United States Department of the Interior

BUREAU OF LAND MANAGEMENT
HiLine District Office
www.blm.gov/mt

In Reply Refer To:

1600/3100
MTM040

July 24, 2013

Dear Reader,

The Bureau of Land Management (BLM) HiLine District Office has prepared an environmental assessment (EA) to analyze the potential effects from offering and issuing 4 nominated lease parcels of federal minerals for competitive oil and gas leasing in a sale tentatively scheduled to occur on October 22, 2013. The EA was available for a 30-day public comment period.

Based on our analysis and review of comments received, the EA has been updated (refer to Chapter 5 of the EA for a summary of public comments). A competitive oil and gas lease sale is tentatively scheduled to be held on October 22, 2013. It will be my recommendation to offer the 4 lease parcels in whole, 880.15 surveyed federal mineral acres, along with stipulations identified in the BLM preferred alternative in the updated EA, see Appendix A.

We anticipate preparing and finalizing our Decision Record after the October oil and gas lease sale, but prior to lease issuance. Upon finalization, the Decision Record and accompanying finding of no significant impact (FONSI) will be posted on the website listed below.

Please refer to the Montana/Dakotas BLM website at http://blm.gov/h2kd. Current and updated information about our EAs, Lease Sale Notices, and corresponding information pertaining to this sale can be found at the link referenced above. Once there, locate the October 22, 2013 lease sale to review the MCFO EA and the parcel list with recommended stipulations.

If you have any questions, or would like more information about the issuance of the updated EA, Decision Record and FONSI, please contact us at 406-791-7700.

Sincerely,

Mark K. Albers
District Manager

United States Department of the Interior
Bureau of Land Management

Environmental Assessment DOI-BLM-MTM020-2013-0008-EA
July 24, 2013

Project Title: Oil and Gas Lease Parcel Sale,
October 22, 2013

Location: HiLine District, specifically in the Glasgow Field Office
(See attached Appendix A for list of lease parcels by number and legal description and Maps)

U.S. Department of the Interior
Bureau of land management
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Glasgow Field Office Oil and Gas Lease Sale EA
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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 257 nominated lease parcels located in the Glasgow Field Office (GFO), to be included as part of a competitive oil and gas lease sale tentatively scheduled to occur in October 2013. Of the 257 nominations, 251 are located within, or immediately adjacent to, priority Greater Sage-Grouse (Candidate Species) habitat. Of the nominated parcels, 2 are located in primary habitat for Sprague's pipit. The analysis area includes 257 nominated parcels in Valley County (See Map 1 located in Appendix C for location). Refer to Section 2.3 – Alternatives Considered but Dismissed from Further Analysis for additional information and rationale as to why 253 parcels are not considered in detail.

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 and conforms to the information and analysis contained in the Judith-Valley-Phillips Resource Management Plan (JVP RMP). Although the JVP RMP was approved in 1994 to guide management of all resources within the Glasgow Field Office, it did not make any specific decisions relative to the leasing of fluid minerals due to a protest on the 1992 Final RMO. Since that time, the Glasgow Field Office has, and will continue, to defer leasing of nominated parcels that would require special stipulations to protect important wildlife values until a new RMP is completed. The leasing of nominated parcels not requiring special wildlife stipulations has continued in the Glasgow Field Office through reliance on the leasing decisions made in previous land use plans and programmatic analyses. This EA is tiered to and conforms to the information and analysis contained in the Valley County management Framework Plans (MFP) (1977) and the Oil & Gas Environmental Assessment of the BLM Leasing Program – Lewistown District (September 1981).

The parcels to be offered are within areas open to oil and gas leasing. Analysis of the four parcels is documented in this EA, and was conducted by Glasgow Field Office, HiLine District, and Montana State 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 the HiLine District RMP that is currently being written.

At the time of this review it is unknown whether a particular parcel will be sold and a lease issued. It is unknown when, where, or if future well sites, roads, and facilities might be proposed. Assessment of potential activities and impacts was based on potential well densities discerned from the Reasonably Foreseeable Development (RFD) Scenario developed for the HiLine District. 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 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.

BLM Instruction Memorandum (IM) No. 2012-043 of 27 December 2011 titled "Greater Sage-Grouse Interim Management Policies and Procedures" was also consulted. Many of the parcels are in Preliminary Priority habitat (PPH) with less parcels being in adjacent Preliminary General Habitat (PGH) areas. That IM said for Fluid Mineral Leasing that "Field Offices retain the discretion to not move forward with a nomination or defer making a final decision on a leasing decision until the completion of the LUP process described in the *National Greater Sage-Grouse Planning Strategy* for the affected area." Nominations in PGH could also be deferred if authorizations could result in Greater Sage-Grouse population loss in adjoining PPH. That guidance was followed for large areas of PPH and PGH occupied by Greater Sage-Grouse in the Glasgow Field Office.

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 Glasgow Field Office website National Environmental Policy Act (NEPA) notification log. Scoping was initiated March 22, 2013. Several scoping comments pertained to general concerns related to mineral ownership and split estate questions, while other scoping comments were specific to resource concerns. Refer to Chapter 5 of this EA for a more complete summary of the scoping comments received.

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 BOR, COE, MFWP and USFWS was conducted for 4 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 stipulations associated with these parcels being analyzed.

The BLM consults with Native Americans under Section 106 of the National Historic Preservation Act. BLM sent letters to Tribal Presidents and THPO's of the Blackfeet, Gros Ventre, Assiniboine, Sioux, Flathead (Salish) Kootenai, Shoshone, Bannock, Northern Cheyenne, Little Shell Tribe of Chippewa, Nez Perce, Crow, and Cree Tribes on April 4, 2013 informing them of the potential for the 4 parcels to be leased and inviting them to submit issues and concerns BLM should consider in the environmental analysis. No specific issues were identified with the 4 parcels to be leased.

BLM will send a second letter to the tribes informing them about the 30 day public comment period for the EA and solicit any information BLM should consider before making a decision.

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 257 parcels within the Glasgow 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 – Proposed Action

The Proposed Action Alternative would be to offer four parcels of federal minerals for oil and gas leasing, covering 880.15 acres administered by the Glasgow Field Office, in conformance with the existing land use planning decisions. The parcels are located in Valley County, Montana. Parcel number, size, and detailed locations and associated stipulations are listed in Appendix A. Map **1** indicates the detailed location of each parcel.

The four parcels being offered for lease are:

MTM 102757-6L	320 ac	Valley County	
MTM 102757-6N	160 ac	Valley County	
MTM 102757-6P	320 ac	Valley County	50% federal mineral interest
MTM 102757-6J	80.15 ac	Valley County	

Since all offered parcels are split estate (private surface), the BLM provided courtesy notification to private landowners that their lands are considered in this NEPA analysis and would be considered for inclusion in an upcoming lease sale. If any activity were to occur on such split estate 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. Standard lease terms, stipulations, conditions, and operating procedures would apply to these parcels.

Standard operating procedures, best management practices and required conditions of approval and the application of lease stipulations change over time to meet overall RMP objectives. In some cases new lease stipulations may need to be developed and these types of changes may require an RMP amendment. There is no relief from meeting RMP objectives if local conditions were to become drier and hotter during the life of the RMP. In this situation, management practices might need to be modified to continue meeting overall RMP management objectives. An example of a climate related modification is the imposition of additional conditions of approval to reduce surface disturbance and implement more aggressive dust treatment measures.

Both actions reduce fugitive dust, which would otherwise be exacerbated by the increasingly arid conditions that could be associated with climate change.

Oil and gas leases would be issued for a 10-year period and would continue for as long thereafter as oil or gas is produced in paying quantities. If a lessee fails to produce oil and gas, 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.

