of a separate environmental document to analyze specific proposals and site-specific resource concerns before BLM approved the appropriate permit.

Table 12. Existing Development Activity

	FEDERAL WELLS	PRIVATE AND STATE WELLS
Drilling Well(s)	0	0
Producing Gas Well(s)	0	1
Producing Oil Well(s)	0	6
Water Injection Well(s)	0	0
Water Disposal Well(s)	0	1
Shut-in Well(s)	0	16
Temporarily Abandoned Well(s)	0	2
Total Wells	0	26

Table 13. Oil and Gas Leasing and Existing Development within Townships Containing Lease Parcels

	Pondera County	Fergus
Number of Townships Containing Lease Parcels	1 (T28N, R6W)	1 (T22N, R18E)
Total Acres Within Applicable Township(s)	23,847.13 acres	23,197.13 acres
Federal Oil and Gas Minerals	160 acres	10,312.36 acres
Percent of Township(s)	0.67%	44.46%
Leased Federal Oil and Gas Minerals	0 acres	4,426.18 acres
Percent of Township(s)	0%	19.12%
Leased Federal Oil and Gas Minerals Suspended	0.00 acres	0.0 acres
Percent of Township(s)	0%	0%
Federal Wells	0 Active Wells	0 Active Wells
Private and State Wells	POW 6, WDW 1, OSI 8, GSI 7 & TA 2. Total of 24 Private and State Wells.	PGW 1, GSI 1

POW – Producing Oil Well, INJEOR – Water Injection Well Enhanced Oil Recovery, OSI – Oil Shut-in, GSI – Gas Shut-in, WSW- Water Source Well, COMP. – Completed well-unknown current status, WWR – Water Well Released, WDW – Water Disposal Well.

3.16 Social and Economic Conditions

3.16.1 Social and Environmental Justice

The social section focuses on Fergus County in central Montana where the majority of the acreage is located and Pondera County in north-central Montana, where the remaining acreage is located. The 2010 population of Fergus County was 11.586; for Pondera County the 2010 figure was 6,153. Both counties lost population in the decade 2000 to 2010, with the figures indicating a decline of 2.6 percent for Fergus County and 4.2 percent for Pondera County. Population density (persons per square mile) is generally low with figures of 2.7 in Fergus County and 3.8 in Pondera County. These figures compare to a statewide figure of 6.8 and a national figure of 87.4. About two/thirds of the land being considered is split estate (private surface with federal mineral estate).

Fergus County, where most of the acreage being considered is located, is home to large farms and ranches, part of Lewis & Clark National Forest, and part of the Upper Missouri Breaks

National Monument (UMBNM). The parcels are located directly south of the UMBNM. The county seat is Lewistown with a 2010 population of 1,997. Gas exploration and development has occurred in the past in Fergus County.

Pondera County, where the remaining acreage being considered is located, is also home to large farms and ranches, the western part of the Blackfeet Reservation, and part of the Lewis & Clark National Forest. Gas exploration and development is currently ongoing in Pondera County.

In 2010, the American Indian population was 1.2 percent in Fergus County and 14.5 percent in Pondera County. Seven Indian Reservations are located in the state of Montana and many others are located in the surrounding states, particularly in North and South Dakota. The proportion of the population living below the poverty level in 2006-2010 was 14.7 percent in Fergus County and 21.5 percent in Pondera County. These figures compare to a statewide figure of 14.5 percent during the same time period.

3.16.2 Economics

Certain existing demographic and economic features influence and define the nature of local economic and social activity. Among these features are the local population, the presence and proximity of cities or regional business centers, longstanding industries, infrastructure, predominant land and water features, and unique area amenities. The local economic impact area extends beyond the Field Office boundaries because of economic linkages to areas outside the Field Office boundaries. The affected local economy is made up of nine counties in Montana within the BLM Lewistown Field Office boundaries (Cascade, Chouteau, Fergus, Judith Basin, Lewis and Clark, Meagher, Petroleum, Pondera, and Teton) as well as Hill County which is outside the Lewistown Field Office boundaries. Hill County is included because of the oil and gas related businesses that are based in Havre that work in oil and gas fields within the Lewistown Field Office boundaries. While public revenues from oil and gas leasing, rent, and production addressed in this EA are only distributed to those counties in the Lewistown Field Office area, employment and income effects are spread across the 10counties. The distribution of these economic effects is based on acres leased and levels of production as well as business patterns.

The ten-county local economy had an estimated 2009 population of 193,428 people. Total employment was estimated to be 130,931 jobs; there were an estimated 78,405 households; and there were 213 NAICS industrial sectors represented in the local economy (IMPLAN, 2009). The local economy includes Great Falls (a major population and business center), Lewistown, and Havre (regional oil and gas business and service centers). There were 1.48 people per job within the local economy and 0.60 households per job.

<u>Nature of the Oil and Gas Industry in the Lewistown Field Office:</u>

In March 2012, BLM had leases in effect covering 152,179 acres within the Lewistown Field Office boundaries. Annual lease rent is paid on 128,848 acres that are not held by production on leases with oil/gas being produced from one or more wells. Estimated annual average lease bonus and rental revenue to the Federal government is about $364,000. Lease rent was not paid on 23,331 acres that were held by production. Instead, royalties are paid on oil and gas production from these leases. More Federal leases and more acres were leased in Pondera County than any other county in the Lewistown Field Office boundary.

Recently, leasing of Federal minerals occurs in every county within the Field Office boundary except Judith Basin. All Federal oil production occurs in Petroleum County. Natural gas production from Federal minerals within the Lewistown Field Office boundary occurs in Fergus and Pondera Counties. While natural gas production from Federal minerals does occur in north Chouteau County, this production comes from the mineral estate managed by the Havre Field Office and is not included in this analysis.

Local oil and gas exploration, development, and production as well as gas pipeline transmission industry all support jobs and income in the local economy.

A portion of the oil and gas-related revenues collected by the Federal government is distributed to the state and counties. The amount that is distributed is determined by the Federal authority under which the Federal minerals are being managed. The leased acres changes daily as some leases expire and other parcels are leased. Generally, within the field office boundary, public domain Federal minerals account for about 69 percent of the acres leased; acquired lands/minerals, mostly Bankhead-Jones lands, account for about 31 percent of acres leased. The leased acres changes daily as leases expire and other parcels are leased.

Forty-nine percent of these Federal leasing revenues from public domain minerals are distributed to the state and the state distributes 25% back to the counties (Title 17-3-240, Montana Code Annotated). Twenty-five percent of the Federal leasing revenues from acquired minerals are distributed to the counties of production.

Leasing:

Federal oil and gas leases generate a one-time lease bonus bid as well as annual rents. The minimum lease bid is $2.00 per acre. If parcels do not receive the minimum bids they may be leased later as noncompetitive leases that don't generate bonus bids. Within the Lewistown Field Office area, bonus bids averaged $6.14 per acre on Federal leases issued between 2005 and 2011. Average BLM bonus per leased acre by county over the same period were: Chouteau ($11.83), Fergus ($9.09), Lewis and Clark ($2.00), Meagher ($2.00), Petroleum ($4.89), and Pondera ($8.18).

Lease rent is $1.50 per acre per year for the first five years and $2.00 per acre per year thereafter. Typically, oil and gas leases expire after 10 years unless held by production. Annual lease rent continues until one or more wells are drilled that result in production and associated royalties.

Currently, the Federal government collects an estimated annual average of about $364,000 in lease bids and rent; of which about $151,000 is distributed to the state/local governments.

Production:

Federal oil and gas production in Montana is subject to production taxes or royalties. These Federal oil and gas royalties generally equal 12.5 percent of the value of production (43 CFR 3103.3.1). Forty-nine percent of the royalties from public domain Federal minerals are distributed to the state, of which 25 percent is distributed back to the county of production (Title 17-3-240, MCA).

Between 2005 and 2010, an annual average of 10,865 barrels of oil and 398,488 MCF of natural gas was produced from BLM-administered Federal minerals in the Lewistown Field Office area. All Federal oil production occurred in Petroleum County. All of the gas production from BLM-administered Federal minerals occurred in Fergus and Pondera Counties. An estimated $95,000 is disbursed to the state and counties each year.

Local Economic Contribution:

The economic contribution to a local economy is measured by estimating the employment and labor income generated by 1) payments to counties associated with the leasing, rent, and production of Federal minerals, 2) local royalty payments associated with production of Federal oil and gas, and 3) economic activity generated from drilling and associated activities. Activities related to oil and gas leasing, exploration, development, and production form a basic industry that brings money into the state and region and creates jobs in other sectors. Extraction of oil and natural gas (NAICS sector 20), drilling oil and gas wells (NAICS sector 28), and support activities for oil and gas operations (NAICS sector 29) supported an estimated 257 total jobs and $15.1 million in total employee compensation and proprietor income in the local economy (IMPLAN, 2009).

Total average annual Federal revenues from Federal oil and gas leasing, rents, and royalty payments within the Lewistown Field Office boundary are an estimated $593,000. Federal revenues distributed to the state of Montana amount to an estimated $246,000 per year. The state redistributes an estimated $95,000 to the local Montana counties with Federal leases and production within the Lewistown Field Office boundaries per year. These revenues help fund traditional county functions such as enforcing laws, administering justice, collecting and disbursing tax funds, providing for orderly elections, maintaining roads and highways, providing fire protection, and/or keeping records. Other county functions that may be funded include administering primary and secondary education and operating clinics/hospitals, county libraries, county airports, local landfills, and county health systems.

The estimated annual local economic contribution associated with Federal leases, rents, drilling, production, and royalty payments combined to support about 41 total local jobs and $1.98 million in local labor income, respectively. These contributions equal about 0.03 percent of the local employment and about 0.04 percent of the local income. The NAICS aggregated sectors that experience the most influence from oil and gas related leasing, exploration, development, and production are mining and professional scientific and technical services. Table 14 shows the current contributions of leasing Federal oil and gas minerals and the associated exploration, development, and production of Federal oil and gas minerals to the local economy.

Table 14. Current Contributions of Federal Oil and Gas Leasing, Exploration, Development, and Production to the Local Economy

Industry	Employment (jobs)		Labor Income (Thousands of 2009 dollars)	
	Area Totals	Federal O&G - Related	Area Totals	Federal O&G- Related
Agriculture	8,656	0	$131,294	$1
Mining	578	17	$32,775	$1,042
Utilities	485	0	$45,065	$17
Construction	7,971	0	$311,769	$13
Manufacturing	2,733	0	$111,719	$5
Wholesale Trade	3,107	2	$167,569	$93
Transportation & Warehousing	3,770	2	$191,179	$100
Retail Trade	14,440	2	$378,995	$63
Information	2,213	0	$106,239	$22
Finance & Insurance	6,440	2	$301,895	$83
Real Estate & Rental & Leasing	4,617	2	$59,998	$31
Prof, Scientific, & Tech Services	7,135	5	$312,196	$246
Mngt of Companies	324	1	$19,111	$40
Admin, Waste Mngt & Rem Serv	3,898	1	$90,164	$23
Educational Services	1,726	0	$40,257	$4
Health Care & Social Assistance	14,416	2	$647,371	$90
Arts, Entertainment, and Rec	3,293	1	$45,720	$6
Accommodation & Food	9,133	2	$155,494	$25

Industry	Employment (jobs)		Labor Income (Thousands of 2009 dollars)	
	Area Totals	Federal O&G - Related	Area Totals	Federal O&G- Related
Services				
Other Services	7,969	1	$231,845	$43
Government	28,027	1	$1,729,930	$35
Total	130,931	41	5,110,587	1,980
Federal O&G as Percent of Total	---	0.03%	---	0.04%

IMPLAN, 2009 database

4.0 ENVIRONMENTAL IMPACTS

4.1 Assumptions and Reasonably Foreseeable Development Scenario Summary

At this stage of the leasing process, the act of leasing parcels would not result in any activity that might affect various resources. Even if lease parcels are leased, it remains unknown whether development would actually occur, and if so, where specific wells would be drilled and where facilities would be placed. This would not be determined until the BLM receives an APD in which detailed information about proposed wells and facilities would be provided for particular leases. Therefore, this EA discusses potential indirect effects that could occur in the event of development.

Upon receipt of an APD, the BLM would initiate a more site-specific NEPA analysis to fully analyze and disclose site-specific effects of specifically identified activities. In all potential exploration and development scenarios, the BLM would require the use of BMPs documented in "Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development" (USDI and USDA 2007), also known as the "Gold Book." The BLM could also identify APD Conditions Of Approval, based on site-specific analysis that could include moving the well location, restrict timing of the development, or require other reasonable measures to minimize adverse impacts (43 CFR 3101.1-2 Surface use rights; Lease Form 3100-11, Section 6) to protect sensitive resources, and to ensure compliance with laws, regulations, and land use plans.

Environmental consequences are discussed below by alternative to the extent possible at this time for the resources described in Chapter 3, as well as potential indirect effects from leasing.

4.1.1 Reasonably Foreseeable Development Scenario Summary

The following assumptions are from the RFD developed for the Lewistown Field Office. The BLM administers approximately 1,329,799 acres of federal minerals (for fluid minerals) available for leasing within the Lewistown Field Office. The RFD forecasts the following level of development in the Lewistown Field Office.

All parcels within the analysis area are in the portion of the LFO that was included in the Judith Resource Area and the JVP RMP. An RFD scenario was prepared for this RMP. After review, it has been determined that the development potential portrayed within the RMP is still valid. Only six townships in Fergus and Petroleum Counties have high development potential for oil and gas. The rest of the area is moderate potential for oil and gas.

The validation included a review of the drilling and production histories for both counties for the prior 20 years using the Montana Board of Oil and Gas Conservation online database and PI/Dwights information. Between 1991 and 2011, 23 wells were drilled in Fergus County, with ten completed as shut-in gas wells; eleven were dry holes and two are still in drilling status. Recently, within the previous two years, five wells have been drilled within Fergus County that currently has the statuses of the following: 2 gas shut-in wells, 2 drilling and 1 plugged and abandoned dry hole. Existing natural gas production is steadily declining and currently County wide gas production is currently at approximately 2,300 MCFPM producing from five active wells; there is no oil production. During the same time frame, the drilling of approximately 78 wells occurred in Pondera County, with 31 drilled and abandoned as dry holes or without

production; 26 were completed as producing oil or gas wells; 17 are currently shut-in oil or gas wells; 2 are currently in drilling status; 1 water injection well and 1 water disposal well. Recently, within the previous two years, five wells have been drilled within Pondera County that currently has the statuses of the following: 5 drilling. Production in Pondera County includes oil, associated gas, gas well gas (natural gas) and condensate oil. There are currently 277 wells actively producing oil and gas in Pondera County. This can be further broken down into the following: 192 oil wells producing approximately 10,970 BOPM and no associated gas; 85 gas wells producing approximately 21,000 MCFPM and 60 BOPM of condensate.

No wells 10,000 feet or greater were drilled in either of the two counties. Historically in Fergus County, approximately 358 of 392 wells (91.3%) were drilled less than or equal to 4000 feet. The remaining 34 wells had total depths greater than 4,000 feet with the deepest well drilled of 6,468 feet. Historically in Pondera County, approximately 1398 of 1447 wells (96.6%) were drilled less than or equal to 4000 feet. The remaining 49 wells had total depths greater than 4,000 feet with the deepest well drilled of 7,905 feet.

4.1.2 Alternative A (No Action Alternative)

Under the No Action Alternative, the proposed parcels would not be leased. There would be no new indirect impacts from oil and gas production on the parcel lands. No additional natural gas or crude oil would enter the public markets, and no royalties would accrue to the federal or state treasuries. The No Action Alternative would result in the continuation of the current land and resource uses on the parcels.

Unless specifically indicated by resource area, no further analysis of the No Action Alternative is presented in the following sections.

4.1.3 Analysis Assumptions for Alternative B

No surface disturbance would occur as a result of issuing leases. The potential number of acres disturbed by exploration and development activities is based upon the 80 acre spacing of wells within the analysis area. The potential acres of disturbance reflect acres typically disturbed by construction, drilling, and production activities, including infrastructure installation throughout the LFO. Typical exploration and development activities and associated acres of disturbance were used as assumptions for analysis purposes in this EA. (Note: The assumptions were not applied to Alternative A because the lease parcels would not be recommended for lease; therefore, no wells would be drilled or produced on the lease parcel, and no surface disturbance would occur on those lands from exploration and development activities).

The information concerning the RFD assumption by parcel is as follows:

> Parcel MTM 97300 - PH (T28N, R6W, Pondera County, Sec 27, (NWSE); 28 (SWSE); 34 (NENE) are all located from 0.2 – 0.4 of a mile from the nearest producing well in the Highview Field. Being that the parcels of land are located just outside of the general productive area of the Highview Field, the potential for discovering and developing future oil and gas production is moderate to high. This was given a moderate to high potential rating not only for the above discussion, but also for future potential development of enhanced oil recovery of the Highview Field and also because of future potential exploration and development of deeper untested hozizons.

Parcel MTM 97300 - 75 (T22N, R18E, Fergus County, Sec 29, NENE) is located approximately 2.3 miles from the nearest well that tested gas. Potential for this area to experience further drilling opportunities is moderate, however the potential for discovering a commercial well is low to moderate because of the number of dry holes drilled throughout the township and the geology of the area not yielding high potential opportunity for discovery.

Parcel MTM 97300 - 73 (T22N, R18E, Fergus County, Sec 29, NW & NESW) is located approximately 1.6 miles from the nearest well that tested gas. Potential for this area to experience further drilling opportunities is moderate, however the potential for discovering a commercial well is low to moderate because of the number of dry holes drilled throughout the township and the geology of the area not yielding high potential opportunity for discovery.