2.3 Alternatives Considered, but Eliminated from further Analysis

An alternative that included leasing all 253 deferred nominations that are located within or immediately adjacent to the State of Montana Sage-Grouse core areas was considered. There are several issues surrounding this potential alternative that complicate leasing (or offering to lease) these parcels at this time. Four key factors, as described below, were considered to reach this conclusion: 1) Quality of the affected habitat, 2) Recent research, funded in part by this Agency, 3) Ongoing conservation efforts by other Federal Agencies, and 4) Impending release of an updated Resource Management Plan with specific measures to address all of the above. These 253 nominations will be reconsidered once the HiLine RMP is complete. The total acreage of deferred parcels is 103,652.62 acres.

The Glasgow Field Office contains important breeding and nesting range of the Candidate Sprague's pipit. Important habitat for the Sprague's pipit was a primary consideration in the deferral of 2 parcels. Two hundred and fifty-three parcels were deferred because of the presence of high value habitat for both the Sprague's pipit and the Greater Sage-Grouse. These include some parcels with less than optimum Sprague's pipit habitat. The parcels that are being carried forward for analysis in the Proposed Action contain almost no Sprague's pipit habitat at present because of cultivation and the introduction of non-native grass cover. The Sprague's Pipit Lease Notice (14-15) would be attached to the leases however, in case the vegetation reverts to native grass cover prior to any development during the terms of the leases.

1) Quality of the Affected Habitat

The 253 parcels are within, or immediately adjacent to, two Greater Sage - Grouse Core Areas as designated by the State of Montana's Fish, Wildlife and Parks. As defined by the State of Montana Sage-Grouse Core Areas are:

Definition: Sage-grouse core areas are habitats associated with 1) Montana's highest densities of sage-grouse (25% quartile), based on male counts and/or 2) sage-grouse lek complexes and associated habitat important to sage-grouse distribution.

These Core Areas are also considered Preliminary Priority Habitat (PPH) as defined in BLM Instruction Memorandum (IM) No. 2012-043 "Greater Sage-Grouse Interim Management Policies and Procedures." Most of the areas adjacent to PPH are considered Preliminary General Habitat (PGH), also defined in IM No. 2012-043. Most of the land area in the Glasgow Field

Offices is either PPH or PGH except for the Little Rocky Mountains, timbered portions of the Missouri River Breaks, and agricultural areas along the Milk River.

As such, these areas represent some of the most important habitat areas for future conservation of Greater Sage-Grouse within the State of Montana.

2) Recent Research

Oil and gas development may, or may not be compatible with Sage-Grouse habitat depending upon the type and level of development proposed and the specific characteristics of the habitat to be affected. It has been shown that oil and gas development has negatively impacted sage-grouse in the past. Based on recent research, the current oil and gas stipulations for sage-grouse are considered ineffective to ensure that sage-grouse can persist within fully developed areas. With regard to existing restrictive stipulations applied by the BLM, (Walker et al. 2007a) research has demonstrated that the 0.4-km (0.25 miles) NSO lease stipulation is insufficient to conserve breeding sage-grouse populations in fully developed gas fields because this buffer distance leaves 98 percent of the landscape within 3.2 km (2 miles) open to full-scale development. Full-field development of 98 percent of the landscape within 3.2 km (2 miles) of leks in a typical landscape in the Powder River Basin reduced the average probability of lek persistence from 87 percent to 5 percent (Walker et al. 2007a).

Other studies also have assessed the efficacy of existing BLM stipulations for sage-grouse. Impacts to leks from energy development are most severe near the lek, and remained discernible out to distances more than 6 km (3.6 miles) (Holloran 2005, Walker et al. 2007a), and have resulted in the extirpation of leks within gas fields (Holloran 2005, Walker et al. 2007a). Holloran (2005) shows that lek counts decreased with distance to the nearest active drilling rig, producing well, or main haul road, and that development influences counts of displaying males to a distance of between 4.7 and 6.2 km (2.9 and 3.9 miles). All well-supported models in Walker et al. (2007a) indicate a strong effect of energy development, estimated as proportion of development within either 0.8 km (0.5 miles) or 3.2 km (2 miles), on lek persistence. Buffer sizes of 0.25 mi., 0.5 mi., 0.6 mi. and 1.0 mi. result in an estimated lek persistence of 5 percent, 11 percent, 14 percent, and 30 percent. Lek persistence in the absence of oil and gas field development averages approximately 85 percent. Models with development at 6.4 km (4 miles) had considerably less support, but the regression coefficient indicated that impacts were still apparent out to 6.4 km (4 miles) (Walker et al. 2007a). Tack (2010) found impacts of energy development on lek abundances (numbers of males per lek) out to 7.6 miles.

The previously used 2 mile timing stipulation only applies between March 1 to June 15, and development can occur within the 2 miles of the lek outside of those dates. Not all lease parcels would be expected to see full field development as noted in the range of RFD, although effects would most likely mirror these studies to some degree proportionate to the amount of development that occurs outside of the stipulated timeframe.

Noise has been shown to affect sage-grouse and associated sagebrush obligates. Sage-grouse are known to select highly visible leks with good acoustic properties. Effects to sage-grouse would be a decrease in numbers of males on leks and activity levels and lower nest initiation near oil and gas development. Sage-grouse numbers on leks within 1.6 km (1 mile) of coal bed natural

gas compressor stations in Campbell County, Wyoming were shown to be consistently lower than on leks not affected by this disturbance (Braun et al. 2002). Holloran (2005), Holloran et. al (2005a, 2005b), Holloran and Anderson (2005) reported that lek activity by sage-grouse decreased downwind of drilling activities, suggesting that noise had measurable "negative" impacts on sage-grouse. The actual level of noise (measured in decibels) that would not affect Greater Sage-Grouse breeding and nesting activities is presently unknown.

3) Ongoing conservation efforts by other Agencies

The Natural Resources Conservation Service (NRCS) has recently undertaken a large cooperative project within the State of Montana to provide assistance to agricultural producers to initiate conservation practices beneficial to Greater Sage-Grouse. Core Area 4 (Golden Valley County), was selected as the pilot Core Area for this effort. To date (fiscal years 2010 and 2011) the NRCS has invested $3,623,000 to support Sage- Grouse conservation, to protect 128,000 acres. Also in fiscal year 2011, the NRCS has invested, or is planning to invest another $1,606,000 to protect 52,000 acres in Core Area 3 (Petroleum County) and Core Area 4 (Musselshell County). Additional work has now been completed through the Glasgow Working Group in Phillips and Valley Counties. Effectiveness monitoring of the conservation practices is an integral part of the NRCS program. Leasing and subsequent oil and gas development at this time could jeopardize the substantial investment that the federal government has made, and at the least, would cloud any results of the effectiveness monitoring.

4) HiLine Resource Management Plan

The HiLine District composed of Havre, Malta and Glasgow Field Offices, in addition to the Great Falls Oil and Gas Field Office is in the process of completing a Resource Management Plan. The process began in 2008, and the draft RMP has since been released for public review.

Since 2008 there have been substantial improvements in oil and gas development technology, as well as our understanding of Sage-Grouse life history requirements and development related disturbance impacts (see item 2 above). The updated RMP (in progress) will provide stipulations relative to oil and gas development and Sage Grouse habitat based upon our current understanding, including those areas where no development may be the appropriate management response.

Based on these considerations and careful review, the 253 parcels would be eliminated from detailed study in this analysis and deferred to a later date.

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 Valley County.

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.

The public land in Valley County is both contiguous in large blocks of land and is also scattered tracts, intermingled with private and state-owned tracts. The general climate in north-central Montana is Middle Latitude Steppe. This is a semi-arid region characterized by low rainfall, low humidity, clear skies, and wide ranges in annual and diurnal temperatures. Average annual precipitation is about 14 inches with about one third of that falling in May and June. The driest period is from November to February. Heavy snows are not unusual during the winter. Strong downslope winds known as Chinooks have a thawing and drying effect, and snow seldom accumulates to great depths.

The Glasgow Field Office management area is situated within the area called the Northern Plains. Portions of the management area also include the island mountain range of the Little Rocky Mountains. Portions of the Milk River are included in the Glasgow Field Office management area.

The topography in north-central Montana is general rolling plains, punctuated with steep coulees as one travel nearer to the Missouri River breaks.

Only those aspects of the affected environment that are potentially impacted by this project are described in detail. Resources and resource uses that were determined to be not present or not potentially impacted will not be discussed further in this EA. The Critical Elements table (Table 1) is a summary of Resources and resource uses with a rational for determination.

Table 1: Summary of Critical Elements of the Human Environment and Other Resources/Concerns

Critical Elements		
Determination*	**Resource**	**Rationale for Determination**
PI	Air Quality *(The Clean Air Act of 1970, as amended)*	See discussion in section 3.2.1
NP	Areas of Critical environmental Concern *(Federal Land Policy and Management Act of 1976)*	There are seven ACEC's within the HiLine District planning area. None of the proposed lease sale parcels occur within and ACEC, See Section 3.17.2
PI	Cultural Resources *(National Historic Preservation Act of 1966, as amended)*	See discussion in section 3.8
PI	Environmental Justice	See discussion in section 3.18.1

	(Executive Order 12898)	
NI	Farmlands (Prime & Unique) *(Surface Mining Control and Reclamation Act of 1977)*	Special mitigation would be required to ensure there is no unnecessary and irreversible conversion of prime farmland to nonagricultural uses
NP	Floodplains *(Executive Order 11988)*	See discussion in section 3.5.2 under wetland/riparian
PI	Invasive, Non-native weed species *(Federal Noxious Weed Act of 1974, as amended)*	See discussion in sections 3.5.3
NP	Native American Religious Concerns *(Executive Order 13007)*	See discussion in section 3.9
NP	Threatened, Endangered, or Candidate Plant Species *(Endangered Species Act of 1973, as amended)*	See discussion in sections 3.6.1.1 & 3.6.1.2
NP	Wastes (hazardous or solid) *(Resource Conservation and Recovery Act of 1976, and Comprehensive Environmental Response, Compensation, and Liability Act of 1980)*	There are no known wastes (hazardous or solid located in the proposed lease sale parcels.
NI	Water Quality (drinking/ground) *(Safe Drinking Water Act of 1974, as amended and Clean Water Act of 1977)*	See discussion in section 3.5.2 and 3.7.1
NI	Wetlands/Riparian Zones *(Executive Order 11990)*	See discussion in section 3.5.2
NP	Wilderness *(Federal land Policy and management Act of 1976 and Wilderness Act of 1964)*	There are no designated Wilderness Areas within the HiLine District planning area. There are two Wilderness Study Areas (WSA) within the District but neither is present within these lease parcels. Each of these WSAs is closed to oil and gas leasing.
OTHER RESOURCES / CONCERNS		
Determination*	**Resource**	**Rationale for Determination**
NP	Fish and Wildlife including Special Status Species other than FWS candidate or listed species *e.g. Migratory birds (E.O. 13186)*	Because there are no aquatic habitats within the lease parcels, no aquatic wildlife species occur in the lease parcels. Species that are in aquatic habitats near parcels are northern leopard frog, Northern redbelly X Finescale Dace and sauger. Data from Montana natural Heritage Tracker. See discussion in wildlife in section 3.6
NI	Geology / Mineral Resources / Energy Production	See discussion in section 3.16

NP	Lands / Access	See discussion in section 3.15
PI	Livestock Grazing *(Taylor Grazing Act of 1934, National Environmental Policy Act of 1969 Endangered Species Act of 1973, Federal land Policy and Management Act of 1976, and the Public Rangelands Improvement Act of 1978)*	See discussion in section 3.13
PI	Paleontology *(Paleontological Resources Protection Act P.L 111-011, HR 146)*	See discussion in section 3.10
PI	Rangeland health Standards and Guidelines *(43 CFR 4180)*	See discussion in section 3.13
NI	Recreation	See discussion in section 3.14
PI	Socioeconomics	See discussion in section 3.18.1
PI	Soils	See discussion in section 3.3
NP	Vegetation including Special Status Plant Species other than FWS candidate or listed species	See discussion in section 3.6.2
PI	Visual Resource Management *(FLPMA 1976, NEPA 1969)*	The public lands are managed as VRM Class IV. If the lands are leased and an APD is received, visual impacts would be addressed with Class IV guidelines. BLM has no authority to address visual impacts on federal non-surface lands but may suggest visual management prescriptions.
NP	Wild Horses and Burros *(Wild and Free Roaming Horses and Burros Act of 1971, as amended)*	Not present within the proposed lease sale parcels.
NP	Wilderness Characteristics	Following FLPMA section 201, the BLM conducted and interdisciplinary team inventory of wilderness characteristics on BLM-administered lands. A total of 26 areas within the HiLine District were found to meet the criteria of wilderness characteristics. None of these lands are present in the parcels covered in this proposal.
NP	Woodland/Forestry	See discussion in section 3.12

*

NP = not present in the area impacted by the proposed or alternative actions.
NI = present, but not affected to a degree that detailed analysis is required
PI = present and may be impacted to some degree. Will be analyzed in affected environment and environmental impacts.
(NOTE: PI does not mean impacts are likely to be significant in any way.)

3.2 Air Resources

Air quality and climate are the components of air resources, which include applications, activities, and management of the air resource. Therefore, the BLM must consider and analyze 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 nationally regulated ambient 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 ($PM_{2.5}$), and sulfur dioxide (SO_2). Two additional pollutants, nitrogen oxides (NO_x) and volatile organic compounds (VOC_s) are regulated because they form ozone in the atmosphere. Regulation of air quality is also delegated to some states. Air quality is determined by atmospheric pollutants and 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 not currently monitored. However, based on data from a nearby monitor in Richland County, air quality within the analysis area is believed to be much better than required by the NAAQS. The EPA air quality index (AQI) is an index used for reporting daily air quality (http://www.epa.gov/oar/data/geosel.html). The index tells how clean or polluted an area's air is and whether associated health effects might be a concern. The EPA calculates the AQI for the five major criteria air pollutants regulated by the Clean Air Act (CAA): ground-level ozone, particulate matter, carbon monoxide, sulfur dioxide, and nitrogen dioxide. For each of these pollutants, EPA has established national air quality standards to protect public health. An AQI value of 100 generally corresponds to the national air quality standard for the pollutant, which is the level the EPA has set to protect public health. 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 AQQI 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.

The AQI data (Table 2) for the nearest monitor, which is located near Sidney (Richland County), shows that there is likely to be little risk to the public from air quality in Phillips and Valley counties. Between 2009 and 2011, 94 percent of the days were rated "good" with 6 percent rated "moderate". Valley county is considered to be attaining the NAAQS. In mid-2012, the Montana Department of Environmental Quality plans to install a new monitor near Malta that will measure ambient concentrations of ozone, PM_{10}, $PM_{2.5}$, and NO_2.