Parcel MTM 97300 - 74 (T22N, R18E, Fergus County, Sec 26: N2N2, S2NW, NESW, S2SW, W2SE; Sec 27: NENE, NENW; Sec 33: E2NW, SENW, N2SE; Sec 34: S2NE, N2NW, NWSE; Sec 35: NW, NWSE) is located approximately 0.2 miles from the nearest well that tested gas. Potential for this area to experience further drilling opportunities is moderate, however the potential for discovering a commercial well is low to moderate because of the number of dry holes drilled throughout the township and the geology of the area not yielding high potential opportunity for discovery.

4.2 Alternative A (No Action Alternative)

4.2.1 Direct Effects Common to All Resources

Under Alternative A, the 4 parcels (1 whole, 3 partial) would not be offered for competitive oil and gas lease sale. Under this alternative, the state and private minerals could still be leased in surrounding areas.

There would be no new impacts from oil and gas exploration or production activities on the nominated federal lease parcels. No additional natural gas or crude oil would enter the public markets, and no royalties would accrue to the federal or state treasuries from the parcel lands. The No Action Alternative would result in the continuation of the current land and resource uses on the lease parcels.

Except for Economic resources, described below, no further analysis of the No Action Alternative is presented.

4.2.2 Economics

4.2.2.1 Direct and Indirect Effects:

Economic effects are summarized and displayed in comparative form in Tables 20 and 21. Under Alternative A, none of the nominated parcels would be leased. Consequently, no federal, state, or local revenues would be generated from leasing, rents, or royalties associated with production. No additional employment or income would be generated from the nominated parcels if none of the parcels are leased.

4.3 Alternative B (Proposed Action)

Under Alternative B, 4 parcels (1 whole, 3 partial), approximately 1,442 federal mineral acres (482.3 acres of federal surface and 960 acres of private surface), would be offered for competitive oil and gas lease sale.

4.3.1 Direct Effects Common to All Resources

The action of leasing the parcels in Alternative B would, in and of itself, have no direct impact on resources. Any potential effects on resources from the sale of leases would occur during lease exploration and development activities. At the time of this review it is unknown whether a particular lease parcel would be sold and a lease issued.

4.3.2 Indirect Effects Common to All Resources

Oil and gas exploration and development activities such as construction, drilling, production, infrastructure installation, vehicle traffic and reclamation are indirect effects from exploration and development of oil and gas on the parcels in Alternative B.

It is unknown when, where, how, or if future surface disturbing activities associated with oil and gas exploration and development such as well sites, roads, facilities, and associated infrastructure would be proposed. It is also not known how many wells, if any, would be drilled and/or completed, the types of technologies and equipment that would be used and the types of infrastructure needed for production of oil and gas. Thus, the types, magnitude and duration of potential impacts cannot be precisely quantified at this time, and would vary according to many factors. The potential impacts from exploration and development activities would be analyzed after receipt of an APD or sundry notice.

Typical impacts to resources from oil and gas exploration and development activities such as well sites, roads, facilities, and associated infrastructure are described in the Fergus Management Framework Plan (approved January 1978), and the Lewistown District Oil & Gas Environmental Assessment of the BLM Leasing Program (approved September 1981).

4.3.3 Air Resources

4.3.3.1 Direct and Indirect Effects

4.3.3.1.1 Air Quality

Leasing the parcels would have no direct impacts on air quality. Any potential effects from sale of lease parcels could occur at the time the leases are developed.

Potential impacts of development could include increased airborne soil particles blown from new well pads or roads; exhaust emissions from drilling equipment, compressors, vehicles, and dehydration and separation facilities, as well as potential releases of GHGs and VOCs during drilling or production activities. The amount of increased emissions cannot be precisely quantified at this time since it is not known for certain how many wells might be drilled, the types of equipment needed if a well were to be completed successfully (e.g., compressor, separator, dehydrator), or what technologies may be employed by a given company for drilling any new wells. The degree of impact would also vary according to the characteristics of the geologic formations from which production occurs, as well as the scope of specific activities proposed in an APD.

Current monitoring data show that criteria pollutants concentrations are below applicable air quality standards, indicating good air quality. The potential level of development and mitigation described below is expected to maintain this level of air quality by limiting emissions. In addition, pollutants would be regulated through the use of state-issued air quality permits or air quality registration processes developed to maintain air quality below applicable standards.

4.3.3.1.2 Greenhouse Gas Emissions

Sources of GHGs associated with development of lease parcels could include construction activities, operations, and facility maintenance in the course of oil and gas exploration, development, and production. Estimated GHG emissions are discussed for these specific aspects of oil and gas activity because the BLM has direct involvement in these steps. However, the current proposed activity is to offer parcels for lease. No specific development activities are currently proposed or potentially being decided upon for any parcels being considered in this EA. Potential development activities would be analyzed if the BLM receives an APD on any of the parcels considered here.

Anticipated GHG emissions presented in this section are taken from the Climate Change SIR, 2010. Data are derived from emission calculators developed by air quality specialists at the BLM National Operations Center in Denver, Colorado, based on methods described in the Climate Change SIR (2010). Based on the assumptions summarized in the SIR for the MCFO RFD, Table 15 discloses projected annual GHG source emissions from BLM-permitted activities associated with the RFD.

Table 15. BLM Projected Annual GHG Emissions Associated With Oil and Gas Exploration and Development Activity.

Source	BLM Long-Term GHG Emissions in tons/year				Emissions (metric tons/yr)
	CO_2	CH_4	N_2O	CO_2e	CO_2e
Conventional Natural Gas	594	2.1	0.006	640	581
Oil	728	1.4	0.007	759	689
Total	**1,322**	**3.5**	**0.013**	**1,399**	**1,270**

To estimate GHG emissions associated with the action alternatives, the following approach was used:

1. The proportion of each alternative relative to the total RFD was calculated based on total acreage of parcels under consideration for leasing relative to the total acreage of federal mineral acreage available for leasing in the RFD.
2. This ratio was then used as a multiplier with the total estimated GHG emissions for the entire RFD (with the highest year emission output used) to estimate GHG emissions for that particular alternative.

Under Alternative B, approximately 1,442 acres of lease parcels with federal minerals would be leased. These acres constitute approximately 0.11 percent of the total federal mineral estate of approximately 1,329,799 acres identified in the RFD. Therefore, based on the approach described above to estimate GHG emissions, 0.11 percent of the RFD for this EA total estimated

BLM emissions of approximately 1,270 metric tons/year would be approximately 1.4metric tons/year of CO_2e if the parcels within Alternative B were to be developed.

4.3.3.1.3 Climate Change

The assessment of GHG emissions and climate change is in its formative phase. As summarized in the Climate Change SIR, climate change impacts can be predicted with much more certainty over global or continental scales. Existing models have difficulty reliably simulating and attributing observed temperature changes at small scales. On smaller scales, natural climate variability is relatively larger, making it harder to distinguish changes expected due to external forcings (such as contributions from local activities to GHGs). Uncertainties in local forcings and feedbacks also make it difficult to estimate the contribution of GHG increases to observed small-scale temperature changes (Climate Change SIR 2010).

It is currently not possible to know with certainty the net impacts from lease parcel development on climate. The inconsistency in results of scientific models used to predict climate change at the global scale, coupled with the lack of scientific models designed to predict climate change on regional or local scales, limits the ability to quantify potential future impacts of decisions made at this level. It is therefore beyond the scope of existing science to relate a specific source of GHG emission or sequestration with the creation or mitigation of any specific climate-related environmental effects. Although the effects of GHG emissions in the global aggregate are well-documented, it is currently impossible to determine what specific effect GHG emissions resulting from a particular activity might have on the environment. For additional information on environmental effects typically attributed to climate change, please refer to the cumulative effects discussion below.

While it is not possible to predict effects on climate change of potential GHG emissions discussed above in the event of lease parcel development for alternatives considered in this EA, the act of leasing does not produce any GHG emissions in and of itself. Releases of GHGs could occur at the exploration/development stage.

4.3.3.2 Mitigation

The BLM encourages industry to incorporate and implement BMPs to reduce impacts to air quality by reducing emissions, surface disturbances, and dust from field production and operations. Measures would also be required as COAs on permits by either the BLM or the applicable state air quality regulatory agency. The BLM also manages venting and flaring of gas from federal wells as described in the provisions of Notice to Lessees (NTL) 4A, Royalty or Compensation for Oil and Gas Lost.

Some of the following measures could be imposed at the development stage:

- flaring or incinerating hydrocarbon gases at high temperatures to reduce emissions of incomplete combustion;
- emission control equipment of a minimum 95 percent efficiency on all condensate storage batteries;
- emission control equipment of a minimum 95 percent efficiency on dehydration units, pneumatic pumps, produced water tanks;

- vapor recovery systems where petroleum liquids are stored;
- tier II or greater, natural gas or electric drill rig engines;
- secondary controls on drill rig engines;
- no-bleed pneumatic controllers (most effective and cost effective technologies available for reducing VOCs);
- gas or electric turbines rather than internal combustions engines for compressors;
- NO_x emission controls for all new and replaced internal combustion oil and gas field engines;
- water dirt and gravel roads during periods of high use and control speed limits to reduce fugitive dust emissions;
- interim reclamation to re-vegetate areas of the pad not required for production facilities and to reduce the amount of dust from the pads.
- co-located wells and production facilities to reduce new surface disturbance;
- directional drilling and horizontal completion technologies whereby one well provides access to petroleum resources that would normally require the drilling of several vertical wellbores;
- gas-fired or electrified pump jack engines;
- velocity tubing strings;
- cleaner technologies on completion activities (i.e. green completions), and other ancillary sources;
- centralized tank batteries and multi-phase gathering systems to reduce truck traffic;
- forward looking infrared (FLIR) technology to detect fugitive emissions; and
- air monitoring for NO_x and ozone.

More specific to reducing GHG emissions, Section 6 of the Climate Change SIR identifies and describes in detail commonly used technologies to reduce methane emissions from natural gas, coal bed natural gas, and oil production operations. Technologies discussed in the Climate Change SIR and as summarized below in Table 16 (reproduced from Table 6-2 in Climate Change SIR) display common methane emission technologies reported under the EPA Natural Gas STAR Program and associated emission reduction, cost, maintenance and payback data.

Table 16. Selected Methane Emission Reductions Reported Under the USEPA Natural Gas STAR Program [1]

Source Type / Technology	Annual Methane Emission Reduction [1] (Mcf/yr)	Capital Cost Including Installation ($)	Annual Operating and Maintenance Cost ($)	Payback (Years or Months)	Payback Gas Price Basis ($/Mcf)
Wells					
Reduced emission (green) completion	7,000 [2]	$1K – $10K	>$1,000	1 – 3 yr	$3
Plunger lift systems	630	$2.6K – $10K	NR	2 – 14 mo	$7
Gas well smart automation system	1,000	$1.2K	$0.1K – $1K	1 – 3 yr	$3
Gas well foaming	2,520	>$10K	$0.1K – $1K	3 – 10 yr	NR

Table 16. Selected Methane Emission Reductions Reported Under the USEPA Natural Gas STAR Program [1]

Source Type / Technology	Annual Methane Emission Reduction [1] (Mcf/yr)	Capital Cost Including Installation ($)	Annual Operating and Maintenance Cost ($)	Payback (Years or Months)	Payback Gas Price Basis ($/Mcf)
Tanks					
Vapor recovery units on crude oil tanks	4,900 – 96,000	$35K – $104K	$7K – $17K	3 – 19 mo	$7
Consolidate crude oil production and water storage tanks	4,200	>$10K	<$0.1K	1 – 3 yr	NR
Glycol Dehydrators					
Flash tank separators	237 – 10,643	$5K – $9.8K	Negligible	4 – 51 mo	$7
Reducing glycol circulation rate	394 – 39,420	Negligible	Negligible	Immediate	$7
Zero-emission dehydrators	31,400	>$10K	>$1K	0 – 1 yr	NR
Pneumatic Devices and Controls					
Replace high-bleed devices with low-bleed devices					
End-of-life replacement	50 – 200	$0.2K – $0.3K	Negligible	3 – 8 mo	$7
Early replacement	260	$1.9K	Negligible	13 mo	$7
Retrofit	230	$0.7K	Negligible	6 mo	$7
Maintenance	45 – 260	Negl. to $0.5K	Negligible	0 – 4 mo	$7
Convert to instrument air	20,000 (per facility)	$60K	Negligible	6 mo	$7
Convert to mechanical control systems	500	<$1K	<$0.1K	0 – 1 yr	NR
Valves					
Test and repair pressure safety valves	170	NR	$0.1K – $1K	3 – 10 yr	NR
Inspect and repair compressor station blowdown valves	2,000	<$1K	$0.1K – $1K	0 – 1 yr	NR
Compressors					
Install electric compressors	40 – 16,000	>$10K	>$1K	>10 yr	NR
Replace centrifugal compressor wet seals with dry seals	45,120	$324K	Negligible	10 mo	$7
Flare Installation	2,000	>$10K	>$1K	None	NR

Source: Multiple EPA Natural Gas STAR Program documents. Individual documents are referenced in Climate Change SIR (2010).
[1] Unless otherwise noted, emission reductions are given on a per-device basis (e.g., per well, per dehydrator, per valve, etc).
[2] Emission reduction is per completion, rather than per year.
K = 1,000
mo = months
Mcf = thousand cubic feet of methane
NR = not reported
yr = year

In the context of the oil sector, additional mitigation measures to reduce GHG emissions include methane reinjection and CO_2 injection. These measures are discussed in more detail in Section 6.0 of the Climate Change SIR (2010).

In an effort to disclose potential future GHG emission reductions that might be feasible, the BLM estimated GHG emission reductions based on the RFD for the MCFO. For emission

sources subject to BLM (federal) jurisdiction, the estimated emission reductions represent approximately 51 percent reduction in total GHG emissions compared to the estimated MCFO federal GHG emission inventory (Climate Change SIR, as updated October 2010, Section 6.5 and Table 6-3). The emission reductions technologies and practices are identified as mitigation measures that could be imposed during development. Furthermore, the EPA is expected to promulgate new federal air quality regulations that would require GHG emission reductions from many oil and gas sources.

4.3.4 Soil Resources

4.3.4.1 Direct and Indirect Effects

Leasing the parcels would have no direct impacts on soil resources. Any potential effects from the sale of leases could occur at the time the leases are developed. Potential site-specific effects would be addressed in more detail at the APD stage.

Construction and operation of well pads, access roads, pipelines, powerlines, reserve pits, and other facilities would result in the exposure of mineral soil, soil compaction and rutting, mixing of soil horizons, loss of soil productivity, and increased susceptibility to wind and water erosion. The likelihood and magnitude of these occurrences is dependent upon local site characteristics, climatic events, and the specific mitigation applied. Effects would be both short-term (well pads and pipelines) and long-term (production areas and access roads). Areas needed for production, access roads, and facilities would require a long-term commitment of the soil resource. These sites remain non-productive and continue to be at risk of erosion and compacted until abandonment and final reclamation.

Generally sites would be revegetated and erosion would return to natural rates within 5 years. Exceptions would be sites poorly suited for reclamation. These areas, once disturbed, are the most difficult and costly to stabilize and reclaim.

Lease parcels/development would be subject to stipulations that protect soils on slopes over 30 percent, erodible soil on slopes over 20 percent, slumping soils, and/or wet soils. Table 17 shows the approximate acres of soils on slopes over 30 percent and erodible soils on slopes over 20 percent for each lease parcel.

Table 17. Approximate acres of slopes over 30 percent and erodible soils on slopes >20 percent for each Lease Parcel. (Source: USDA-NRCS SSURGO dataset (USDA-NRCS, 2012)).

	>30% slope		Erodible soils on slopes >20%	
Parcel #	Acres[1]	Percent of Lease Parcel	Acres[2,3]	Percent of Lease Parcel
MTM97300-73	70	35	134	67
MTM97300-74	315	29	789	73
MTM97300-75	0	0	2.4	6
MTM97300-PH	0	0	11	9

1. Approximate acres calculated from a Digital Elevation Model (DEM) where slope is >30%. Approximate acres based on GIS calculations. Slopes >30% could be included in the erodible soils on slopes >20% acreage figures.
2. Approximate acres calculated from MU RV slope and Water Erosion Hazard where RV slope > 20% and Water Erosion Hazard is severe. Approximate acres based on GIS calculations.
3. For analysis purposes, if a Soil Map Unit (SMU) has a RV slope >20% and severe Water Erosion Hazard rating then the entire SMU acreage is included. However, there may be areas within the SMU that could have slope values less than 20% and a less than severe Water Erosion Hazard rating. For example, SMU 3 has a RV slope of 30% but the SMU has a slope range from 15 to 45%.

4.3.4.2 Mitigation

In the event of exploration/development, a number of measures would be taken to prevent, minimize, or mitigate effects to soil resources. Prior to authorization, proposed actions would be evaluated on a case-by-case basis and would be subject to mitigation measures in order to maintain the soil system. Typical measures include, but are not limited to:

- Avoiding areas poorly suited to reclamation;
- Limiting the total area of disturbance;
- Stripping and stockpiling topsoil separate from sub-soils/spoil;
- Applying erosion/sediment control/containment products and structures, such as mulch, straw wattles, water bars, rolling dips, silt fence, bale filters, erosion control blankets and mats, cover crops, etc;
- Alleviating compaction;
- Applying soil amendments, when necessary;
- Re-contouring to approximate original contours or blend with surrounding topography;
- Re-seeding with native vegetation;
- Completing interim reclamation on all disturbed areas associated with producing well locations and associated facilities.
- Monitoring for reclamation success and applying additional measures as needed.

Measures included in the Gold Book (USDI-BLM 2007) would be applied. Additional mitigation measures and/or BMPs, if necessary, would be applied once a site-specific plan of development is proposed.