Table 2: US EPA – AirData Air Quality Index Report (2009-2011)

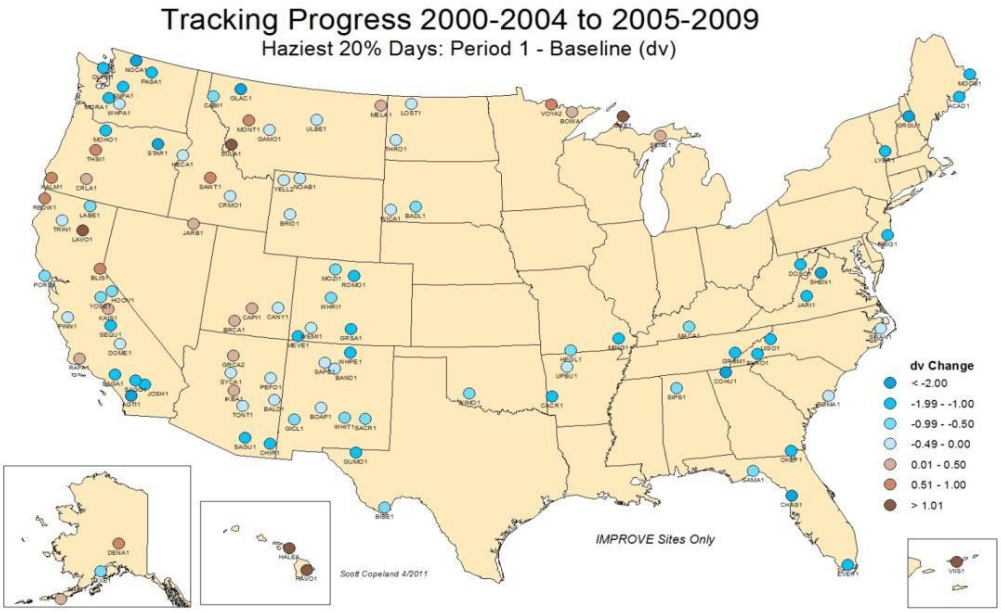
County	# Days with Data	# Days Rated Good	Percent of Days Rated Good	# Days Rated Moderate	# Days Rated Unhealthy for Sensitive Groups	# Days Rated Unhealthy	# Days Rated Very Unhealthy
Richland	1095	1013	93%	82	0	0	0

Source: EPA AirData website (http://www.epa.gov/airdata/) accessed March 18, 2013

Although ozone concentrations above the NAAQS have been monitored in some rural areas in other states with oil and gas activity, moderate ozone concentrations have been monitored in Montana oil and gas areas. Montana ozone concentrations are approximately 75 percent of the ozone NAAQS at monitors located near Sidney, Birney, and Broadus, Montana (MDEQ 2013).

Hazardous air pollutants (HAPs) would also be emitted from oil and gas operations, including well drilling, well completion, and gas and oil production. Recent air quality modeling performed for the HiLine District indicates that concentrations of benzene, ethylbenzene, formaldehyde, n-hexane, toluene, and xylene would be less than 15 percent of applicable health-based standards and that the additional risk of cancer would be less than 0.26 in one million (BLM 2013).

Air resources also include visibility protection at Class I areas. Visibility 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 Phillips County on the 20 percent haziest days and on the 20 percent clearest days, as shown in Figure 1.



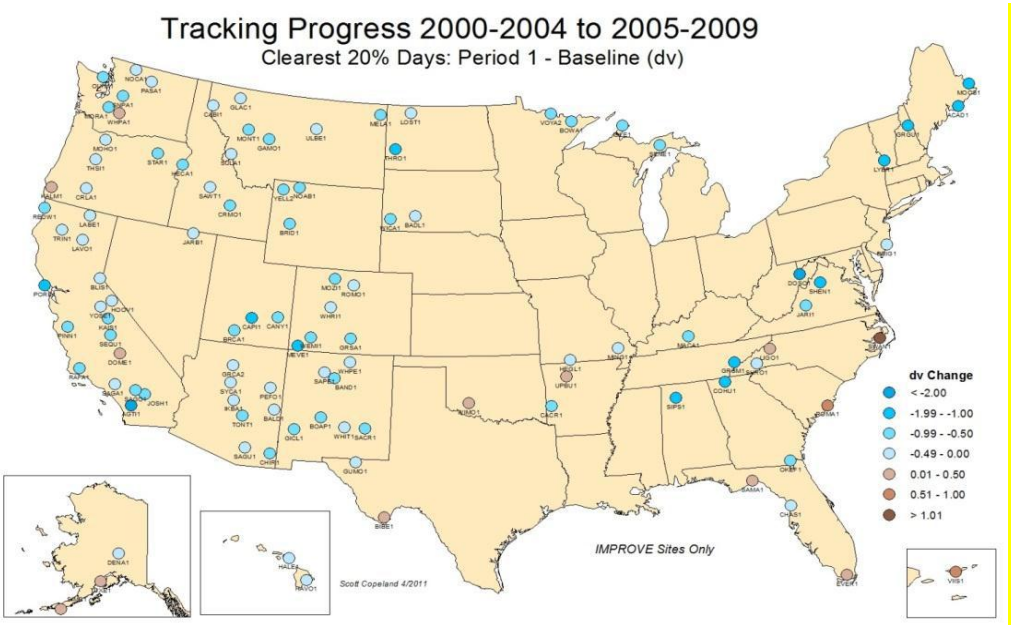


Figure 1. Trends in haze index (deciview on haziest and clearest days, 2005-2009. Source: IMPROVE 2011.

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 2007a). 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 IPCC 2007b (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 believed by scientists to be linked to the atmospheric buildup of 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 radioactive 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 proper 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.openers.com/rpt/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 eastern 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 patters 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 (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 2). This would suggest that runoff may be occurring earlier than in the past. However, data from 1991-2005 indicates a 0.45 degree per decade cooling trend (Figure 3). 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 Niños, La Niñas, and the eruption of large volcanoes (Climate Change SIR 2010). This information illustrates the difficulty of predicting actual regional or site-specific changes or conditions which may be due to climate change during any specific time frame.

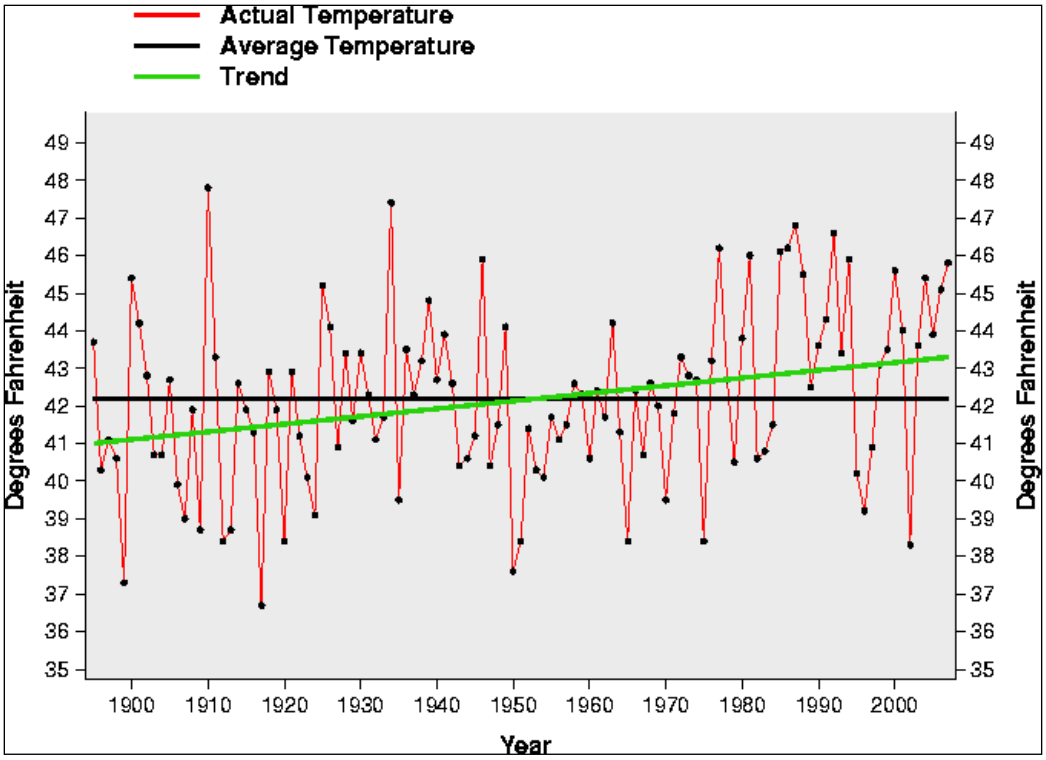


Figure 2. Regional climate summary of spring temperatures (March-May) for the West North Central Region (MT, ND, SD, WY), from 1895-2007. (Source: NOAA website – http://www.ncdc.noaa.gov/oa/climate/research/cag3/wn.html)

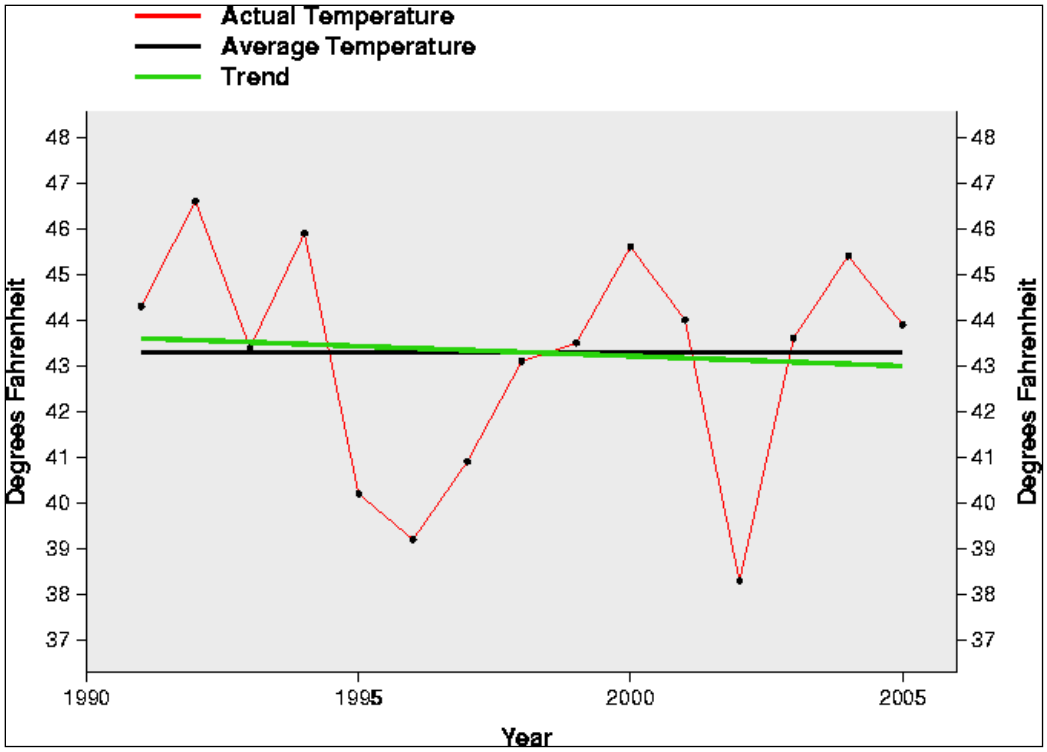


Figure 3. Regional climate summary of spring temperatures (March-May) for the West North Central Region (MT, ND, SD, WY), from 1991-2005. (Source: NOAA website – http://www.ncdc.noaa.gov/oa/climate/research/cag3/wn.html**)**

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 glacial till; residuum weathered from sandstone and siltstone; and, alluvium from mixed sources. Landforms consist of nearly level to steep dissected glacial till plains and hillslopes; moderately steep to steep hillslopes; and, nearly level to gently sloping alluvial fans, terraces, and floodplains.

Table 3 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 3. 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, 2013)).

Parcel	Map Unit	Acres[1]	Slope Range (Percent)	Water Erosion Hazard[2]	Wind Erosion Hazard[3]
MTM102757-6J	57	55	1 - 9	Slight	Slight
	59	22	5 - 25	Moderate	Slight
MTM102757-6L	2	75	0 - 3	Slight	Slight
	3	38	0 - 4	Slight	Slight
	47	40	1 - 9	Slight	Slight
	48	28	1 - 5	Slight	Moderate
	49	63	2 - 9	Slight	Slight
	74	10	0 - 5	Slight	Slight
	77	65	2 - 9	Slight	Slight
MTM102757-6N	20	10	9 - 25	Moderate	Slight
	29	14	15 - 35	Severe	Moderate
	53	29	2 - 9	Slight	Slight
	54	67	9 - 35	Moderate	Slight
	57	20	1 - 9	Slight	Slight
	59	6	5 - 25	Moderate	Slight
	77	15	2 - 9	Slight	Slight
MTM102757-6P	20	6	9 - 25	Moderate	Slight
	54	33	9 - 35	Moderate	Slight
	77	277	2 - 9	Slight	Slight

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

Wetlands were identified from the United States Fish and Wildlife Service's National Wetland Inventory dataset. The U.S. Fish and Wildlife Service is the principal Federal agency that provides information to the public on the extent and status of the nation's wetlands. The National Wetland Inventory dataset provides information on wetland type, location, and size. There are a total of 2.81 acres of wetlands within the parcels nominated for lease sale (Appendix D lists the wetlands that are present in the lease parcels). Wetland characteristics are summarized in the acronyms that are used for identification. Wetlands within the lease parcels may be one of the following types:

PEMA – [P] Palustrine, [EM] Emergent, [A] Temporarily Flooded

PABFh – [P] Palustrine, [AB] Aquatic Bed, [F] Semipermanently Flooded, [h] diked/Impounded

PABF – [P] Palustrine, [AB] Aquatic Bed, [F] Semipermanently Flooded

The U.S. Geological Survey's National Hydrography Dataset (NHD) was used to identify ephemeral and intermittent drainages within the lease parcels. The NHD is a feature-based dataset that interconnects and uniquely identifies the stream segments or reaches that comprise the nation's surface water drainage system.

The analysis area consists of 3.17 miles of ephemeral and/or intermittent drainages (Appendix D lists the drainages that are present in the lease parcels) within the Porcupine Creek Watershed. These drainages are important as they represent the primary flow paths in the watershed and can influence downstream water quality. While the National Hydrography Dataset indicates multiple miles of flow paths, these are generally dry ephemeral drainages. The main stream systems fed by surface water flow within the analysis area include Alkali Creek and the Middle Fork of Porcupine Creek.

Porcupine Creek, from the confluence of the West Fork of Porcupine Creek and the Middle Fork of Porcupine Creek to where Porcupine Creek flows into the Milk River (a total length of 49.3 stream miles), has been listed as water quality impaired. The probable causes of impairment for Porcupine Creek are total nitrogen, total phosphorus, and salinity, with a probable source being non-irrigated crop production. The parcels nominated for lease sale include stretches of the Middle Fork of Porcupine Creek that reside from 22.91 to 26.80 stream miles upstream from the confluence of the West and Middle Forks of Porcupine Creek.