Upon abandonment of wells and/or when access roads are no longer needed, the authorized officer would issue instructions and/or orders for surface reclamation/restoration of the disturbed areas as described in attached conditions of approval (COA).

4.3.5 Water Resources

4.3.5.1 Direct and Indirect Effects

Leasing the parcels would have no direct impacts on water resources. Any potential effects on water resources from sale of lease parcels would occur at the time the leases are developed. The magnitude of the impacts to water resources would be dependent on the specific activity, season, proximity to waterbodies, location in the watershed, upland and riparian vegetation condition, effectiveness of mitigation, and the time until reclamation success. Surface disturbance effects typically are localized, short-term, and occur from implementation through the time of vegetation reestablishment. As acres of surface-disturbance increase within a watershed, so could the effects on water resources.

Lease parcels/development would be subject to stipulations that protect within 500’ or the 25-year flood plain from reservoirs, lakes, and ponds and intermittent, ephemeral or small perennial streams and 1,000’ or the 100-year flood plain from larger perennial streams, rivers, and domestic water supplies. Areas with slopes over 30 percent are also subject to the controlled or limited surface use stipulation. Table 18 shows the approximate acres within these special areas of each lease parcel.

Table 18. Approximate acres within streamside and slopes greater than 30 percent special areas for each lease parcel.

Lease Parcel	Acres within 500' of ephemeral or intermittent streams	Percent of lease parcel	Acres of area of slope greater than 30 percent	Percent of Lease Parcel
MTM97300-73	106	53	75	38
MTM97300-74	704	65	341	32
MTM97300-75	0	0	0	0
MTM97300-PH	25	21	0	0

Oil and gas exploration and development of a lease parcel could cause the removal of vegetation, soil compaction, and soil disturbance in uplands within the watershed, 100-year floodplains of non-major streams, and non-riparian, ephemeral waterbodies. The potential effects from these activities could be accelerated erosion, increased overland flow, decreased infiltration, increased water temperature, channelization, and water quality degradation associated with increased sedimentation, turbidity, nutrients, metals, and other pollutants. Erosion potential can be further increased in the long term by soil compaction and low permeability surfacing (e.g. roads and well pads) which increases the energy and amount of overland flow and decreases infiltration, which in turn changes flow characteristics, reduces groundwater recharge, and increases sedimentation and erosion (DEQ 2007).

Spills or produced fluids could potentially impact surface and ground water resources in the long term. Oil and gas exploration/development could contaminate aquifers with salts, drilling fluids, fluids and gases from other formations, detergents, solvents, hydrocarbons, metals, and nutrients; change vertical and horizontal aquifer permeability; and increase hydrologic communication with adjacent aquifers (EPA 2004). Groundwater removal could result in a depletion of flow in nearby streams and springs if the aquifer is hydraulically connected to such features.

4.3.5.2 Mitigation

Stipulations addressing steep slopes, waterbodies, streams, 100-year floodplains of major rivers, riparian areas, and wetlands would minimize potential impacts and would be included with the lease when necessary (refer to Appendix A). In the event of exploration or development, measures would be taken to reduce, avoid, or minimize potential impacts to water resources including application of appropriate mitigation. Mitigation measures that minimize the total area of disturbance, control wind and water erosion, reduce soil compaction, maintain vegetative cover, control nonnative species, and expedite rapid reclamation (including interim reclamation) would maintain water resources.

Methods to reduce erosion and sedimentation could include: reducing surface disturbance acres; installing and maintaining adequate erosion control; proper road design, road surfacing, and culvert design; road/infrastructure maintenance; use of low water crossings; and use of isolated or bore crossing methods for waterbodies and floodplains. In addition, applying mitigation to maintain adequate, undisturbed, vegetated buffer zones around waterbodies and floodplains could reduce sedimentation and maintain water quality. Appropriate well completion, the use of Spill Prevention Plans, and Underground Injection Control regulations would mitigate groundwater impacts. Site-specific mitigation and reclamation measures would be described in the COAs. Given the fore mentioned mitigation measures, no adverse impacts to water quality

are expected. Riparian-wetland conditions may be affected but not below proper functioning condition (PFC), which is the minimum standard required for all uses of public lands.

4.3.6 Vegetation Resources

4.3.6.1 Direct and Indirect Effects

Leasing the parcels would have no direct impacts on vegetation resources. Any potential effects on vegetation resources from sale of lease parcels would occur at the time the leases are developed. Impacts to vegetation would depend on the vegetation type/community, soil community and the topography of the lease parcels. Disturbance to vegetation is of concern because protection of soil resources, maintenance of water quality, conservation of wildlife habitat, and livestock production capabilities may be diminished or lost over the long-term through direct loss of vegetation (including direct loss of both plant communities and specific plant species).

Other direct impacts, such as invasive species and noxious weed invasion could result in loss of desirable vegetation. Invasive species and noxious weeds may also reduce livestock grazing forage, wildlife habitat quality, and native species diversity. Cheatgrass is an invasive species well known for completely replacing native vegetation and changing fire regimes.

Additionally, surface disturbing activities directly affect vegetation by destroying habitat, churning soils, impacting biological crusts, disrupting seedbanks, burying individual plants, and generating sites for competitive non-native plants including weedy species. In addition, other vegetation impacts could also be caused from soil erosion and result in loss of the supporting substrate for plants, or from soil compaction resulting in reduced germination seed rates. Impacts to plants occurring after seed germination but prior to seed set could be particularly harmful as both current and future generations would be affected.

Fugitive dust generated by construction activities and travel along dirt roads can affect nearby plants by depressing photosynthesis, disrupting pollination, and reducing reproductive success. Oil, fuel, wastewater or other chemical spills could contaminate soils as to render them temporarily unsuitable for plant growth until cleanup measures were fully implemented. If cleanup measures were less successful, longer term vegetation damage could be expected.

Oil and gas development activity could affect the management of livestock grazing while meeting or progressing towards meeting the Standards of Rangeland Health. Development and associated disturbances, would reduce available forage or alter livestock distribution leading to overgrazing or other localized excess grazing impacts. Construction of roads, especially in areas of rough topography can cause significant changes in livestock movement and fragment suitable habitat for some plant communities. Where grazing activity or other BLM authorized activities contribute to not meeting the Standards for Rangeland Health, the authorized officer must adjust grazing management practices or levels of use prior to the next grazing season.

If development activity is reducing vegetative resources for livestock grazing and the grazing activity is resulting in the allotment not meeting the standards for rangeland health, then the authorized officer would have to take action prior to the next grazing season to ensure the BLM

lands are progressing towards meeting the standards. This would result in the change of livestock grazing activities in order to improve vegetative conditions.

4.3.6.2 Mitigation

Mitigation would be addressed at the site specific APD stage of exploration and development. If needed, COAs would potentially include revegetation with desirable plant species, soil enhancement practices, direct live haul of soil material for seed bank revegetation, reduction of livestock grazing, fencing of reclaimed areas, and the use of seeding strategies consisting of native grasses, forbs, and shrubs, would be identified and addressed at the APD stage.

4.3.7 Riparian-Wetland Habitats

4.3.7.1 Direct and Indirect Effects

Leasing the parcels would have no direct impacts on riparian-wetland habitats. Any potential effects on riparian-wetland habitats from sale of lease parcels would occur at the time the leases are developed. The exploration and development of oil and gas within uplands or adjacent to riparian-wetland areas could reduce riparian/wetland functionality by changing native plant productivity, composition, richness, and diversity; accelerating erosion; increasing sedimentation; and changing hydrologic characteristics. Impacts that reduce the functioning condition of riparian and wetland areas would impair the ability of riparian/wetland areas to reduce nonpoint source pollution (MDEQ 2007) and provide other ecosystem benefits. The magnitude of these effects would be dependent on the specific activity, season, proximity to riparian-wetland areas, location in the watershed, upland and riparian-wetland vegetation condition, mitigation applied, and the time until reclamation is achieved. Erosion increases typically are localized, short term, and occur from implementation through vegetation reestablishment. As acres of surface-disturbance increase within a watershed, so would the effects on riparian-wetland resources.

4.3.7.2 Mitigation

Stipulations addressing steep slopes, waterbodies, streams, 100-year floodplains of major rivers, riparian areas, and wetlands would minimize potential impacts and would be included with the lease when necessary (refer to Appendix A). In the event of exploration or development, site-specific mitigation measures would be identified which would avoid or minimize potential impacts to riparian-wetland areas at the APD stage. Mitigation measures that minimize the total area of disturbance, control wind and water erosion, reduce soil compaction, maintain vegetative cover, control nonnative species, maintain biodiversity, maintain vegetated buffer zones, and expedite rapid reclamation (including interim reclamation) would maintain riparian/wetland resources.

4.3.8 Wildlife

4.3.8.1 Direct and Indirect Effects (General Discussion Applicable to Wildlife and Fish)

The project area is the footprint of the offered lease parcels. The analysis area includes the lease parcels and the adjacent 1500 meters. Leasing the parcels would have no direct impacts on wildlife. Any potential effects from the sale of lease parcels could occur indirectly at the time the leases are developed. Oil and gas development (well pad establishment and drilling) is typically short-term, while production is generally less intensive and long-term (multiple decades). The sections below that refer to “oil and gas development” are intended to include

both the short-term construction and drilling and long-term production as part of the indirect effects analysis. Additional NEPA is required at the APD stage prior to lease development and associated production.

Based on the RFD scenarios, direct habitat loss is possible. Oil and gas development which results in surface disturbance could directly and indirectly impact aquatic and terrestrial wildlife species. These impacts could include loss or reduction in suitability of habitat, improved habitat for undesirable (non-native) competitors, species or community shift to species or communities more tolerant of disturbances, nest abandonment, mortalities resulting from collisions with vehicles and power lines, electrocutions from power lines, barriers to species migration, habitat fragmentation, increased predation, habitat avoidance, and displacement of wildlife species resulting from human presence (Naugle 2011). The scale, location, and pace of development, combined with implementation of mitigation measures and the specific tolerance of the species to human disturbance all influence the severity of impacts to wildlife species and habitats.

The use of standard lease terms and stipulations on these lands (Appendix A) would minimize, but not preclude impacts to wildlife. The recent book Energy Development and Wildlife Conservation in Western North America states: "noise…from drilling and maintenance activities took 500 meters (EnCana 2007) to fall at or below the suggested maximum threshold of 49 decibels in the vicinity of breeding songbirds and raptors (Wyoming Fish and Game Department 2009) and was still greater than 25 decibels at the furthest distance measured (1.5 kilometers)" (Naugle 2011). Table 19 shows 5,971 and 15,635 acres of various habitats within 500 meters and 1500 meters respectively of offered lease parcels. Big sagebrush steppe is the dominant habitat type within 1500 meters of the offered parcels (4,505 acres), followed by mixedgrass prairie (2,536 acres) and cultivated cropland (2,432 acres). Research in Sublette County, Wyoming on the effects of natural gas development on sagebrush steppe passerines documented negative impacts to sagebrush obligates such as Brewer's sparrows, sage sparrows, and sage thrashers. (Ingelfinger 2001) The impacts were reported greatest along roads where traffic volumes are high and within 100 meters of these roads. Sagebrush obligates were reduced within these areas by as much as 60%. Sagebrush obligate density was reduced by 50% within 100 meters of a road even when traffic volumes were less than 12 vehicles /day. It would be expected that similar population declines would occur to this guild of species from similar development proposals within sagebrush habitats. Similar impacts (although magnitudes would likely differ) would also be expected for species in other habitats that exhibit negative responses to habitat fragmentation and increased traffic/disturbance.

It is anticipated that some development could occur adjacent to existing disturbances of some type. Depending on proximity and species tolerance, wildlife species within these areas could either have acclimated to the surrounding conditions, previously been displaced by construction activities, or could be caused to be displaced to other areas with or without preferred habitat.

Potential impacts to aquatic species from development could include: overland oil spills, underground spills from activities associated with horizontal drilling or other practices, spills from drilling mud or other extraction and processing chemicals, and surface disturbance activities that create a localized erosion zone. Oil spills and other pollutants from the oil extraction process could harm the aquatic wildlife species in two different ways if the spill

substances enter the habitat. First, toxicological impacts from direct contact could have immediate lethal effects to eggs, larvae, juveniles, and adults. Second, toxic effects to lower food web levels (e.g. aquatic macro-invertebrates) could indirectly affect fish, amphibian, and reptile species by degrading water quality and degrading or eliminating food resources.

Table 19. Acres of Mapped ReGap Habitat within 500 and 1500 meters of each Offered Lease Parcel.

ReGap Habitat Classifications (Level 3)	500 Meter Buffer				1500 Meter Buffer		
	73/75	74	PH	Total	73-5	PH	Total
Cultivated Cropland	0	405	354	**759**	746	1686	**2432**
Developed, Low Intensity	0	0	**4**	**4**	0	14	**14**
Developed, Open Space	0	0	0	**0**	11	27	**38**
Inter-Mountain Basins Big Sagebrush Steppe	540	1147	0	**1686**	4505	0	**4505**
Inter-Mountain Basins Greasewood Flat	0	29	4	**32**	118	4	**122**
Introduced Upland Vegetation - Perennial Grassland and Forbland	68	478	181	**726**	1273	432	**1705**
Northern Rocky Mountain Foothill Conifer Wooded Steppe	128	305	0	**432**	1135	0	**1135**
Northern Rocky Mountain Lower Montane, Foothill and Valley Grassland	0	0	0	**0**	0	110	**110**
Northwestern Great Plains - Black Hills Ponderosa Pine Woodland and Savanna	234	253	0	**487**	953	0	**953**
Northwestern Great Plains Mixedgrass Prairie	72	311	506	**889**	971	1564	**2536**
Northwestern Great Plains Riparian	4	283	0	**287**	410	0	**410**
Northwestern Great Plains Shrubland	0	0	82	**82**	0	319	**319**
Open Water (Fresh)	0	1	0	**1**	1	2	**4**
Pasture/Hay	0	0	0	**0**	0	1	**1**
Rocky Mountain Lower Montane Riparian Woodland and Shrubland	0	0	38	**38**	0	234	**234**
Western Great Plains Badland	93	385	0	**479**	954	0	**954**
Western Great Plains Cliff and Outcrop	0	18	0	**18**	20	0	**20**
Western Great Plains Closed Depression Wetland	0	0	0	**0**	0	10	**10**
Western Great Plains Open Freshwater Depression Wetland	0	0	0	**0**	0	1	**1**
Western Great Plains Sand Prairie	0	11	0	**11**	11	0	**11**
Western Great Plains Wooded Draw and Ravine	3	24	10	**37**	59	65	**124**
Grand Total	**1142**	**3649**	**1179**	**5971**	**6375**	**3290**	**15635**

4.3.8.1.1 Threatened, Endangered Proposed, and Candidate Species

Pondera County parcel PH could be used by grizzly bears as a travel corridor since it contains the South Fork of the Dry Fork of the Marias River. The parcel occurs south of the recent telemetry confirmation of a grizzly bear sow and two yearlings located in April 2012 along the

Dry Fork of the Marias River. Although we cannot verify at this time that finding is an atypical or an isolated event, it is consistent with on-going migration of grizzly bears east onto the plains. In and of itself, the parcel would be insufficient for extended use by grizzly bears because of its small size and its separation from suitable habitat along the Dry Fork of the Marias River. Oil and gas development of parcel PH could cause grizzly bears that do intermittently use the parcel to avoid the area, but the area could remain available as a travel corridor. Parcel PH is found in the area east of Hwy. 89, outside the NCDE grizzly bear recovery zone; this area is not managed to provide grizzly bear habitat. The area is highly fragmented with agricultural development and associated roads. Most of the surface within parcel PH is currently in agricultural production and a residence is located approximately 0.5 miles south. Therefore, oil and gas development on the parcel would be consistent with other anthropogenic activity that occurs in the vicinity, and for this reason we have determined that issuing a lease for possible future oil and gas development on Parcel PH would have no effect on the grizzly bear. Future applications for permits to drill on Parcel PH would be subject to consultation pursuant to section 7(a)(2) of the Endangered Species Act of 1973, as amended.

There are approximately 1,000 acres mapped as sage-grouse PGH. Parcels 73 and 74 have 53 and 369 acres of mapped sagebrush habitat respectively. The Fergus County parcels contain 40,399 acres and 4,505 acres of big sagebrush steppe in the Dog Creek 5th code watershed (MNHP 2012a) and within 1500 meters respectively. The easternmost tracts (280 acres) of parcel 74 were deferred because they contained small portions of quality sagebrush habitats that were used by sage grouse and located closer to active leks (less than three miles). The remaining tracts of parcel 74 are at the edge of the sage grouse mapped distribution and PGH and at least 4 miles from an active lek. Parcel 73 has sagebrush habitat immediately adjacent to ponderosa pine forest within PGH and is seven miles from the nearest lek. The primarily broken habitat with ponderosa pine trees and surrounding agriculture fields greatly limit potential use by sage-grouse. The small amounts of sagebrush within parcels 73 and 74 are currently poor quality habitat for the reasons listed above and use by Greater Sage-Grouse within the offered tracts is expected to be minimal. Potential development of the offered tracts would not be expected to affect the population or listing status. Potential site-specific effects would be addressed in more detail at the APD stage.

All parcels/tracts containing potential Sprague's pipit nesting habitat were deferred. The remaining offered parcels contain 93 acres of Northwestern Great Plains Mixedgrass Prairie habitat. The Fergus and Pondera County parcels contain 971 and 1,564 acres respectively within 1500 meters. The 5th code watersheds (Dog Creek and Upper Dry Fork Marias River) contain 42,067 acres and 23,059 acres of Northwestern Great Plains Mixedgrass Prairie habitat respectively (MNHP 2012a and 2012b). Agriculture is the dominant land use (over 30% of each watershed) for both areas. Standard stipulations would be able to further minimize potential effects to Sprague's pipit and potential development would most likely occur on currently disturbed lands. Potential development of the offered tracts would not be expected to affect the population or listing status. Potential site-specific effects would be addressed in more detail at the APD stage.