3.4.2 Groundwater

Water well data available for Township 35 North, Range 40 East, indicates that the depth to the water table ranges from 3 to 170 feet below surface with an average depth occurring at 63 feet below surface. Water well data available for Township 34 North, Range 40 East, indicates that the depth to the water table ranges from 5 to 80 feet below surface with an average depth occurring at 47 feet below surface. There is a well in Township 34 North, Range 40 East, section 11 that is pulling water up from the Judith Formation at a depth greater than 400 feet below surface.

The Montana Bureau of Mines and Geology publishes geologic maps that are intended primarily as bedrock maps. Formations are defined through field investigations and by available petroleum and groundwater well data. The map unit contacts are approximate as they are almost always concealed.

The geology under the parcels nominated for lease, for the most part, include glacial till of varying thicknesses that is overlying bedrock. Bedrock includes sand and gravel that is locally cemented. The Claggett Shale is overlain by the Judith River Formation. The Judith River Formation consists of up to 450 feet of gray, brown, and yellow mudstone; thin brown sandstones; and thick multistory-multilateral channel deposits, all of fluvial origin. The Judith

River formation is a widely used source of groundwater with total dissolved solids levels generally ranging from 800 to 2,000 milligrams/liter. Wells in the Judith River formation near the Canadian border have an average yield of 3-4 gallons per minute (gpm) and a potential yield of 20 gpm. The Bearpaw Shale is overlain by the Fox Hills Sandstone.

Appendix D lists the geologic map units that are present directly under each of the lease parcels.

Map Units

Qsg (Quaternary) Sand, gravel, silt or clay on floodplains of modern channels and in or adjacent to former channels. Includes terrace deposits, glacial outwash, and colluvium.

Tsg (Tertiary) Sand and gravel deposits. Predominantly sand and gravel, locally cemented with calcium carbonate. Up to 100 feet thick.

Tfu (Tertiary) Fort Union Formation: includes, from top to base, Tongue River Members, Lebo, and the Tullock. Maximum thickness (northeast of the analysis area) is 500 feet. Formation primarily consists of unconsolidated to semi-consolidated sand and shale.

Khc (Upper Cretaceous) Hell Creek Formation: averages about 250 feet thick. The upper portion is primarily composed of siltstone. The sandstone content increases toward the base of the formation. Where the formation is adequately recharged, it is a productive aquifer.

Kfh (Upper Cretaceous) Fox Hills Sandstone: underlies the Hell Creek Formation (Khc) and has a maximum thickness of 150 feet. This formation offers a higher water well yield than the Hell Creek Formation.

Kb (Upper Cretaceous) Bearpaw Shale: maximum thickness is about 1,100 feet.

3.5 Vegetation Resources

3.5.1 Vegetation Communities: Upland

The vegetation within the analysis area is characteristic of the Northern Dark Brown Glaciated Plains in the 10 to 14-inch precipitation zone, which lies within the Northern Great Plains. The Northern Great Plains is known for its diverse vegetation types, soil types, and topography. Vegetation is comprised of both tall and short grasses as well as both warm and cool season grasses. A variety of grass-like plants, forbs, shrubs and trees also add to the vegetation diversity of this rangeland type. Plant species diversity increases in woody draws and riparian/wetland zones.

Existing influences on local distribution of plant communities include soils, topography, and surface disturbance, availability of water, management boundary fence lines, and soil salinity.

Vegetation communities have been affected by human activities for over a century. Some of these activities include: infrastructure developments (roads, power lines, pipelines, etc.), chemical applications, logging, livestock grazing, farming, and wildfire rehabilitation, prevention, manipulation, and suppression.

The BLM Standards of Rangeland Health (Standards) for BLM administered lands address upland health, riparian health, air quality, water quality, and habitat for native plants and animals. Meeting these Standards ensures healthy, productive, and diverse vegetative resources on public lands. The BLM's policy for implementing the Standards for Rangeland Health (43 CFR §4180.2) provides that all uses of public lands are to complement the established rangeland standards. Application of 43 CFR §4180.2 provides the mechanism to adjust livestock grazing to meet or progress towards meeting Standards for Rangeland Health. Effects of other uses such as oil and gas development or off- highway vehicle use are evaluated against the Standards to provide rationale directing management of these uses.

Five vegetation communities have been identified within the analysis area: native mixed grass prairie, sagebrush/mixed grasslands, agricultural lands, improved or restored pastures, and riparian-wetlands.

There are numerous ecological sites identified within the analysis area, but the primary ones include the following; Claypan (Cy), Sandy (Sy), Sandy-Steep (SyStp), Shallow (Sw), Shallow Clay (SwC), Silty (Si), and Silty- Steep (SiStp). The total dry-weight production expected to be found on these sites during a normal growing season ranges from approximately 800 to 1,500 lbs. /acre.

The native mixed grassland community is dominated by perennial grasses. Perennial grasses can be both warm season and cool season grasses. These perennial grasses can also be both tall and short grasses. Some of the more common grasses include western wheatgrass (*Pascopyrum smithii)*, needle-and-thread (*Hesperostipa comata)*, green needlegrass(*Nassella viridula)*, blue grama (*Bouteloua gracilis)*, and prairie junegrass (*Koeleria macrantha)*. Various forbs and shrubs are present but, occur as a minor species composition component throughout the community.

The sagebrush/ mixed grassland community occurs on lower valley slopes near drainages, especially where soils are deeper. This community can include a combination of silver sagebrush (*Artemisia cana*) and Wyoming big sagebrush (*Artemisia tridentata ssp*. *wyomingensis*). This setting is common throughout the analysis area with silver sagebrush being more dominant. The sagebrush/grassland vegetation community has a perennial grass and forb understory, similar to the species found in a mixed native grassland community. The expected species composition on this community consists of 70-75% native grass species, 10-15% forbs, and 5-10% shrubs and half-shrubs. This community type comprises a very small portion of the project area.

Improved or restored pastures consists of cultivated areas planted with introduced grasses (crested wheatgrass, smooth brome (*Bromus inermis*), intermediate wheatgrass

(*Thinopyrum intermedium*), and alfalfa (*Medicago sativa), specifically for the improved vegetation production for livestock consumption.* This setting is limited in the analysis area.

The cultivated plant community is comprised of monocultures of crops which may include small grains, alfalfa, or other crops grown primarily as supplemental feed sources for livestock production operations. These areas have been completely disturbed from the native vegetation potentials. This setting is common in the analysis area.

3.5.2 Vegetative Communities: Wetland/Riparian

Riparian and wetland areas are the green zones bordering lakes, rivers, reservoirs, estuaries, potholes, springs and seeps, and perennial, intermittent, or ephemeral streams where the water table is usually at or near the surface. The riparian zone is the interface or linkage between the upland (terrestrial) zone and the aquatic zone and is generally more productive in terms of total biomass than the remainder of the area. Characteristically, riparian and wetland areas display a greater diversity of plants, fish, and wildlife than adjoining ecosystems. Healthy riparian systems filter and purify water as it moves through the riparian-wetland zone, reduce sediment loads and enhance soil stability, profile micro-climate moderation when contrasted to temperature extremes in adjacent areas, and contribute to ground water recharge and base flow.

There are a total of 2.81 acres of wetlands within the parcels nominated for lease sale (Appendix D lists the wetlands that are present in the lease parcels). The waterbodies that support wetland vegetation are either temporarily or semipermanently flooded and are primarily manmade impounds.

The BLM assesses the functioning condition of riparian zones along streams on BLM surface owned lands. As the analysis area does not include BLM surface, and the Middle Fork of Porcupine Creek does not flow across BLM land in Valley County, no records of the functioning condition of the riparian zones along the intermittent and/or ephemeral drainages within the parcels nominated for lease are currently available.