4.3.8.1.2 Other Special Status Species

Bald eagles, Golden eagles, Ferruginous and Swainson's hawk
Parcels 73 and 74 contain potential nesting habitat for ferruginous hawks. Potential foraging habitat covers most non-forested portions of the state and development would not impact use of the area. Other impacts could include raptors' use of buildings for perches. Raptors that may utilize these perches include bald eagles, golden eagles (*Aguila chrysaetos*), Swainson's hawk, and ferruginous hawk. This may result in increased predation on small mammals and birds since this will provide a perch for raptors in an area that previously did not provide perches. Potential site-specific effects would be addressed in more detail at the APD stage.

Bats
No known roosts occur in the vicinity of the proposed lease parcels. The highest potential for use occurs at standing water bodies, followed by roosting habitat located in the parcels. Standard stipulations would preclude surface occupancy proximate to water in all proposed parcels. Potential site-specific effects would be addressed in more detail at the APD stage.

Amphibians
Northern leopard frogs, Great Plains toads and Plains spadefoot all have potential breeding habitat within the proposed lease parcels. Standard stipulations would preclude surface occupancy proximate to water in all proposed parcels. Additional potential site-specific effects would be addressed in more detail at the APD stage.

Reptiles
Greater short-horned lizards are likely to occur at all lease parcels. Little is known about milk snakes and western hog-nosed snakes in Montana, with only a handful of observations. Minimizing ground disturbance associated with development would minimize potential impacts. Standard stipulations would preclude surface occupancy proximate to water in all proposed parcels. Additional potential site-specific effects would be addressed in more detail at the APD stage would mitigate potential impacts.

Sagebrush Associates
Dense sagebrush habitat only occurs in parcels 73, 74 and 75. Sagebrush habitats within these parcels comprise approximately 459 acres. There are 1,686 acres and 4,505 acres of mapped big sagebrush within 500 and 1500 meters of the parcels respectively (Table 20). Parcels 73 and 75 are adjacent to a larger continuous sagebrush stand. Parcel 74 is primarily numerous small stands fragmented by other habitats and agriculture. Sagebrush passerine associates including Brewer's sparrow and sage thrasher could be impacted by oil or gas development in these areas (see the general discussion in section 4.3.8.1). Additional potential site-specific effects would be addressed in more detail at the APD stage and would reduce potential impacts.

Migratory Birds
Numerous species of birds were identified as inhabitants across the analysis area. Table 20 shows 5,971 and 15,635 acres of various habitats within 500 meters and 1500 meters respectively of offered lease parcels. MNHP 2012b contains an exhaustive list of species commonly and occasionally associated with the habitat types identified in Table 20.

Effects to migratory birds from oil and gas development could include direct loss of habitat from roads, well pads and other infrastructure, disturbance (both noise and human presence), powerline strikes and accidental direct mortality, fragmentation of habitat, change in use of habitats, and potential threats and competition from edge species. Field surveys for nesting birds at proposed development sites would be conducted for activities planned between May 1 and August 30. Mitigation measures would be assigned at the APD stage to ensure there would be no measurable negative effect on migratory bird populations, in compliance with Executive Order 13186 and MBTA. These mitigation measures would be required as Conditions of Approval. A NSO stipulation for oil and gas surface disturbing activities in riparian and wetland areas would prohibit any potential oil and gas development in those habitats unless approval was granted through the "Waivers, Exceptions, and Modifications" (WEM) process. BLM would coordinate WEMs with USFWS to assure MBTA compliance.

Impacts to BLM sensitive species would be similar to those described above, unless they are afforded protective measures from other regulations such as the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703) or the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668c). BLM does not consult with the USFWS on "sensitive" species and likewise would not receive terms and conditions from USFWS requiring additional protections of those species.

Stipulations do not exist specifically for the protection of BLM sensitive songbirds. The MBTA prohibits the take, capture or kill of any migratory bird, any part, nest or eggs of any such bird (16 U.S.C 703 (a)). NEPA analysis pursuant to Executive Order 13186 (January 2001) requires BLM to ensure that MBTA compliance and the effects of Bureau actions and agency plans on migratory birds are evaluated, should reduce take of migratory birds and contribute to their conservation.

All raptor species known to exist within the analysis area are considered migratory under MBTA. There are no known raptor nests within any proposed leases.

Take of bald and golden eagles and any other migratory raptors is not anticipated through this action; however, take may occur indirectly as a result of vehicle collisions and other related actions associated with development. Field surveys for raptors at proposed development sites would be conducted. Mitigation measures would be assigned at the APD stage to ensure there would be no measurable negative effect on raptor populations, including bald and golden eagles. These mitigation measures would be required as Conditions of Approval. The application of stipulations and COA's at the project level is expected to comply with MBTA and BGEPA

4.3.8.1.3 Other Fish and Wildlife

Generally oil and gas development impacts ungulates (deer, elk and antelope) by displacing them from roads, reducing habitat quality/availability in these areas and causing them to avoid other areas of human disturbance (Hebblewhite 2011). Mule deer avoided areas close to development, with responses occurring within one year of development and avoidance increased over the course of the three year study. "Sawyer et al. (2006) reported lower predicted probabilities of use within 2.7-3.7 kilometers of well sites, confirming that indirect habitat losses far exceeded direct losses. Over the study, areas classified as high-quality habitat before development changed to low quality, and vice versa, showing that mule deer shifted their habitat use away

from high-quality habitats to marginal habitats in response to development" (Naugle 2011). In a related mule deer study densities declined by about 47 percent over a 4 year period (Sawyer et al. 2005b, 2006 in Naugle 2011).

Additional oil and gas development and associated fragmentation/disturbance would be expected to suppress ungulate populations, with secondary effects to associated predators. Game birds would also be affected, but to a lesser extent than ungulates. This is primarily due to pheasants and gray partridge thriving in an agricultural environment (which would be minimally affected from development).

4.3.8.2 Mitigation

Stipulations in Appendix A would be implemented to prevent, minimize, or mitigate impacts to fish and wildlife animal species from exploration and development activities. Prior to authorization, activities would be evaluated on a case-by-case basis, and the project would be subject to mitigation measures. Mitigation could include rapid revegetation, project relocation, and/or pre-disturbance wildlife species surveying. Additional mitigation could occur as COAs at the APD stage. These conditions could include the placement of earthen berms and oil skimmers (in ephemeral drainages where fish passage will not be blocked) to help protect aquatic wildlife habitat in case of oil spills.

4.3.9 Special Status Plant Species

4.3.9.1 Direct and Indirect Effects

Leasing the parcels would have no direct impacts on special status plant species. Any potential effects from the sale of leases would occur at the time the leases are developed. During surface disturbing activities associated with the proposed development of the lease there is a potential for special status plants to be affected by the development. The parcels located in Pondera County is primarily an agricultural field. Negative impacts to these species on previously disturbed sites is unlikely.

4.3.9.2 Mitigation

Stipulations applied to wildlife resources, steep slopes, waterbodies, streams, 100-year floodplains of major rivers, riparian areas, and wetlands would likely also provide protections for special status plant species. Proposed development would be analyzed on a site-specific basis prior to approval of oil and gas exploration or development activities at the APD stage**.** Mitigation would also be addressed at the site-specific APD stage. Surveys to determine the existence of federally listed species could occur on BLM-administered split estate surface minerals prior to approval of exploration and development activities at the APD stage.

4.3.10 Cultural Resources

4.3.10.1 Direct and Indirect Effects

Leasing a nominated parcel gives a basic right to the operator to develop the lease in accordance with any stipulations incorporated into the terms of the lease for the protection of resource values. However, it is during surface disturbing activities associated with the proposed development of the lease that there is a potential for cultural resources to be affected by the proposed action. It is only when the Application for a Permit to Drill is submitted to develop the lease that drilling locations are known and cultural resource investigations can be completed

for the proposed development and any other ancillary activities such as roads, transmission lines, and pipelines.

When the Application for a Permit to Drill (APD) is received, specific oil and gas development actions are proposed, the resulting area of potential effect (APE) is defined, and then assessments of the impacts on cultural resources can be undertaken in order to comply with Section 106 of the National Historic Preservation Act (NHPA). A Class III cultural resource inventory will be necessary for those parcels where the proposed APE has not been previously surveyed and/or for those parcels where the APE has been judged inadequately surveyed in the past. Cultural Resources stipulation 16-1 will apply to all parcels (Appendix A). In the event that cultural resources are identified within the APE, an evaluation of National Register eligibility will occur for each identified cultural property. Measures for the protection of cultural resources determined to be eligible to the National Register of Historic Places (NRHP) will have to be followed for those cultural resources directly and/or indirectly impacted by the proposed development in accordance with Lease Notice 16-1 (Appendix A).

Direct and indirect impacts are not anticipated from leasing nominated parcels. It is at the APD stage of development that specific impacts can be correctly assessed. Potential direct impacts to cultural resources at the APD stage include damage to archaeological sites through construction activities (e.g. pad construction, road building, well drilling, etc.). Other effects to cultural resources from surface disturbance activities include the destruction, damage, or alteration to all or part of the cultural resource and diminishing the property's significant historic features as a result of the introduction of visual, atmospheric, or audible elements. This could include altering or diminishing the elements of a National Register eligible property and diminish an eligible property's eligibility status.

Potential indirect impacts from lease development may include increased erosion resulting from surface disturbing activities, increased vandalism resulting from improved access to the area, abrasive dust and vibrations from drilling equipment and damage to rock art sites from gas emissions. Indirect effects from development activities have the potential to alter the characteristics of a significant cultural or historic property by diminishing the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Conversely, cultural resource investigations associated with development potentially adds to our understanding of the prehistory/history of the area under investigation and discovery of sites that would otherwise remain undiscovered due to lack of inventory or investigation.

Climate change may have an effect on cultural resources by changing the frequency and severity of natural events, such as heavy rain and wildfires (Agee 1993; Maslin 2004). Heavy rain increases the likelihood of flooding and soil erosion which could impact an archaeological site by exposing, removing, and displacing archaeological materials. Wildfires can affect the morphology of artifacts through fracturing and discoloration which can reduce an artifact's ability to render information about the past (Winthrop 2004). Wildfires can also destroy organic materials such as bone, wood, and pollen that provide information about past environments and subsistence. Furthermore, fire suppression activities (e.g. fire retardant and fire line construction) and increased artifact exposure from vegetation burn-off, can also have an adverse impact on archaeological sites.

Lease parcels MTM 97300 73,74 and 75 are located in Fergus County and include 1,322 acres. Based upon modeling results for the Field Office as determined by the Class I Overview, the parcels might contain up to 23 cultural sites. This number is most likely much higher than would appear on the proposed parcels since the average site density for Fergus County factors in sites recorded within the Lewistown city limits. Lease parcel MTM 97300 PH is located in Pondera County and includes 120 acres. Based on modeling results taken from the Class I Overview of the Lewistown Field Office, the parcel may contain up to 37 cultural sites. Since the majority of recorded sites in Pondera COunty are historic, the documentation of historic homes in towns skews the results and inflates the likelihood of encountering cultural sites.

4.3.10.2 Mitigation

Each nominated lease parcel would have the standard lease notice attached and the special cultural resource stipulation as written in IM 2005-030. Refer to Appendix A of this document for pertinent parcel-specific lease stips as needed.

Specific mitigation measures, including, but not limited to possible site avoidance or excavation and data recovery would be determined when site specific development proposals are received. If a conflict were to exist between the proposed action and the presence of cultural resources, mitigation measures would be factored into the project's design. Such measures could include complete documentation of the site to exhaust its information potential, evaluating the site and making a determination that the site is not eligible for inclusion on the National Register of Historic Places, avoiding the site through project redesign or implementing protective measures to prevent impacts to the characteristics of the site that make the site eligible.

4.3.11 Native American Religious Concerns

4.3.11.1 Direct and Indirect Effects

Leasing the parcels would have no direct impacts on Native American religious concerns. Any potential effects from the sale of leases would occur at the time the leases are developed.

Leasing would not have an impact on TCPs and/or areas of religious or cultural importance to tribes. A lease sale would not interfere with the performance of traditional ceremonies and rituals pursuant to the American Indian Religious Freedom Act (AIRFA) or EO 13007. It would not prevent tribes from visiting sacred sites or prevent possession of sacred objects. Indirect effects from site specific development proposals could have an impact to Native American religious practices and TCPs.

4.3.12 Paleontology

4.3.12.1 Direct and Indirect Effects

Leasing the parcels would have no direct impacts on paleontological resources. Any potential effects from the sale of leases would occur at the time the leases are developed.

The surface disturbances associated with oil and gas exploration and development activities could have indirect effects to paleontological resources primarily in areas classified as Potential Fossil Yield Classification (PFYC) 4 or 5 areas. Surface-disturbing activities could potentially alter the characteristics of paleontological resources through damage, fossil destruction, or disturbance of the stratigraphic context in which paleontological resources are located, resulting in the loss of important scientific data. However, in most surface-disturbing situations,

paleontological resources would be avoided by project redesign or relocation before project approval which would negate the need for the implementation of mitigation measures.

Conversely, surface-disturbing activities can also potentially lead to the discovery of paleontological localities that would otherwise remain undiscovered due to burial or omission during review inventories. The scientific study to retrieve and interpret important paleontological resource information provides a better understanding of the nature and distribution of those resources. The retrieval and interpretation of information is most successful and meaningful when a site is left intact.

Once a parcel is leased, the application of standard lease terms (movement of activities by 200 meters or delay of up to 60 days) would protect vulnerable significant paleontological resource values on these lease parcels. In most instances this may be sufficient to provide the necessary protection to paleontological values. However, the application of standard lease terms may not always adequately protect paleontological values. In order to protect paleontological values, paleontological resources management relies on the application of Lease Notice MT-14-12, applied at the leasing phase to provide protection to paleontological resources or at least notification to the lessee that potentially significant paleontological resources are or are likely to be present on the lease parcels should the lease parcel fall within one of the designated PFYC Class 4 or 5 significant geologic formations which have a record of producing significant fossils.

The paleontological lease notice would be applied to those lease parcels that fall within the PFYC 4 or 5 areas, requiring a field survey prior to surface disturbance. Paleontological resource surveys conducted prior to surface-disturbing activities could locate additional paleontological resources and would result in a better understanding of the nature and distribution of those resources.

4.3.12.2 Mitigation

The use of standard lease terms and the lease notice protect paleontological resource values on these lease parcels (refer to Appendix A). The application of these requirements at the leasing phase provides protection to paleontological values. The paleontological lease notice would be applied to those lease parcels that fall within the PFYC 4 or 5 areas, requiring a field survey prior to surface disturbance. These inventory requirements should result in the identification of paleontological resources and avoidance or mitigation of significant localities before permit approval and prior to surface disturbance. However, the application of standard lease terms only allows the relocation of activities up to 200 meters, unless documented in the NEPA document, and cannot result in moving the activity off lease.

Specific mitigation measures could include, but are not limited to, site avoidance or excavation. Avoidance of paleontological properties would be a best management practice. However, should a paleontological locality be unavoidable, significant properties would be mitigated prior to implementation of a project. These measures would be determined when site specific development proposals are received.

Based on the above analysis, in order to protect potential paleontological values the following Leases are recommended to have the Paleontological Lease Notice, (MT-14-12) applied per

guidance identified in Instructional Memorandums 2009-011 and 2008-009. Leases recommended for paleontological lease notice are listed by county: Fergus County MTM97300-73, 74, and 75. See Appendix A for specific legal description.

4.3.13 Visual Resources

4.3.13.1 Direct and Indirect Effects

Leasing the parcels would have no direct impacts on visual resources. Any potential effects from the sale of leases would occur at the time the leases are developed.

Parcels with private surface are not classified with the VRM system. The BLM surface lease parcels fall into VRM classes II and IV. Two hundred acres are located within VRM class II and 240 acres are located with VRM class IV. Split estate parcels in Pondera County are located 18 miles northeast of VRM class I BLM land and the split estate parcels are adjacent to VRM class II. While the act of leasing federal minerals produces no visual impacts, subsequent development (indirect effects) of a lease parcel would result in some level of modification to the existing landscape.

4.3.13.2 Mitigation

All new oil and gas development would implement, as appropriate for the site, BLM Best Management Practices for VRM, regardless of the VRM class. This includes, but would not be limited to: proper site selection, reduction of visibility, minimizing disturbance, selecting color(s)/color schemes that blend with the background from the BLM Standard Environmental Colors Chart and reclaiming areas that are not in active use. Repetition of form, line, color and texture when designing projects would reduce contrasts between landscape and development. Wherever practical, no new development would be allowed on ridges or mountain tops. Overall, the goal would be to not reduce the visual qualities or scenic value that currently exists.

Specifically, visual impacts could be minimized in the Class II areas by the use of the lease stipulation. The stipulation states "all surface-disturbing activities, semi-permanent and permanent facilities in VRM Class II, areas may require special design, including location, painting, and camouflage, to blend with the natural surroundings and meet the visual quality objectives for the area." In addition those modifications should follow the existing form, line, color and texture of the current landscape. For parcels adjacent to VRM class I BLM land, protection of viewsheds will be critical. Measures would be taken to mitigate the visual impacts within a Class III and Class IV area to protect the scenic value.

4.3.14 Livestock Grazing

4.3.14.1 Direct and Indirect Effects

Leasing the parcels would have no direct impacts on livestock grazing. Any potential effects from the sale of leases would occur at the time the leases are developed.

Oil and gas development could result in a loss of vegetation for livestock grazing (e.g., direct removal, introduction of unpalatable plant species, etc.), decrease the palatability of vegetation due to fugitive dust, disrupt livestock management practices, involve vehicle collisions, and decrease grazing capacity. Direct losses of forage could also result from construction of roads, well pads and associated infrastructure and would vary depending on the extent of development.

These impacts could vary from short-term impacts to long-term impacts depending on the type of exploration or development, the success of reclamation, and the type of vegetation removed for the oil and gas activities.

4.3.15.2 Mitigation

Measures would be taken to prevent, minimize, or mitigate impacts to livestock grazing from exploration and development activities. Prior to authorization, activities would be evaluated on a case-by-case basis, and the project would be subject to mitigation measures. Mitigation could potentially include controlling livestock movement by maintaining fence line integrity, fencing of facilities, revegetation of disturbed sites, and fugitive dust control.

4.3.15 Recreation and Travel Management

4.3.15.1 Direct and Indirect Effects

Leasing the parcels would have no direct impacts on recreation and travel management. Any potential effects from the sale of leases would occur at the time the leases are developed.

Recreation impacts may exist where oil and gas development and recreational user conflicts may occur. In areas where a high level of oil and gas development is likely, there may be user conflicts between motorized recreationists (OHV activities), hunting, target shooting, camping, fishing, river use, picnicking, and winter activities such as snowmobiling and the oil and gas/industrial activities. The intensity of these impacts is moderate and could exist in both the short-term (exploration and construction phases of oil and gas development) and in the long-term (producing wells, maintenance of facilities, etc.). Recreationists would lose some beneficial outcomes such as loss of important sense of place, solitude and a possible increase of stress.

Where there are other land use activities occurring, including oil and gas development, in areas frequented by recreationists, the public may perceive these areas as inaccessible or unavailable because of the facilities or recreationists may use lease roads to access areas for recreational activities. Potential public safety hazards/risks include: moving equipment, operator vehicles, transport vehicles for oil and gas, oil and gas wells, etc. However, this will be addressed in more detail at the development stage.

As oil and gas development occurs, new routes are created which often attract recreationists seeking additional or new areas to explore for motorized recreational opportunities. Motorized recreational opportunities could be enhanced through the additional opportunities to explore; however, user conflicts and public safety issues could result from the use of the new travel routes. The creation of routes from oil and gas activities could lead to a proliferation of user-created motorized routes, resulting in adverse impacts to the scenic qualities of the area and increased level of surface disturbance. These impacts would be isolated to BLM-administered public lands and could be minimized and avoided through mitigation and reclamation of industrial routes when no longer needed.

For those areas with isolated tracks of BLM public lands that generally do not have existing public access, recreation opportunities that occur in these areas are limited to use with adjacent land owner permission or hunting by an outfitter; therefore, oil and gas activities would have little or no impact on recreational experiences in this area.

Foreseeable changes in recreation use levels include demand for recreational use of public land to increase. Increases could be expected in, but not limited to, hunting, fishing, hiking, camping, wildlife viewing, and dispersed recreational uses. This could increase the incidence of conflict between recreationists involved in motorized activities and non-motorized activities.

4.3.16 Lands and Realty

4.3.16.1 Direct and Indirect Effects

Leasing the parcels would have no direct impacts on lands and realty. Any potential effects from the sale of leases would occur at the time the leases are developed.

Facilities associated with oil and gas development could cause disturbance to existing rights-of-way on federal surface; however there are currently no authorized rights-of-way for the parcels identified here (Parcels MTM-97300-73, 74, 75, PH). Additional rights-of-way could be required across federal surface for "off-lease" or third party facilities required for potential development of the parcel.

4.3.16.2 Mitigation

Measures would need to be taken to avoid disturbance to or impacting any existing rights-of-way on federal surface on parcels MTM-97300-73, 74, 75, and PH in the event of any exploration and development activities on the leased parcels. Any new "off-lease" or third party rights-of-way required across federal surface for future exploration and/or development of these parcels would be subject to stipulations to protect other resources as determined by environmental analyses which would be completed on a case-by-case basis.

4.3.17 Minerals

4.3.17.1 Fluid Minerals

4.3.17.1.1 Direct and Indirect Effects

Leasing the parcels would have no direct impacts on fluid minerals. Any potential effects from the sale of leases would occur at the time the leases are developed.

Issuing a lease provides opportunities to explore for and develop oil and gas. Additional natural gas or crude oil produced from any or all of the 4 parcels would enter the public markets. The production of oil and gas results in the irreversible and irretrievable loss of these resources. Royalties and taxes would accrue to the federal and state treasuries from the lease parcel lands. There would be a reduction in the known amount of oil and gas resources.

Stipulations applied to various areas with respect to occupancy, timing limitation, and control of surface use could affect oil and gas exploration and development, both on and off the federal parcel. Leases issued with major constraints (NSO stipulations) may decrease some lease values, increase operating costs, and require relocation of well sites, and modification of field development. Leases issued with moderate constraints (timing limitation and controlled surface Use (CSU) stipulations) may result in similar but reduced impacts, and delays in operations and uncertainty on the part of operators regarding restrictions.

Under Alternative B, all of the lease parcels would be offered for lease subject to major (NSO) or moderate (CSU) constraints and/or standard lease terms and conditions.

4.3.18 Social and Economic Conditions
4.3.18.1 Social
4.3.18.1.1 Direct and Indirect Effects
While the act of leasing Federal minerals itself would result in no social impact, subsequent exploration and development may generate impacts to people living near or using the area in the vicinity of the lease. Exploration, drilling or production could create an inconvenience to people living adjacent to leases due to increased traffic and traffic delays, and light, noise and visual impacts. This could be especially noticeable in rural areas where oil and gas development has not occurred previously. The amount of inconvenience would depend of the activity affected, traffic patterns within the area, noise and light levels, length of time and season these activities occur, etc. Residents of counties where the development actually occurs could benefit from the additional revenues to counties due to oil and gas leasing and development. For leases where the surface is privately owned, surface owner agreements, standard lease stipulations, and best management practices could address the concerns of private surface owners.

There would be no disproportionate effects to low income or minority populations. Consultation with potentially affected Tribes would occur at the APD stage.

4.3.18.2 Economics
4.3.18.2.1 Direct and Indirect Effects
The basis for economic impacts is the number of acres leased, rents paid, and level of production by alternative. The economic contribution to a local economy is measured by estimating the employment and labor income generated by 1) payments to counties associated with the leasing and rent of Federal minerals, 2) royalty payments associated with production of Federal oil and gas, and 3) economic activity generated from drilling and associated activities. Activities related to oil and gas leasing, exploration, development, and production form a basic industry that brings money into the state and region and creates jobs in other sectors. Table 20 is a summary of local revenues, employment, income, population, and household impacts of each alternative.

Table 20. Change in Estimated Average Annual Economic Impacts

Alternative	Change in Acres Recommended for Lease	Change in Local Revenue to Counties ($)	Change in Total Employment (full and part-time jobs)	Change in Total Labor Income	Change in Population Change	Change in Change in Number of Households
A	0	0	0	0	0	0
B	1,442	$973	0	$16,000	0	0

Economic effects are displayed in Table 20 (Change in Estimated Average Annual Economic Impacts), Table 21 (Summary Comparison of Cumulative Annual Economic Impacts by Alternative), and Table 22 (Summary Comparison of Cumulative Employment and Income by

Major Industry by Alternative). With Alternative A none of the parcels considered would be leased. Consequently, no additional Federal, state, or local revenues would be generated from leasing, rents, or royalties associated with production. No additional employment or income would be generated if none of the parcels are leased.

4.3.19 Cumulative Impacts- Alternative B

Public Revenues:

Leasing an additional 1,442 acres of Federal minerals (Alternative B) would increase average annual oil and gas leasing and rent revenues to the Federal government by an estimated $4,000. Average annual leasing and rent revenues that would be distributed to state/local governments would increase by about $100. Estimated average annual Federal oil and gas royalties would increase by less than $200 with Alternative B compared to current levels. Estimated average annual royalties distributed to the state/counties would increase by less than $2,000 compared to current levels.

Total average annual Federal revenues related to leasing an additional 1,442 acres of Federal minerals and associated annual rent and royalty revenues related to average annual production of Federal minerals would amount to about $6,000. Estimated total average annual revenues from leasing, rent, and royalties distributed to the state and counties would be less than $3,000. Total estimated revenues distributed to the counties would be less than $1,000.

Local Economic Contribution:

The estimated combined total average annual employment and income supported by Federal oil and gas leasing, distributions of royalties to local governments, drilling wells, and production would not change from current levels (IMPLAN, 2009). Nor would there be a change in population and number of households.

Conclusion:

Total Federal contribution of Alternative B (leasing an additional 1,442 acres of Federal minerals) and anticipated related exploration, development, and production of oil and gas would have little effect on local population, total local employment, number of households, average income per household, and total personal income. The economic effects would be spread unevenly among the counties. Leasing the additional acres and anticipated exploration, development, and production under alternative B would provide very little additional funds for county functions such as enforcing laws, administering justice, collecting and disbursing tax funds, providing for orderly elections, maintaining roads and highways, providing fire protection, keeping records, administering primary and secondary education and operating clinics/hospitals, county libraries, county airports, local landfills, and county health systems. Demand for these services would change very little since the population and number of households would change little. Leasing the additional acres and anticipated exploration, development, and production would not change local economic diversity (as indicated by the number of economic sectors), economic dependency (where one or a few industries dominate the economy), or economic stability (as indicated by seasonal unemployment, sporadic population changes and fluctuating income rates) across the entire 10-county area.

4.3.19.1 Past, Present and Reasonably Foreseeable Future Actions

Past, present, or reasonably foreseeable future actions that affect the same components of the environment as the Proposed Action are: grazing, roads, wildfire and prescribed fire, range improvement projects, and utility right-of-ways.

4.3.19.2 Cumulative Impacts by Resource

Cumulative effects for all resources in the Lewistown Field Office are described in the JVP RMP (USDI-BLM 1992). The Final JVP RMP discloses environmental consequences of a broad range of resource management activities, including the fluid minerals RFD scenario upon which assumptions in this EA are based (pages 157-242). While the JVP RMP did not make decisions for fluid minerals, alternatives for fluid minerals management were described and analyzed in that EIS. The RFD scenaro for fluid minerals developed for that planning effort was used to identify assumptions related to fluid minerals management described in this EA. Pages 226-242 of the RMP/EIS (1992) discussed cumulative effects of management activities considered in the RMP at the entire RMP planning area scale which includes the southern portion of Choteau County as well as Fergus, Judith Basin, Petroleum, Phillips, and Valley counties. This document is hereby incorporated by reference into this EA. Anticipated exploration and development activities associated with the lease parcels considered in this EA are within the range of assumptions used and effects described in this cumulative effects analysis for resources other than air, climate, and socio-economics resources. This previous analysis is hereby incorporated by reference for resources other than for air, climate, and socio-economics resources.

4.3.19.2.2 Cumulative Impacts to Soils

In general, the aforementioned actions would have cumulative impacts on soil resources by causing surface disturbances contributing to soil compaction, erosion, and subsequent sedimentation. It is not expected that the surface disturbance associated with the proposed action and, past, present and future foreseeable actions would have consequential cumulative effects due to the implementation of stipulations, mitigation measures, BMPs, and adherence to standards and guidelines.

4.3.20.3 Cumulative Impacts to Wildlife

Cumulative impacts are those impacts on the environment which result "from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions." (40 CFR 1508.7). In this case, past and presently on-going actions and activities in the project vicinity include oil and gas development, fire, farming, livestock grazing, traffic, and any other forms of human and natural disturbances.

Construction of roads, production well pads, and other facilities would result in long term (>5 years) loss of habitat and forage in the analysis area. This would be in addition to acres disturbed, or habitats fragmented from various other adjacent activities. As new development occurs, direct and indirect impacts would continue to stress wildlife populations, most likely displacing the larger, mobile animals into adjacent habitat, and increasing competition with existing local populations. Non-mobile animals would be affected by increased habitat fragmentation and interruptions to preferred nesting habitats.

Certain species are localized to some areas and rely on very key habitats during critical times of the year. Disturbance or human activities that would occur in winter range for big game, nesting

and brood-rearing habitat for grouse and raptors could displace some or all of the species using a particular area or disrupt the normal life cycles of species. Wildlife and habitat in and around the project would be influenced to different degrees by various human activities. Some species and/or a few individuals from a species group may be able to adapt to these human influences over time.

With the application of standard stipulations, mitigation measures, and terms and conditions applied during the development stage, the assessed resources of concern are not expected to approach conditions where additional stresses associated with the proposed action and, past, present and future foreseeable actions will have consequential cumulative effects.

4.3.20.4 Cumulative Impacts to Economic Conditions

Cumulative economic impacts associated with Alternative A would be similar to those described in the economic section of the Affected Environment. The cumulative effects of Federal mineral leasing, exploration, development and production within the local economy are summarized in Table 21 and Table 22. The cumulative demographic and economic characteristics of the local economy would not change if the parcels being considered are not leased.

Table 21 Summary Comparison of Cumulative Annual Economic Impacts by Alternative

Activity	Alternative		
	A	B	
Existing Acres leased*	152,179	152,179	
Acres that would be leased based on this EA	0	1,442	
Total acres leased	152,179	153,621	
Acres held by production*	23,331	23,331	
Total acres leased for which lease rents would be paid	128,848	130,290	
Total average annual Federal lease and rental revenue	$363,815	$367,649	
Average annual distribution to State/local government	$151,201	$152,795	
Average annual oil production (bbl)**	10,865	10,968	
Average annual gas production (MCF)**	398,488	402,264	
Total Average annual Federal O&G royalties	$229,329	$231,502	
Average annual distribution to State/local government	$95,309	$96,212	
Total average annual Federal Revenues	$593,144	$599,151	
Total average annual State/Local Revenues	$246,511	$249,007	
Total average annual revenue distributed to counties	$96,104	$97,077	

*LR2000, BLM, March 27, 2012
**Based on average annual production 2005-2010, Office of Natural Resource Revenue, 2011

Table 22. Employment and Income Related to BLM Oil and Gas Management

Industry	Total Jobs Contributed			Total Income Contributed ($1000)		
	Alt. A	Alt. B		Alt. A	Alt. B	
Total Federal Contribution	41	41		1,980	1,996	
Percent Change from Current	0%	0%		0%	1%	

IMPLAN, 2009 database

The cumulative effects of Federal mineral leasing within the local economy as well as the specific effects of leasing an additional 1,442 acres under Alternative B are summarized in Tables 21 (Summary Comparison of Cumulative Annual Economic Impacts by Alternative) and Table 22 **(**Employment and Income Relate to BLM Oil and Gas Management). These tables also display, in comparative form, the cumulative effects of Alternatives A. The total demographic and economic characteristics of the local economy would not change from current levels.

5.0 CONSULTATION AND COORDINATION:

5.1 Persons, Agencies, and Organizations Consulted

Coordination with MFWP and USFWS was conducted for the 21 lease parcels being reviewed. BLM has coordinated with MFWP and USFWS in the completion of this EA in order to prepare analysis, identify protective measures, and apply standard stipulations associated with these parcels being analyzed.

The BLM consults with Native Americans under Section 106 of the National Historic Preservation Act. The BLM sent letters (March 26, 2012) to tribes in Montana, North and South Dakota and Wyoming at the beginning of the 15 day scoping period informing them of the potential for the 21 parcels to be leased and inviting them to submit issues and concerns BLM should consider in the environmental analysis. Letters were sent to the Tribal Presidents and THPO or other cultural contacts for the Blackfeet Nation, Rocky Boy (Chippewa Cree), Confederated Salish Kootenai Tribe, Crow Tribe of Montana, Ft. Belknap Indian Community (Assiniboine, Gros Ventre), Ft. Peck Tribes (Sioux and Assiniboine) and Northern Cheyenne Tribe. The BLM will send a second letter to the tribes informing them about the 30 day public comment period for the EA and soliciting any information BLM should consider before making a decision whether to offer any or all of the 21 parcels for sale.

5.2 Summary of Public Participation

Scoping

Public scoping for this project was conducted through a 15-day scoping period advertised on the BLM Montana State Office website and posting on the field office website NEPA notification log. Scoping was initiated March 26, 2012; scoping comments were received through April 9, 2012. Surface owner notification letters were also distributed briefly explaining the oil and gas leasing and planning process. The surface owner notification letter (March 26, 2012) requested written comments regarding any issues or concerns that should be addressed in the environmental analysis.

A total of 21 surface owner notification letters were distributed for the oil and gas leasing analysis process in the Lewistown Field Office. No written or verbal comments were received during the 15-day scoping period.

Table 23. List of Preparers

Name	Title	Responsible for the Following Section(s) of this Document
Abel Guevara	Wildlife Biologist	Team Lead
Geoff Beyersdorf	Lewistown Field Office Field Manager	Review, Concurrence, and Signature
Adam Carr	Supervisory NRS	Oversight, Review
Zane Fulbright	Archeologist	Cultural Resources, Native American Religions Concerns
Josh Sorlie	Soil Scientist	Soils
Dan Brunkhorst	Rangeland Management Specialist	BLM Sensitive Plants
Robert Thompson	Rangeland Management Specialist	Livestock, Vegetation
Chad Krause	Hydrologist	Water Resources, Air Resources, Climate

Name	Title	Responsible for the Following Section(s) of this Document
Lowell Hassler	NRS	Weeds
Jerry Majerus	Environmental Coordinator	Review
Chris Rye	Geologist	Paleontology, Solid Minerals
Kelly McGill	Outdoor Recreation Planner	Recreation/Travel Management/VRM
Deb Tucek	Realty Specialist	Lands and Realty
Matt Comer	Wildlife Biologist	Wildlife Resources, Special Status Wildlife Species
Dale Manchester	Petroleum Engineer	Fluid Minerals
Joan Trent	Social Scientist	Social Analysis
John Thompson	Planning &Environmental Specialist	Economic Analysis
Susan Bassett	Air Resource Specialist	Air Resources

6.0 REFERENCES

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7.0 DEFINITIONS

The North American Industry Classification System (NAICS) is the standard used by federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. NAICS was developed under the auspices of the Office of Management and Budget (OMB), and adopted in 1997 to replace the Standard Industrial Classification (SIC) system and to allow for a high level of comparability in business statistics among the North American countries.