Some of the more common vegetative species that occur in wetlands and riparian zones include prairie cordgrass (*Spartina pectinata*), switchgrass (*Panicum virgatum*), Canada wildrye (*Elymus Canadensis*), western wheatgrass (*Pascopyrum smithii*), willow (*Salix spp.*), chokecherry (*Prunus virginiana*), buffaloberry (*Shepherdia*), water sedge (*Carex aquatilis*), plains cottonwood (*Populus deltoids occidentalis*), sedges (*Carex spp.*), rushes (*Juncus spp.*), smooth brome (*Bromus inermis*), wild rose (*Rosa spp.*), sago pondweed (*Stuckenia pectinata*), sloughgrass (*Beckmannia*), curlycup gumweed (*Grindelia squarrosa*), Kentucky bluegrass (*Poa pratensis*), and snowberry (*Symphoricarpos spp.*).

3.5.3 Vegetative Communities: Invasive, Non-Native Species, Noxious Weeds

All of the parcels are split estate with private surface over federal minerals. Noxious weeds currently found in Valley County include leafy spurge, Russian knapweed, field bindweed, Canada thistle, cheatgrass and field brome. Noxious weed control on private land is the responsibility of the landowner or in the case of CRP (Conservation Reserve Program), the Natural Resources Conservation Service. The BLM works collaboratively with the Valley

County Weed District to control and prevent the spread of noxious and invasive species on public and private lands. Noxious weeds that are introduced as a result of oil and gas development on split estate require coordination between the landowner and the oil and gas leas operator to control the infestation.

3.6 Special Status Species

Special Status Species can be Federally listed threatened, endangered, candidate or proposed fish, wildlife or plant species; BLM listed Sensitive Species; or those Special Status Species maintained on lists by the USFWS; Montana Department of Fish, Wildlife and Parks; Montana Natural Heritage Program; or other non-governmental organizations.

Although listed threatened or endangered species are unlikely to occur on the lease parcels at present, the TES 16-2 stipulation for threatened or endangered species would be attached to the leases in the event that listed species are observed, or in case any future listed species are likely to occur on the lease parcels. Some of the Standard Stipulations and Notice (16-3) also could apply to Special Status Species. For instance, Sprague's pipit would be attached to protect its habitat if the habitat should improve prior to any future development, or if the Sprague's pipit should be listed by that time.

3.6.1 Special Status Animal Species

3.6.1.1 Aquatic Wildlife

BLM Special Status fish species do not occur in or near any of the proposed lease parcels.

3.6.1.2 Terrestrial Wildlife

BLM Listed Sensitive Species that are found within Valley County, which encompasses the Glasgow Field Office and may occur on or near the proposed parcels. Some of those species include a wide variety of neotropical migratory birds such as raptors, songbirds, grassland obligate birds, and waterfowl.

3.6.1.2.1 Threatened, Endangered, Candidate, and Proposed Species

According to the U.S. Fish and Wildlife Service there are 5 listed species and 2 candidate species. Those species are Pallid Sturgeon, Piping Plover, Black-footed ferret, Interior Least Tern, and Whooping Crane. The nominated parcels do not contain habitat to support the 5 listed species.

The BLM Sensitive Species Greater Sage-Grouse was petitioned for listing under the Endangered Species Act with a March 2010 finding that listing for the species was warranted but precluded. This moved the Greater Sage-Grouse into "candidate" status with an annual status review. The nominated parcels are outside of Greater Sage-Grouse habitat.

Listing of the Sprague's pipit as a T&E Species was determined on 14 September 2010 to be warranted, but precluded due to the need to work on higher priority species. The Sprague's pipit thus became a candidate species with an annual status review to determine eligibility for listing. The Sprague's pipit generally avoids cultivated land, although introduced grass cover can be used for nesting if native grass cover is not present in the near vicinity.

3.6.2 Special Status Plant Species

According to the MTNHP, there is no known threatened or endangered plant species located within the lease parcels in the Glasgow Field Office. Five plant species on the Montana Plant Species of Concern list have been identified as having suitable habitat in areas near these parcels (MTNHP, 2013). These species are listed in Table 4 and have the potential to exist on the lease parcels. Three of these species are also identified as BLM "Sensitive" plants.

According to the MTNHP field guide, these plants are typically found in very specific habitats and do not occur predictably across the landscape. Not much is known of the status of these species in the analysis area, although the general condition and trend of these habitats could be used to estimate the specific conditions until the sites can be revisited and site-specific data collected.

Table 4. MT Species of Concern and BLM Sensitive Plants with potential on or near lease parcels

Plant Name	Counties it occurs in	Habitat description
Scarlet Ammannia	Phillips, **Valley,** Yellowstone	Wetland/Riparian
Chaffweed	Lake, Missoula, Phillips, Powell, Ravalli, Sheridan, **Valley**	Wetland/Riparian
Hot Spring Phacelia*	Fergus, Garfield, Phillips, **Valley**	Barren clay slopes
Bractless blazingstar*	Custer, Powder River, Roosevelt, Rosebud, **Valley**	Open areas (sandy or gravelly soils)
Platte Cinquefoil*	Beaverhead, Judith Basin, **Valley**	Grasslands/sagebrush (Mesic)

*Denotes BLM sensitive species

3.7 Fish and Wildlife

3.7.1 Aquatic Wildlife

There are no fish species that occur within the proposed parcels.

3.7.2 General Wildlife

The proposed parcels are split estate ownership and is mainly cultivated land. White-tailed deer have been observed in the area as well as a wide variety of neotropical birds such as raptors, grassland obligate songbirds, waterfowl and upland game birds such as sharp-tailed grouse (*Tympanuchus phasianellus*), mourning dove (*Zenaida macroura*), and the introduced rig-necked pheasant (*Phasianus colchicus*). Mesocarnivores and a variety of shrews, rodents and other small mammals are also present on the parcels.

Although there are no flowing streams within the nominated parcels but during spring runoff, the drainages may contain water that would provide habitat for a variety of amphibians and reptiles

such as tiger salamander (*Ambystoma tigrinum*), eastern racer (*Coluber constrictor*), plains garter snake (*Thamnophis radix*), gophersnake (bullsnake) (*Pituophis catenifer*), and western rattlesnake (*Crotalus viridis*).

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, as well as both national and state level programmatic agreements between BLM and the State Historic Preservation Office (SHPO)

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.

Of the four parcels identified no level of existing Class III Cultural Resource inventory has occurred to date within the proposed lease parcel boundaries with one exception T34N, R40E, Sec. 4 has had one Class III inventory (85-MT-060-1) performed for the purpose of a proposed land exchange. No Historic Properties have been recorded to date in any of the aforementioned parcels.

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.

The area that makes up the proposed lease parcels was at one time the aboriginal lands of multiple tribes. These tribes include Piegan, Blood, Blackfeet, Gros Ventre, Assinboine, Sioux, Flathead (Salish), and Cree Tribes.

Previous consultation with tribes indicates that they use certain areas for religious and cultural purposes. Certain types of archaeological sites have cultural and religious significance. These include vision quest sites, monumental/ anthropomorphic/zoomorphic rock features, rock art sites, burials, habitation sites with special purpose ceremonial structures, and ceremonial and/or dance grounds. No defined Traditional Cultural Properties have been identified within the proposed lease parcels

3.10 Paleontology

According to Section 6301 of the Paleontological Resource Protection Act of 2009 Omnibus Public Lands Bill, Subtitle D, SEC. 6301, paleontological resources are defined as "any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth" (Paleontological Resource Protection Act of 2009 Omnibus Lands Bill, Subtitle D, SEC. 6301-3612 (P.L. 59-209; 34 Stat. 225; 16 U.S.C. 431-433). All vertebrate fossils, be they fossilized remains, traces, or imprints of vertebrate organisms, are considered significant. Paleontological resources do not include archaeological and cultural (typically human graves) resources.