IMPLAN: The IMPLAN Model is the most flexible, detailed and widely used input-output impact model system in the U.S. It provides users with the ability to define industries, economic relationships and projects to be analyzed. It can be customized for any county, region or state, and used to assess "multiplier effects" caused by increasing or decreasing spending in various parts of the economy. This can be used to assess the economic impacts of resource management decisions, facilities, industries, or changes in their level of activity in a given area. The current IMPLAN input-output database and model is maintained and sold by MIG, Inc. (Minnesota IMPLAN Group). The 2007 data set was used in this analysis is.

Appendix A. Description of Lease Parcels and Lease Stipulations

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 97300-74	T. 22 N, R. 18 E, PMM, MT SEC. 25 N2NE,SENE,NENW; SEC. 26 N2N2,S2NW,NESW, S2SW,W2SE; SEC. 27 NENE,NENW; SEC. 33 E2NE,SENW,N2SE; SEC. 34 S2NE,N2NW,NWSE; SEC. 35 LOTS 3,4; SEC. 35 NW,NWSE; FERGUS COUNTY 1362.30 AC PD	Cultural Resources 16-1 (All Lands) Standard 16-3 (All Lands) TES 16-2 (All Lands)	Section 25 N2NE; SENE; NENW Section 35 LOTS 3,4 Greater Sage-Grouse habitat* (* Reference Protest Decision IM MT 89- 108)
MTM 97300-75	T. 22 N, R. 18 E, PMM, MT SEC. 29 NENE; FERGUS COUNTY 40.00 AC ACQ	Cultural Resources 16-1 (All Lands) Standard 16-3 (All Lands) TES 16-2 (All Lands)	
MTM 97300-73	T. 22 N, R. 18 E, PMM, MT SEC. 29 NW,NESW; SEC. 31 LOT 1; FERGUS COUNTY 243.93 AC PD	Cultural Resources 16-1 (All Lands) Standard 16-3 (All Lands) TES 16-2 (All Lands)	Section 31 Lot 1 Sprague's Pipit habitat* (* Reference Protest Decision IM MT 89- 108)
MTM 97300-PG	T. 29 N, R. 4 W, PMM, MT SEC. 29 SESE; SEC. 32 NWNE; PONDERA COUNTY 80.00 AC PD		All Lands Sprague's Pipit habitat* (*Reference Protest Decision IM MT 89- 108)

PRELIMINARY PARCEL WORKSHEET

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 97300-K9	T. 28 N, R. 5 W, PMM, MT SEC. 19 SESE; SEC. 20 NESW,SWSW; PONDERA COUNTY 120.00 AC PD		All Lands Sprague's Pipit habitat* (*Reference Protest Decision IM MT 89-108)
MTM 97300-QP	T. 23 N, R. 6 W, PMM, MT SEC. 1 NESW; TETON COUNTY 40.00 AC PD		All Lands Sprague's Pipit habitat* (*Reference Protest Decision IM MT 89-108)
MTM 97300-QH	T. 24 N, R. 6 W, PMM, MT SEC. 11 S2NE; TETON COUNTY 80.00 AC PD		All Lands Sprague's Pipit habitat* (*Reference Protest Decision IM MT 89-108) Conservation Easement** (**Reference LFO DSD Briefing Paper 4/25/12)
MTM 97300-QJ	T. 24 N, R. 6 W, PMM, MT SEC. 17 N2SW,SWSW; SEC. 18 LOT 2; SEC. 18 SENW,N2SE,SESE; TETON COUNTY 313.35 AC PD		All Lands Sprague's Pipit habitat* (*Reference Protest Decision IM MT 89-108) Conservation Easement** (**Reference LFO DSD Briefing Paper 4/25/12)

PRELIMINARY PARCEL WORKSHEET

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 97300-QK	T. 24 N, R. 6 W, PMM, MT SEC. 19 LOTS 1-4; SEC. 19 N2NE,NENW,SESW,S2SE; SEC. 20 W2NW; SEC. 30 LOTS 1-3; SEC. 30 E2,E2NW,NESW; TETON COUNTY 999.70 AC PD		All Lands Sprague's Pipit habitat* (*Reference Protest Decision IM MT 89-108) Conservation Easement** (**Reference LFO DSD Briefing Paper 4/25/12) Paleontology*** (***Reference LFO DSD Briefing Paper 4/25/12)
MTM 97300-QL	T. 24 N, R. 6 W, PMM, MT SEC. 25 NWNW; SEC. 26 NENE,W2E2,E2W2; SEC. 27 NENW; TETON COUNTY 440.00 AC PD		All Lands Sprague's Pipit habitat* (*Reference Protest Decision IM MT 89-108) Conservation Easement** (**Reference LFO DSD Briefing Paper 4/25/12)
MTM 97300-QM	T. 24 N, R. 6 W, PMM, MT SEC. 28 NWSW,SESW; SEC. 29 S2NE,W2SE; SEC. 32 NWNE; TETON COUNTY 280.00 AC PD		All Lands Sprague's Pipit habitat* (*Reference Protest Decision IM MT 89-108) Conservation Easement** (**Reference LFO DSD Briefing Paper 4/25/12)
MTM 97300-QN	T. 24 N, R. 6 W, PMM, MT SEC. 32 SESE; SEC. 33 SWSW; TETON COUNTY 80.00 AC PD		All Lands Sprague's Pipit habitat* (*Reference Protest Decision IM MT 89-108) Conservation Easement** (**Reference LFO DSD Briefing Paper 4/25/12)

PRELIMINARY PARCEL WORKSHEET

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 97300-PH	T. 28 N, R. 6 W, PMM, MT SEC. 26 NESW; SEC. 27 NWSE; SEC. 28 SWSE; SEC. 34 NENE; PONDERA COUNTY 160.00 AC PD	Cultural Resources 16-1 (All Lands) Standard 16-3 (All Lands) TES 16-2 (All Lands)	Section 26 NESW Sprague's Pipit habitat* (*Reference Protest Decision IM MT 89-108)
MTM 97300-P8	T. 25 N, R. 7 W, PMM, MT SEC. 19 LOTS 1-4; SEC. 19 W2NE,E2W2,SE; SEC. 20 W2NE,E2NW,NESW; SEC. 21 NWSW; TETON COUNTY 795.08 AC PD		All Lands Sprague's Pipit habitat* (*Reference Protest Decision IM MT 89-108) Conservation Easement** (**Reference LFO DSD Briefing Paper 4/25/12)
MTM 97300-QA	T. 25 N, R. 7 W, PMM, MT SEC. 28 NENE,NESE,S2S2; TETON COUNTY 240.00 AC PD		All Lands Sprague's Pipit habitat* (*Reference Protest Decision IM MT 89-108) Conservation Easement** (**Reference LFO DSD Briefing Paper 4/25/12)
MTM 97300-QB	T. 25 N, R. 7 W, PMM, MT SEC. 29 N2N2,S2NW,W2SW; SEC. 30 LOTS 1,2; SEC. 30 E2,E2NW; TETON COUNTY 798.26 AC PD		All Lands Sprague's Pipit habitat* (*Reference Protest Decision IM MT 89-108) Conservation Easement** (**Reference LFO DSD Briefing Paper 4/25/12)

PRELIMINARY PARCEL WORKSHEET

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 97300-QC	T. 25 N, R. 7 W, PMM, MT SEC. 31 LOTS 3,4; SEC. 31 E2SW,N2SE,SWSE; SEC. 32 NWSW; TETON COUNTY 319.86 AC PD		All Lands Sprague's Pipit habitat* (*Reference Protest Decision IM MT 89-108) Conservation Easement** (**Reference LFO DSD Briefing Paper 4/25/12)
MTM 97300-PK	T. 27 N, R. 7 W, PMM, MT SEC. 8 NESW,N2SE; TETON COUNTY 120.00 AC PD		All Lands Sprague's Pipit habitat* (*Reference Protest Decision IM MT 89-108) Conservation Easement** (**Reference LFO DSD Briefing Paper 4/25/12)
MTM 97300-PL	T. 27 N, R. 7 W, PMM, MT SEC. 19 W2SE; TETON COUNTY 80.00 AC PD		All Lands Sprague's Pipit habitat* (*Reference Protest Decision IM MT 89-108) Conservation Easement** (**Reference LFO DSD Briefing Paper 4/25/12)
MTM 97300-PM	T. 27 N, R. 7 W, PMM, MT SEC. 32 SWNE; TETON COUNTY 40.00 AC PD		All Lands Sprague's Pipit habitat* (*Reference Protest Decision IM MT 89-108) Conservation Easement** (**Reference LFO DSD Briefing Paper 4/25/12)

PRELIMINARY PARCEL WORKSHEET

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 97300-PJ	T. 28 N, R. 7 W, PMM, MT SEC. 35 NENE; PONDERA COUNTY 40.00 AC PD		All Lands Sprague's Pipit habitat* (*Reference Protest Decision IM MT 89-108)

Appendix B. Lease Stipulation Key

Stipulation Number	Stipulation Name/Brief Description
Bureau of Land Management	
Cultural Resources 16-1	**CULTURAL RESOURCES LEASE STIPULATION** This lease may be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E.O. 13007, or other statutes and executive orders. The BLM will not approve any ground disturbing activities that may affect any such properties or resources until it completes its obligations under applicable requirements of the NHPA and other authorities. The BLM may require modification to exploration or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated."
Standard 16-3	**STANDARD LEASE STIPULATION** **ESTHETICS--**To maintain esthetic values, all surface-disturbing activities, semipermanent and permanent facilities may require special design including location, painting and camouflage to blend with the natural surroundings and meet the intent of the visual quality objectives of the Federal Surface Managing Agency (SMA). **EROSION CONTROL**--Surface-disturbing activities may be prohibited during muddy and/or wet soil periods. **CONTROLLED OR LIMITED SURFACE USE STIPULATION** --This stipulation may be modified, consistent with land use documents, when specifically approved in writing by the Bureau of Land Management (BLM) with concurrence of the SMA. Distances and/or time periods may be made less restrictive depending on the actual onground conditions. The prospective lessee should contact the SMA for more specific locations and information regarding the restrictive nature of this stipulation. The lessee/operator is given notice that the lands within this lease may include special areas and that such areas may contain special values, may be needed for special purposes, or may require special attention to prevent damage to surface and/or other resources. Possible special areas are identified below. Any surface use or occupancy within such special areas will be strictly controlled, or **if absolutely necessary**, excluded. Use or occupancy will be restricted only when the BLM and/or the SMA demonstrates the restriction necessary for the protection of such special areas and existing or planned uses. Appropriate modifications to imposed restrictions will be made for the maintenance and operations of producing oil and gas wells. After the SMA has been advised of specific proposed surface use or occupancy on the leased lands, and on request of the lessee/operator, the Agency will furnish further data on any special areas which may include: • 100 feet from the edge of the rights-of-way from highways, designated county roads and appropriate federally-owned or controlled roads and recreation trails. • 500 feet, or when necessary, within the 25-year flood plain from reservoirs, lakes, and ponds and intermittent, ephemeral or small perennial streams: 1,000 feet, or when necessary, within the 100-year flood plain from larger perennial streams, rivers, and domestic water supplies. • 500 feet from grouse strutting grounds. Special care to avoid nesting areas associated with strutting grounds will be necessary during the period from March 1, to June 30. One-fourth mile from identified essential habitat of state and federal sensitive species. Crucial wildlife winter ranges during

Stipulation Number	Stipulation Name/Brief Description
	the period from December 1 to May 15, and in elk calving areas during the period from May 1 to June 30. • 300 feet from occupied buildings, developed recreational areas, undeveloped recreational areas receiving concentrated public use and sites eligible for or designated as National Register sites. • Seasonal road closures, roads for special uses, specified roads during heavy traffic periods and on areas having restrictive off-road vehicle designations. • On slopes over 30 percent or 20 percent on extremely erodible or slumping soils. **APPLICATIONS FOR PERMIT TO DRILL (APDs)**--The appropriate BLM field offices are responsible for the receipt, processing, and approval of APDs. The APDs are to be submitted by oil and gas operators pursuant to the requirements found in Onshore Oil and Gas Order No. 1 -- Approval of Operations on Onshore Federal and Indian Oil and Gas Leases (Circular No. 2538). Additional requirements for the conduct of oil and gas operations can be found in the Code of Federal Regulations Title 43, Part 3160. Copies of Onshore Oil and Gas Order No. 1, and pertinent regulations, can be obtained from the BLM field offices in which the operations are proposed. Early coordination with these offices on proposals is encouraged. **CULTURAL AND PALEONTOLOGICAL RESOURCES**--The SMA is responsible for assuring that the leased lands are examined to determine if cultural resources are present and to specify mitigation measures. Prior to undertaking any surface-disturbing activities on the lands covered by this lease, the lessee or operator, unless notified to the contrary by the SMA, shall: • Contact the appropriate SMA to determine if a site-specific cultural resource inventory is required. If an inventory is required, then: • Engage the services of a cultural resource specialist acceptable to the SMA to conduct a cultural resource inventory of the area of proposed surface disturbance. The operator may elect to inventory an area larger than the area of proposed disturbance to cover possible site relocation which may result from environmental or other considerations. An acceptable inventory report is to be submitted to the SMA for review and approval no later than that time when an otherwise complete application for approval of drilling or subsequent surface-disturbing operation is submitted. • Implement mitigation measures required by the SMA. Mitigation may include the relocation of proposed lease-related activities or other protective measures such as testing salvage and recordation. Where impacts to cultural resources cannot be mitigated to the satisfaction of the SMA, surface occupancy on that area must be prohibited. The operator shall immediately bring to the attention of the SMA any cultural or paleontological resources discovered as a result of approved operations under this lease, and not disturb such discoveries until directed to proceed by the SMA. **ENDANGERED OR THREATENED SPECIES**--The SMA is responsible for assuring that the leased land is examined prior to undertaking any surface-disturbing activities to determine effects upon any plant or animal species, listed or proposed for listing as endangered or threatened, or their habitats. The findings of this examination may result in some restrictions to the operator's plans or even disallow use and occupancy that would be in violation of the Endangered Species Act of 1973 by detrimentally affecting endangered or threatened species or their habitats. The lessee/operator may, unless notified by the authorized officer of the SMA that

Stipulation Number	Stipulation Name/Brief Description
	the examination is not necessary, conduct the examination on the leased lands at his discretion and cost. This examination must be done by or under the supervision of a qualified resources specialist approved by the SMA. An acceptable report must be provided to the SMA identifying the anticipated effects of a proposed action on endangered or threatened species or their habitats.
TES 16-2	**ENDANGERED SPECIES ACT SECTION 7 CONSULTATION STIPULATION** The lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. BLM may recommend modifications to exploration and development, and require modifications to or disapprove proposed activity that is likely to result in jeopardy to proposed or listed threatened or endangered species or designated or proposed critical habitat.

Appendix C. *Threatened, endangered, candidate/proposed, and BLM sensitive wildlife and fish species with the potential to occur within the Project Area on the Lewistown Field Office (FO).* ***NOTE****: The U.S. Fish and Wildlife Service species list (US Fish and Wildlife Service 2012), Montana and Dakotas sensitive species list (BLM 2009) were reviewed.*

[1]**Status Codes**: **E**=federally listed endangered; **T**=federally listed threatened; **C**=federal candidate for listing; **P=**proposed for federal listing; and **S**=BLM sensitive

[2]**Exclusion Rationale Codes**: **ODR**=outside known distributional range of the species; **HAB**=no habitat present in Analysis Area; **SEA**=species not present/affected during season.

Species Common and Scientific Name	Status[1]	Potential to Occur?	Rationale for Exclusion[2]	Brief Habitat Description and Range in Montana
INVERTEBRATES				
Dakota skipper *Hesperia dacotae*	S		ODR	Native tallgrass prairie in Eastern Dakotas
FISH				
Arctic grayling *Thymallus arcticus montananus*	S		ODR	small, cold, clear lakes with tributaries suitable for spawning. They do not coexist well with other fishes except cutthroat trout and others with which they evolved. Sun River along Rocky Mtn. Front.
Bull trout *Salvelinus confluentus*	T		ODR	Sub-adult and adult fluvial bull trout reside in larger streams and rivers and spawn in smaller tributary streams, whereas adfluvial bull trout reside in lakes and spawn in tributaries. They spawn in headwater streams with clear gravel or rubble bottom
Northern redbelly dace x Finescale dace *Phoxinus eos x Phoxinus neogaeus*	S		HAB	Northern redbelly dace prefer quiet waters from beaver ponds, bogs and clear streams. The finescale dace likes similar habitat but is also found in larger lakes. Known in Big Coulee Ck in Judith Basin Co.
Paddlefish *Polyodon spathula*	S		HAB	slow or quiet waters of large rivers or impoundments. They spawn on the gravel bars of large rivers during spring high water. Paddlefish tolerate, or perhaps seek, turbid water
Pallid Sturgeon *Scaphirhynchus albus*	E		HAB	large turbid streams including the Missouri and Yellowstone rivers. They use all channel types, primarily straight reaches with islands. They primarily use areas with substrates containing sand (especially bottom sand dune formations) and fines (93% of observations)
Pearl dace *Margariscus margarita*	S		ODR	small cool streams, either clear or turbid (Brown 1971). They spawn in clear water at depths of 1 to 2 feet over a gravel or sand bottom. N/E MT.
Sauger *Stizostedion canadense*	S		HAB	larger turbid rivers and the muddy shallows of lakes and reservoirs. They spawn in gravelly or rocky areas in shallow water and seem to prefer turbid water.
Sturgeon chub *Macrhybopsis gelida*	S		HAB	turbid water with moderate to strong current over bottoms ranging from rocks and gravel to coarse sand
Westslope cutthroat trout *Oncorhynchus clarki lewisi*	S		ODR	gravel substrate in riffles and pool crests for spawning habitat. Cutthroat trout have long been regarded as sensitive to fine sediment
Yellowstone cutthroat trout *Oncorhynchus clarki bouvieri*	S		ODR	relatively clear, cold streams, rivers, and lakes. Optimal temperatures have been reported to be from 4 to 15 degrees C., with occupied waters ranging from 0 to 27 degrees C.
AMPHIBIANS AND REPTILES				
Coeur d'Alene salamander *Plethodon idahoensis*	S		ODR	primary habitats are seepages and streamside talus; W. MT near Libby, MT

Great Plains toad *Bufo cognatus*	S	✓		sagebrush-grassland, rainwater pools in road ruts, in stream valleys, at small reservoirs and stock ponds, and around rural farms; breeding has been documented in small reservoirs and backwater sites along streams appears to prefer stock tanks and roadside ponds rather than floodplains. Eggs and larvae develop in shallow water, usually clear or slightly turbid, but not muddy.
Northern leopard frog *Lithobates pipiens*	S	✓		wetland habitats of relatively fresh water with moderate salinity, including springs, slow streams, marshes, bogs, ponds, canals, flood plains, beaver ponds, reservoirs, and lakes, usually in permanent water with rooted aquatic vegetation.
SPECIES COMMON AND SCIENTIFIC NAME	**STATUS[1]**	**POTENTIAL TO OCCUR?**	**RATIONALE FOR EXCLUSION[2]**	**BRIEF HABITAT DESCRIPTION AND RANGE IN MONTANA**
Plains spadefoot *Spea bombifrons*	S	✓		soft sandy/gravelly soils near permanent or temporary bodies of water. lives largely inactive in burrows of its own construction or occupies rodent burrows, and enters water only to breed. Following heavy rains, adults have been reported in water up to 30 centimeters deep in flooded wagon wheel ruts, temporary rain pools formed in wide flat-bottom coulees, water tanks, and badland seep ponds, and tadpoles and toadlets have been observed in stock ponds and small ephemeral reservoirs, usually in sagebrush-grassland habitats
Western toad *Anaxyrus boreas boreas*	S		ODR	utilize a wide variety of habitats, including desert springs and streams, meadows and woodlands, mountain wetlands, beaver ponds, marshes, ditches, and backwater channels of rivers where they prefer shallow areas with mud bottoms
REPTILES				
Greater short-horned lizard *Phrynosoma hernandesi*	S	✓		ridge crests between coulees, and in sparse, short grass and sagebrush with sun-baked soil. limestone outcrops in canyon bottoms of sandy soil with an open canopy of limber pine-Utah juniper, and are also present on flats of relatively pebbly or stony soil with sparse grass and sagebrush cover
Milk snake *Lampropeltis triangulum*	S	✓		open sagebrush-grassland habitat and ponderosa pine savannah with sandy soils, most often in or near areas of rocky outcrops and hillsides or badland scarps, sometimes within city limits.
Snapping turtle *Chelydra serpentine*	S		HAB	backwaters along major rivers, at smaller reservoirs, and in smaller streams and creeks with permanent flowing water and sandy or muddy bottoms
Spiny softshell *Apalone spinifera*	S		HAB	primarily a riverine species, occupying large rivers and river impoundments, but also occurs in lakes, ponds along rivers, pools along intermittent streams, bayous, irrigation canals, and oxbows. open sandy or mud banks, a soft bottom, and submerged brush and other debris. Spiny Softshells bask on shores or on partially submerged logs. They burrow into the bottoms of permanent water bodies, either shallow or relatively deep (0.5 to 7.0 meters), where they spend winter. Eggs are laid in nests dug in open areas in sand, gravel, or soft soil near water
Western hog-nosed snake *Heterodon nasicus*	S	✓		apparent preference for arid areas, farmlands, and floodplains, particularly those with gravelly or sandy soil, has been noted. They occupy burrows or dig into soil, and less often are found under rocks or debris, during periods of inactivity
BIRDS				
Baird's sparrow *Ammodramus bairdii*	S	✓		nest in native prairie, but structure may ultimately be more important than plant species composition. (nesting has been observed in crested wheat, while smooth brome is avoided) areas with little to no grazing activity are required.
Bald eagle *Haliaeetus leucocephalus*	S	✓		near open water including rivers, streams & lakes, nesting & roosting in large ponderosa pine, Douglas-fir, or cottonwood trees in proximity to open water and rivers.

Black tern *Chilodonias niger*	S		HAB	wetlands, marshes, prairie potholes, and small ponds. 30%-50% of the wetland complex is emergent vegetation. Vegetation within known breeding colonies includes alkali bulrushes, canary reed-grass, cattail spp., sedge spp., rush spp., reed spp., grass spp., *Polygonum* spp., *Juncus* spp. and *Potamogeton* spp., indicating a wide variety of potential habitats are usable by Black Terns. Water levels range from about 0.5 m to greater than 2.0 m with most having depths between 0.5 m and 1.0 m (MTNHP 2003).
Black-backed woodpecker *Picoides arcticus*	S		HAB	early successional, burned forest of mixed conifer, lodgepole pine, Douglas-fir, and spruce-fir, although they are more numerous in lower elevation Douglas-fir and pine forest habitats than in higher elevation subalpine spruce forest habitats
Black-crowned night heron *Nycticorax nycticorax*	S		HAB	shallow bulrush or cattail marshes, most often within a grassland landscape. also nest in cottonwoods, willows, or other wetland vegetation that allows them to nest over water or on islands that may afford them protection from mammalian Most colonies are located in large wetland complexes, typically with a one-to-one ratio of open water and emergent vegetation
Species Common and Scientific Name	**Status[1]**	**Potential to Occur?**	**Rationale for Exclusion[2]**	**Brief Habitat Description and Range in Montana**
Blue-gray gnatcatcher *Polioptilia caerulea*	S		ODR	brush, scrub, or chaparral are intermixed with taller vegetation (e.g., forest edge, riparian corridors); nesting often occurs near water. Nests are built on branches or forks of trees or shrubs, usually 1 to 25 meters above ground—S. Central MT
Bobolink *Dolichonyx orysivorus*	S	✓		Nests built in tall grass and mixed-grass prairies. Prefers "old" hay fields with high grass-to-legume ratios.
Brewer's sparrow *Spizella breweri*	S	✓		Sagebrush, mountain meadows, and mountain shrub habitats. nested in sagebrush averaging 16-inches high. The cover (concealment) for the nest provided by sagebrush is very important
Burrowing owl *Athene cunicularia*	S		HAB	open grasslands, where abandoned burrows dug by mammals such as ground squirrels, prairie dogs and badgers are available. Black-tailed Prairie Dog and Richardson's Ground Squirrel colonies provide the primary and secondary habitat for Burrowing Owls in the state
Chestnut-collared longspur *Calcarius ornatus*	S	✓		Species prefers short-to-medium grasses that have been recently grazed or mowed. Prefers native pastures.
Common loon *Gavia immer*	S		HAB	13+ acre lake <5000 feet in elevation. Small islands preferred for nesting, but herbaceous shoreline areas, also selected. Nursery areas are very often sheltered, shallow coves with abundant small fish and insects. relatively oligotrophic and have not experienced significant siltation or other hydrological changes.
Dickcissel *Spiza americana*	S	✓		grasslands, meadows, savanna, cultivated lands, and brushy fields. nest on ground in grass or rank herbage, or raised a little above ground, in grass tufts or tall weeds, or in low shrubs or trees, up to about 2 meters above the ground but usually low. prefer habitat with dense, moderate to tall vegetation (particularly with some forbs) and moderately deep litter. moderately grazed and idle prairie. A high abundance of forbs provides perches, nesting cover, nest support, and possibly increased invertebrate abundance.
Ferruginous hawk *Buteo regalis*	S	✓		mixed-grass prairie, shrub-grasslands, grasslands, grass-sagebrush complex, and sagebrush steppe.
Flammulated owl *Otus flammeolus*	S		HAB	old-growth or mature ponderosa pine, ponderosa pine, & Douglas-fir forests, often mixed with mature aspen, nesting in cavities, feeding on insects.
Franklin's gull *Larus pipixcan*	S		HAB	Preferring large, relatively permanent prairie marsh complexes, the Franklin's Gull builds its nests over water on a supporting structure of emergent vegetation. Nesting is noted to occur in cattails and bulrushes

Golden eagle *Aquila chrysaetos*	S	✓		nest on cliffs and in large trees (occasionally on power poles), and hunt over prairie and open woodlands. Cliff nests selected for south or east aspect, less than 200 in. snowfall, low elevation, availability of sagebrush/grassland hunting areas
Great gray owl *Strix nebulosa*	S		ODR	dense coniferous and hardwood forest, especially pine, spruce, paper birch, poplar, and second-growth, especially near water. forage in wet meadows, boreal forests and spruce-tamarack bogs in the far north, and coniferous forest and meadows in mountainous areas. nest in the tops of large broken-off tree trunks in old nests of other large birds, or in debris platforms from dwarf mistletoe, frequently near bogs or clearings. Nests are frequently reused and the same pair often nests in the same area in successive years.
Greater sage-grouse *Centrocercus urophasianus*	S/C	✓		tall dense stands of sagebrush; 6 to 18 inch high sagebrush covered benches in June to July (average 213 acres); move to alfalfa fields (144 acres) or greasewood bottoms (91 acres) when forbs on the benches dry out; and move back to sagebrush (average 128 acres) in late August to early September (Peterson 1970).
Harlequin duck *Histrionicus histrionicus*	S		ODR	fast moving, low gradient, clear mountain streams. birds in streams on the Rocky Mountain Front were seen in pole-sized timber.
Least tern *Sternula antillarum*	E		ODR HAB	nest on unvegetated sand-pebble beaches and islands of large reservoirs and rivers in northeastern and southeastern Montana, specifically the Yellowstone and Missouri river systems.
LeConte's sparrow *Ammodramus leconteii*	S		ODR	wet meadows within peatlands, often with a strong sedge (*Carex*) component
Species Common and Scientific Name	**Status[1]**	**Potential to Occur?**	**Rationale for Exclusion[2]**	**Brief Habitat Description and Range in Montana**
Loggerhead shrike *Lanius ludovicianus*	S	✓		open riparian areas, montane meadows, agricultural areas, grasslands, shrublands, & piñon/juniper woodlands
Long-billed curlew *Numenius americanus*	S	✓		Nests primarily in short-grass or mixed-prairie habitat with flat to rolling topography Habitats with trees, high density of shrubs (e.g., sagebrush [*Artemisia* spp.]), and tall, dense grass generally. Taller, denser grass used during brood-rearing when shade and camouflage from predators are presumably more important for chicks, but may also reflect decline in availability of shorter habitats with season.
Marbled godwit *Limosa fedoa*	S	✓		Breeds in short, sparsely to moderately vegetated landscapes that include native grassland and wetlands. ephemeral ponds, as well as temporary ponds and alkali wetland. Semi permanent ponds used as well. Upland habitat during breeding season primarily idle grassland and pastures
McCown's longspur *Calcarius mccownii*	S		HAB	breeding habitat is a matrix of perennial shortgrass species (e.g., *Bouteloua gracilis*, *Buchloe dactyloides*) interspersed with cactus, and limited cover of midgrasses (e.g., *Aristida longiseta*, *Agropyron smithii*, *Stipa comata*) and shrubs (e.g., *Gutierrezia sarothrae*, *Chrysothamnus nauseosus*, *Artemesia frigida*).
Mountain plover *Charadrius montanus*	S		HAB	prairie dog colonies and other shortgrass prairie sites are confirmed as preferred breeding habitat. Strong preference was also given to sites with slopes less than 5% and grass height of less than 6 cm (3 inches)
Nelson's sharp-tailed sparrow *Ammodramus nelson*	S		ODR	freshwater wetlands with dense, emergent vegetation or damp areas with dense grasses
Northern goshawk *Accipiter gentilis*	S		HAB	primarily forest habitat, especially in mountains, nesting in lower portions of mature Douglas-fir, ponderosa pine, lodgepole pine, or aspen canopies; prefers mature or old-growth forest structure.
Peregrine falcon *Falco peregrinus anatum*	S		HAB	wide variety of habitats, selects cliff ledges or rock outcroppings for nesting, preferring high, open cliff faces that dominate the surrounding area.

Red-headed woodpecker *Melanerpes erythrocephalus*	S		HAB	along major rivers having riparian forest. open savannah country w/ ground cover, snags and canopy cover. Large burns also utilized. nest in holes excavated 2 to 25 meters above ground by both sexes in live trees, dead stubs, utility poles, or fence posts. Individuals nest in the same cavity in successive years.
Sage sparrow *Amphispiza belli*	S		HAB ODR	Prefers semiopen habitats with evenly spaced shrubs 1–2 m high. Vertical structure, habitat patchiness, and vegetation density may be more important in habitat selection than specific shrub species, but this sparrow is closely associated with big sagebrush throughout most of its range. Historical records w/i FO 20+ years old. Extreme S. Central MT
Sage thrasher *Oreoscoptes montanus*	S	✓		sagebrush obligate in Montana. abundance is generally positively correlated with the amount of sage cover and negatively correlated with grass cover.
Sedge wren *Cistorthorus platensis*	S		ODR HAB	areas that are highly susceptible to flooding and drying caused by annual and seasonal variation in rainfall.
Sprague's pipit *Anthus spragueii*	S/C		HAB	native, medium to intermediate height prairie and in a short grass prairie landscape, can often be found in areas with taller grasses. more abundant in native prairie than in exotic vegetation; area sensitive, requiring relatively large areas of appropriate habitat; the minimum area requirement in a Saskatchewan study was 470 acres. known to utilize and breed in alkaline meadows and around the edges of alkaline lakes
Swainson's hawk *Buteo swainsoni*	S	✓		nest in river bottom forests, brushy coulees, and shelterbelts. hunt in grasslands and agricultural land, especially along river bottoms.
Three-toed woodpecker *Picoides dorsalis*	S		HAB	mature or old-growth spruce-fir forest, but also occurs in ponderosa pine, Douglas-fir, & lodgepole pine forests with abundant snags and insect populations are present due to outbreaks from disease or fire.
Trumpeter swan *Cygnus buccinators*	S		HAB	Along the Rocky Mountain Front the breeding habitat is small pothole lakes, generally with sufficient water to maintain emergent vegetation through the breeding season. Habitat requirements for breeding include room to take off (~100 m), shallow, unpolluted water with sufficient emergent vegetation and invertebrates, appropriate nest sites (i.e. Muskrat lodges), and areas with little human disturbance
SPECIES COMMON AND SCIENTIFIC NAME	**STATUS[1]**	**POTENTIAL TO OCCUR?**	**RATIONALE FOR EXCLUSION[2]**	**BRIEF HABITAT DESCRIPTION AND RANGE IN MONTANA**
White-faced ibis *Plegadis chihi*	S	✓		freshwater wetlands, including ponds, swamps and marshes with pockets of emergent vegetation. also use flooded hay meadows and agricultural fields as feeding locations. nest in areas where water surrounds emergent vegetation, bushes, shrubs, or low trees. use old stems in cattails (*Typha* spp.), hardstem bulrush (*Scirpus acutus*) or alkali bulrush (*S. paludosus*) over shallow water as their nesting habitat
Yellow rail *Coturnicops noveboracensis*	S		ODR	Breeding habitat consists of wet sedge meadows and other wetlands containing grasses, rushes and bulrushes. Presence of the Yellow Rail is most commonly dictated by water depth, specifically one that fluctuates throughout the breeding season, i.e. wet in the early part of the breeding season and relatively dry (no standing water) by July or September. NE MT and Flathead Valley.
Yellow-billed cuckoo *Coccyzus americanus*	S		HAB	tall cottonwood and willow riparian woodlands. Nests are found in trees, shrubs or vines, an average of 1 to 3 meters above ground. Western subspecies require patches of at least 10 hectares (25 acres) of dense, riparian forest with a canopy cover of at least 50 percent in both the understory and overstory. Nests are typically found in mature willows
MAMMALS				
Black-footed ferret *Mustela nigripes*	E		HAB	intimately tied to prairie dogs and only found in association with prairie dogs. limited to habitat used by prairie dogs: grasslands, steppe, and shrub steppe. rely on abandoned prairie dog burrows for shelter. Only

				large complexes (several thousand acres of closely spaced colonies) can support and sustain a breeding population. estimated that 40 to 60 hectares of prairie dog colony is needed to support one Black-footed Ferret, and females with litters have never been found on colonies less than 49 hectares
Black-tailed prairie dog *Cynomys ludovicianus*	S		HAB	colonies are found on flat, open grasslands and shrub/grasslands with low, relatively sparse vegetation. The most frequently occupied habitat in Montana is dominated by western wheatgrass, blue grama and big sagebrush. Colonies are associated with silty clay loams, sandy clay loams, and loams and fine to medium textured soils are preferred, presumably because burrows and other structures tend to retain their shape and strength better than in coarse, loose soils.
Canada lynx *Lynx canadensis*	T		HAB	dense spruce-fir, Douglas-fir, early seral lodgepole pine, mature lodgepole pine with developing understory of spruce-fir & aspen in subalpine zone & timberline, using caves, rock crevices, banks, logs for denning, closely associated with snowshoe hare.
Fisher *Martes pennanti*	S		HAB ODR	When inactive, they occupy dens in tree hollows, under logs, or in ground or rocky crevices, or they rest in branches of conifers (in the warmer months). Fishers occur primarily in dense coniferous or mixed forests, including early successional forests with dense overhead cover. Optimal conditions for Fishers are forest tracts of 245 acres or more, interconnected with other large areas of suitable habitat.
Fringed myotis *Myotis thysanodes*	S	✓		rocky outcroppings in mid-elevation ponderosa pine, piñon/juniper, oak, & mixed conifer woodlands, grasslands, deserts, & shrublands;
Fringe-tailed myotis *Myotis thysanodes pahasapensis*	S		ODR	occurs primarily in caves in the Black Hills and Badlands. occurs only in certain montane (mountainous) areas of South Dakota and Wyoming
Gray wolf *Canis lupis*	S		HAB	no particular habitat preference except for the presence of native ungulates within its territory on a year-round basis. Gray Wolves establishing new packs in Montana have demonstrated greater tolerance of human presence and disturbance than previously thought characteristic of this species.
Great Basin pocket mouse *Perognathus parvus*	S		ODR	arid and sometimes sparsely vegetated. They include grassland-shrubland with less than 40% cover, stabilized sandhills, and landscapes with sandy soils, more than 28% sagebrush cover, and 0.3 to 2.0 meters shrub height. Extreme SW MT.
Grizzly bear *Ursus arctos horribilis*	T	✓		primarily use meadows, seeps, riparian zones, mixed shrub fields, closed timber, open timber, sidehill parks, snow chutes, and alpine slabrock habitats. Habitat use is highly variable between areas, seasons, local populations, and individuals. Historically, the Grizzly Bear was primarily a plains species occurring in higher densities throughout most of eastern Montana.
Species Common and Scientific Name	**Status[1]**	**Potential to Occur?**	**Rationale for Exclusion[2]**	**Brief Habitat Description and Range in Montana**
Long-eared myotis *Myotis evotis*	S	✓		found in wooded and rocky areas. It has been located hibernating in a mine in riverbreaks habitat in northeastern Montana
Long-legged myotis *Myotis volans*	S	✓		typically occupy mountainous or relatively rugged areas. They often live in coniferous forest, although they are sometimes found in oak or streamside woodlands, and even deserts. They feed mostly on moths, but are opportunistic, eating whatever soft-bodied insects are most abundant.
Meadow jumping mouse *Zapus hudsonius*	S		ODR	dense, tall and lush grass and forbs in marshy areas (sometimes with standing water), riparian areas, woody draws, and grassy upland slopes, sometimes within or near forested sites of ponderosa pine. E/SE MT.
Northern myotis *Myotis septentrionalis*	S		ODR	located hibernating in an abandoned mine in riverbreaks habitat in Richland County. prefers cooler hibernacula than *Myotis lucifugus* and selects narrow crevices in which to hibernate. NE MT.

Pallid bat *Antrozous pallidus*	S		ODR	arid deserts, juniper woodlands, sagebrush shrub-steppe, and grasslands, often with rocky outcrops and water nearby. arid and semi-arid regions throughout northern Mexico and the western United States. Pallid bats eat beetles, grasshoppers, and moths, and they forage for slow-moving prey, such as scorpions, flightless arthropods, and sometimes lizards, at and near ground level. visit flowers in their hunt for insects, and are natural pollinators of several species of cactus. S. Central MT.
Pygmy rabbit *Brachylagus idahoensis*	S		ODR	shrub-grasslands on alluvial fans, floodplains, plateaus, high mountain valleys, and mountain slopes, where suitable sagebrush cover and soils for burrowing are available. Some occupied sites may support a relatively sparse cover of sagebrush and shallow soils, but these usually support patches of dense sagebrush and deeper soils. Big sagebrush was the dominant shrub at all occupied sites, averaging 21.3 to 22.6% coverage; bare ground averaged 33% and forbs 5.8%. SW MT.
Swift fox *Vulpes velox*	S		HAB	open prairie and arid plains, including areas intermixed with winter wheat fields in north-central Montana. They use burrows when they are inactive; either dug by themselves or made by other mammals (marmot, prairie dog, badger). The burrows are usually located in sandy soil on high ground such as hill tops in open prairies, along fencerows, or occasionally in a plowed field. Suitable habitat generally extensive in size (preferably over 100,000 acres), with relatively level topography, and with greater than 50% of the area undisturbed by agriculture. A total of 8,000,000 suitable acres were identified in Montana
Townsend's big-eared bat *Plecotus townsendii*	S	✓		associated with caves & abandoned mines for day roosts & hibernacula, will also use abandoned buildings in western shrubland, piñon/juniper woodlands, & open montane forests in elevations up to 9,500 ft.
White-tailed prairie dog *Cynomys leucurus*	S		ODR	xeric sites with mixed stands of shrubs and grasses. habitats dominated by two types of vegetation: areas with Nuttall saltbrush with lesser amounts of big sage, and areas with poverty sumpweed and winter fat. Extreme S. Central MT
Wolverine *Gulo gulo*	S/C		HAB	alpine & subalpine mature/intermediate timbered areas around natural openings, including cliffs, slides, basins, & meadows, dependant on ungulates, range extending the length of the Rocky Mts.

Bueau of Land Management (BLM). 2009. 2009 Montana/Dakotas Special Status Species List. Instruction Memorandum No. MT-2009-039 (April 24, 2009). http://www.blm.gov/mt/st/en/res/public_room/efoia/2009/IMs/09mtm039.html

U.S. Fish and Wildlife Service (FWS). 2012. Endangered, Threatened, Proposed and Candidate Species Montana Counties. Ecological Services Montana Field Office (February, 2012). **http://www.fws.gov/montanafieldoffice/Endangered_Species/Listed_Species.html** accessed 4/24/12**.**

Appendix D. Potential threatened, endangered and proposed species within the proposed lease parcels

Species	PH	73	74	75
Great Plains toad			✓	✓
Northern leopard frog			✓	✓
Plains spadefoot			✓	✓
Greater short-horned lizard	✓	✓	✓	✓
Milk snake		✓	✓	✓
Western hog-nosed snake	✓	✓	✓	✓
Baird's sparrow	✓	✓	✓	✓
Bald eagle	✓	✓	✓	✓
Bobolink	✓	✓	✓	✓
Brewer's sparrow		✓	✓	✓
Chestnut-collared longspur	✓	✓	✓	✓
Dickcissel	✓	✓	✓	✓
Ferruginous hawk	✓	✓	✓	✓
Golden eagle	✓	✓	✓	✓
Greater sage-grouse			✓	
Loggerhead shrike		✓	✓	✓
Long-billed curlew	✓	✓	✓	✓
Marbled godwit	✓	✓	✓	✓
McCown's longspur	✓	✓	✓	✓
Sage thrasher		✓	✓	✓
Spragues pipit	✓	✓	✓	✓
Swainson's hawk	✓	✓	✓	✓
White-faced ibis	✓		✓	✓
Fringed myotis		✓	✓	✓
Grizzly bear	✓			
Long-eared myotis		✓	✓	✓
Long-legged myotis		✓	✓	✓
Townsend's big-eared bat		✓	✓	✓

Appendix E. Determination Summary for the 2012 LFO Oil and Gas Leasing Project

Species	No Action	Proposed Action
Great Plains toad	NI	MIIH
Northern leopard frog	NI	MIIH
Plains spadefoot	NI	MIIH
Greater short-horned lizard	NI	MIIH
Milk snake	NI	MIIH
Western hog-nosed snake	NI	MIIH
Baird's sparrow	NI	MIIH
Bald eagle	NI	MIIH
Bobolink	NI	MIIH
Brewer's sparrow	NI	MIIH
Chestnut-collared longspur	NI	MIIH
Dickcissel	NI	MIIH
Ferruginous hawk	NI	MIIH
Golden eagle	NI	MIIH
Greater sage-grouse	NI	MIIH
Loggerhead shrike	NI	MIIH
Long-billed curlew	NI	MIIH
Marbled godwit	NI	MIIH
McCown's longspur	NI	MIIH
Sage thrasher	NI	MIIH
Sprague's pipit	NI	MIIH
Swainson's hawk	NI	MIIH
White-faced ibis	NI	MIIH
Fringed myotis	NI	MIIH
Grizzly bear	NE	NLAA
Long-eared myotis	NI	MIIH
Long-legged myotis	NI	MIIH
Townsend's big-eared bat	NI	MIIH

Federally Listed Species
NE – No Effect
***LAA** – May Effect, Likely to Adversely Affect (formal USFWS consultation required)
NLAA – May Effect, Not Likely to Adversely Affect (informal USFWS consultation required)
BE – Beneficial Effect (informal USFWS consultation required)

Sensitive Species
NI – No Impact
MIIH – May Impact Individuals or Habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species
***WIFV** – Will Impact Individuals or habitat that is likely contribute to a trend toward federal listing or cause a loss of viability to the population or species
BI – Beneficial Impact

U.S. Department of the Interior
Bureau of Land Management
Lewistown Field Office
920 NE Main Street
Lewistown, MT 59457

Finding of No Significant Impact
Environmental Assessment DOI-BLM-MT-L060-2012-0041-EA

INTRODUCTION:

The Bureau of Land Management (BLM) has conducted an environmental analysis (EA) (DOI-BLM-MT-L060-2012-0041-EA) to analyze the potential effects from offering for lease the federal minerals on 4 lease parcels (1 whole and 3 partial) administered by the Lewistown Field Office. The analysis was prepared based on parcel site visits and available inventory and monitoring data files.

Impact identification and analysis of the No Action Alternative and the BLM Preferred Alternative, (which includes deferred parcel acreages) has been completed. The No Action Alternative, would be to not offer for lease 4 parcels (1 whole and 3 partial) nominated through expressions of interest (EOI). The Preferred Alternative would be to offer 4 parcels (1 whole and 3 partial) totaling 1,442.3 acres of federal mineral estate for competitive and/or noncompetitive lease issuance. Seventeen parcels (17 whole and 3 partial) containing 5,230.18 acres of federal minerals would be deferred from leasing pending completion of a Resource Management Plan (RMP) that includes a decision regarding oil and gas leaseing.

In 1988, the BLM suspended lease issuance on lands that required special stipulations to protect wildlife resources until a new resource management plan was completed. This was a result of a protest on issuance of oil and gas leases by the BLM in Montana. In the early 1990s, the BLM prepared the Judith-Valley-Phillips RMP to address this protest along with other resource issues. However, a subsequent protest to the 1992 Judith-Valley-Phillips RMP warranted a supplement to address an alternative for oil and gas leasing that would avoid leasing valuable wildlife habitat. The BLM will continue to defer leasing federal minerals that would require special wildlife stipulations until a new RMP is completed.

Standard terms and conditions and the stipulations identified in Appendix A of the EA, would apply to leases. Lease stipulations (as required by Title 43 Code of Federal Regulations 3101.1-3) were added to each parcel as identified by the Lewistown Field Office to address site specific resource concerns or new information not identified in the planning process.

FINDING OF NO SIGNIFICANT IMPACT:

Based on my review of the EA and all other available information, I have determined that the proposal, including the implementation of required stipulations, is not a major federal action and will not significantly affect the quality of the human environment, individually or cumulatively with other actions in the general area. No potential environmental effects associated with the

project meet the definition of significance in context or intensity as defined in 40 CFR 1508.27, nor do potential effects exceed those effects described in the Fergus Management Framework Plan (January 1978), the Lewistown District Oil & Gas Environmental Assessment of the BLM Leaseing Program (September 1981) and the Headwaters Resource Management Plan (RMP) and accompanying Environmental Impact Statement (EIS) (September 1984). Therefore, an EIS is not required. Any future proposed development on lease parcels would be subject to additional site-specific NEPA analysis and documentation.

With regard to the issue of impacts to global climate change (GCC) and/or levels of greenhouse gas (GHG) emissions that may contribute to GCC, as discussed in the EA, the current state of the science does not allow determinations to be made about the specific effects of specific actions. Therefore, while I find that the proposed action would result in no significant impacts, either individually or cumulatively, as described in more detail below in the FONSI, no similar finding is made with respect to GCC or GHG emissions. However, given the state of the science, preparation of an environmental impact statement is not warranted, as it would not further inform my decision, or the public, with respect to the significance or lack thereof, of this proposed action as to the issue of GCC or GHG.

This determination is based on the context and intensity of the project as described:

Context:
The Preferred Alternative would occur within the Lewistown Field Office boundary and would have local impacts on the resources similar to and within the scope of those described and considered in the Fergus Management Framework Plan (January 1978) and the Headwaters Resource Management Plan (RMP) and accompanying Environmental Impact Statement (EIS) (September 1984). The project is a site-specific action directly involving 1,442.3 acres more or less of federal minerals administered by the BLM, by itself does not have international, national, regional, or state-wide importance.

Intensity:
The following discussion is organized around the Ten Significance Criteria described in 40 CFR 1508.27 and incorporated into resources and issues considered (includes supplemental authorities Appendix 1 H-1790-1) and supplemental Instruction Memorandum, Acts, regulations and Executive Orders.

The following have been considered in evaluating intensity for this proposal:

1. Impacts may be both beneficial and adverse: Beneficial, adverse, direct, indirect and cumulative environmental impacts have been disclosed in the EA. Mitigating measures and stipulations to reduce impacts to the various resources were incorporated in the design of the preferred alternative. Analysis indicated no significant impacts on society as a whole, the affected region, the affected interests or the locality. The physical and biological effects are limited to the Lewistown Field Office and adjacent land.

2. The degree to which the selected alternative will affect public health or safety: Public health and safety would not be adversely impacted. There are no known or anticipated concerns with project waste or hazardous materials.

3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farm lands, wetlands, wilderness, wild and scenic rivers, or ecologically critical areas: Unique characteristics present within the project area include historic and cultural resources. These characteristics have been deemed to be not affected by the preferred alternative with mitigating measures attached to each parcel. There are no impacts to park lands, prime farmlands, wetlands, wilderness, wild and scenic rivers, or ecologically critical areas.

4. The degree to which the effects on the quality of the human environment are likely to be highly controversial: No anticipated effects have been identified that are controversial. While the preferred alternative may be somewhat controversial to some members of the public, the preferred alternative conforms with current land use plan guidance in which these parcels were allocated as open for oil and gas leasing. As a factor for determining (within the meaning of 40 CFR section 1508.27(b) (4)) whether or not to prepare a detailed environmental impact statement, "controversy is not equated with "the existence of opposition to a use." *Northwest Environmental Defense Center v. Bonneville Power Administration***,** 117 F.3d 1520, 1536 (9th Cir. 1997).

5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks: The preferred alternative of offering and issuing oil and gas leases is not unique or unusual. The EA describes and discloses impacts from typical exploration and development activities that could occur on a federal lease, as well as identifies stipulations and/or mitigation measures designed to minimize or eliminate impacts. Sufficient information on risk is available based on information in the EA and other past actions of a similar nature. There are no predicted effects that are highly uncertain or involve unique or unknown risk.

6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration: This project neither establishes a precedent nor represents a decision in principle about future actions. A federal oil and gas lease provides the lessee with the opportunity to explore for and develop oil and gas resources after receipt of necessary approvals. Any future proposed development on lease parcels would be subject to additional site-specific NEPA analysis and documentation. The actions considered in the selected alternative were considered by the interdisciplinary team within the context of past, present, and reasonably foreseeable future actions.

7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts – which include connected actions regardless of land ownership: The interdisciplinary team evaluated the possible actions in context of past, present and reasonably foreseeable actions. No significant cumulative effects were identified or predicted.

8. The degree to which the action may adversely affect districts, sites, highways, structures, or other objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources: Based on previous and ongoing cultural surveys, and through mitigation by avoidance, no adverse impacts to cultural resources were identified or anticipated. There are no features within the project area listed or eligible for listing in the National Register of Historic Places that would be adversely affected by the preferred alternative.

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973, or the degree to which the action may adversely affect: 1) a proposed to be listed endangered or threatened species or its habitat, or 2) a species on BLM's sensitive species list: Based on information obtained from the Montana Natural Heritage Program website (MNHP 2012), there are no known occurrences of federally threatened or endangered species on the proposed lease parcels. Grizzly bear use has been documented near one of the proposed lease parcels; however, the parcel is not deemed to be critical habitat by the Fish and Wildlife Service. A portion of two of the partially offered parcels are located within preliminary general habitat for greater sage-grouse. Site visits to the parcels indicate the portions being offered are not providing greater sage-grouse habitat due to current condition of the existing vegetation and habitat fragmentation. Site visits to the portion of parcel proposed for leasing in Pondera County indicate that they do not meet the habitat requirements for Sprauge's Pipit. Several BLM sensitive species have been documented within the proposed lease parcels. Stipulations designed to minimize impacts to listed or proposed to be listed threatened or endangered species or their habitat and sensenstive species or their habitats have been included with the BLM preferred alternative.

10. Whether the action threatens a violation of a federal, state, local, or tribal law, regulation or policy imposed for the protection of the environment, where on-federal requirements are consistent with federal requirements: The preferred alternative does not violate any known federal, state, local or tribal law or requirements imposed for the protection of the environment. State, local and tribal interests were given the opportunity to participate in the environmental analysis process. In addition, the project is consistent with applicable land management plans, policies and programs.

Recommended by:

Geoff Beyersdorf, Field Manager
date

Concurrence by:

Gary L. “Stan” Benes, District Manager
date

Approved by:
Theresa M. Hanley
Theresa M. Hanley, Deputy State Director, Division of Resources
date