The BLM utilizes the Potential Fossil Yield Classification (PFYC) as a planning tool for identifying areas with high potential to yield significant fossils. The system consists of numbers ranging from 1-5 (low to high) assigned to geological units, with 1 being low potential and 5 being high potential to have significant fossil resources. It should be pointed out that the potential to yield significant fossil resources is never 0. Rock units not typically fossiliferous can in fact contain fossils in unique circumstances.

BLM classified geologic formations that have a high Potential Fossil Yield Classification (PFYC) of 3 or higher should be specifically reviewed for paleontological resources prior to surface disturbing activities, and rankings of 4 and 5 may require on-site monitoring during surface disturbing activities. The Glasgow Field Office has the following classifications on the relevant geologic units:

Formation	Rank
Sand & Gravel (Qsg)	3
Sand & Gravel (Tsg)	3
Fort Union (Tfu)	4
Hell Creek (Khc)	5
Bearpaw (Kb)	3
Fox Hills (Kfh)	5

All or part of 4 lease parcels (MTM 102757-6J, 6L, 6N, and 6P) include geologic units rated as PFYC 3-5.

3.11 Visual Resources

Visual Resource Management (VRM is BLM's systematic approach to inventorying and managing visual resource values, as mandated by Federal legislation (FLPMA, 1976 and NEPA, 1969). It includes the evaluation of public lands for assignment of inventory classes during Resource Management Plan (RMP development, as well as the determination of management of Visual Resource Management (VRM) classes and the routine operational management of those

classes. The VRM enables the BLM to have a system for managing the human concern for scenery and public acceptance for visible changes to the natural landscape setting. Through this system the BLM is able to objectively measure proposed landscape altering projects for compliance to visual performance standards and apply the use of good design principles to satisfy management objectives.

BLM manages landscapes according the Visual Resource Management Manual (H-8431-1) VRM Classes and establish specific objectives on the management of visual resource values. The VRM objectives set the standards for the planning, design, and evaluation of proposed projects. The VRM classes consider the compatibility between land use decisions and visual values. Management Objectives range from preserving the natural landscape (VRM Class I) to providing for activities which require major modification of the existing landscapers (VRM class IV).

A Class I VRM area means that the objective is to preserve the existing landscape. This class provides for natural ecological changes; however it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract any attention of a casual observer.

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.

The proposed project is within a VRM Class IV area. The project conforms with the objectives of this classification, however, every attempt should be made to minimize the impacts of the activities through careful location, minimal disturbance and repeating the basic elements of form, line, color, and texture in the natural characteristic landscape.

Table 5. VRM Classes for the analysis area

Leasing Areas	VRM Class II Acres	VRM Class III Acres	VRM Class IV Acres
Valley County	***0 acres***	***0 acres***	***880.15 total acres***

MTM102757-6L	0	0	320
MTM102757-6N	0	0	160
MTM102757-6P	0	0	320
MTM102757-6J	**0**	0	80.15

Assessing scenic values and determining visual impacts can be a somewhat subjective process. Objectivity and consistency can be greatly increased by using the basic design elements of form, line, color, and texture, which have often been used to describe and evaluate landscapes, to also describe proposed projects. Projects that repeat these design elements are usually in harmony with their surrounding; those that don't create contrast. By adjusting project designs so the elements are e repeated, visual impacts can be minimized.

3.12 Forest and Woodland Resources

This resource is not present on any of the parcels and will not be discussed further.

3.13 Livestock Grazing

None of the lease parcels proposed to be leased for oil and gas in the Project Area conflict with current permits and contracts for grazing allotments awarded on federal lands. Therefore, this subject will not be discussed further in this document.

3.14 Recreation and Travel Management

3.14.1 Recreation

The BLM has an important niche in recreation in Montana, providing opportunities for Off-highway vehicle use, camping, hiking, driving for pleasure, picnicking, hunting, whitewater rafting, wildlife viewing, and a wide variety of other pursuits. This role in outdoor recreation is under stress from changing populations, new technologies, and access issues. Population increases are placing additional demands on recreational use of BLM lands. Traditional as well as new forms of recreational activities such as photography, hunting and OHV use, are increasing in popularity. There is also a growing concern for preserving the character and resources upon which this recreation depends.

The BLM Recreational Strategy is to improve access to appropriate recreational opportunities and experiences; ensure a quality experience and enjoyment of natural and cultural resources, and; provides for and receives fair value in recreation.

The BLM has shifted from an activity -based to an outcome -focused management (OFM) recreation resources. This means that emphasis is put on providing a certain type of recreational experience which, in turn, produces a variety of personal, community, economical, and environmental benefits rather than focusing on specific activities and the facilities associated with those activities. For the HiLine District these recreation settings are generally more primitive and rugged, requiring more individual responsibility, and have an overall lower density and demand than lands managed by other agencies. This is the case for all the lands covered in this lease proposal.

The proposed project is within the Valley ERMA. There are no developed recreation sites in the proposed project area and recreation is mostly low and dispersed. The BLM parcels in the area are relatively small and surrounded by private lands. There are no commercial, competitive, or organized operators currently conducting recreational activities on any of these parcels. The action of leasing these parcels would not by itself change any recreational opportunity or experience.

3.15 Lands and Realty

All parcels are split estate; the surface estate is fee title and the mineral estate is federal. However, for one parcel, the federal government only has title to 50% of the mineral estate. The other half is non-federal. Because the surface is private, there are no BLM authorized rights-of-way or development and thus, Lease Notice 14-1 is not applicable. Therefore any discussion related to Lands and Realty will not be discussed further.

3.16 Minerals

3.16.1 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 99 federal oil and gas leases covering approximately 57,590 acres in lands administered by the GFO. The number of acres leased and the number of leases can vary on daily basis as leases are relinquished, expired, or are terminated. Information on numbers and status of wells on these leases and well status and numbers of private and state wells within the external boundary of the field office is displayed in Table 6. Numbers of townships, leases acres within those townships, and development activity for all jurisdictions are summarized in Table 7.

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 6. Existing Development Activity on Lands Administered by the GFO

	FEDERAL WELLS	PRIVATE AND STATE WELLS
Drilling Well(s)	2	0
Producing Gas Well(s)	60	84
Producing Oil Well(s)	0	0
Water Injection Well(s)	0	0
Shut-in Well(s)	3	4
Temporarily Abandoned Well(s)	0	1

Table 7. Oil and Gas leasing and Existing Development within Townships Containing Lease Parcels

Valley County	
Number of Townships Containing Lease Parcels	2
Total Acres Within Applicable Township(s)	46080
Acres of Federal Oil and Gas Minerals	1840*
Percent of Township(s)	4%
Acres of Leased Federal Oil and Gas Minerals	0**
Percent of Township(s)	0%
Acres of Leased Federal Oil and Gas Minerals Suspended	0
Percent of Township(s)	0.2%
Federal Wells	No Drilling, producing, shut in, or TA wells.***
Private and State Wells	No Drilling, producing, shut in, or TA wells.***

*From Mater title Plat dated 11/12/2010 for 34N 40E and 1/25/2011 for 35N 40E
**From Oil & Gas Plat dated 11/12/2010 for 34N 40E and 1/25/2011 for 35N 40E
***Source: AFMSS, MBOG 04/09/2013

3.16.2. Solid Minerals

3.16.2.1. Coal

There is no current coal production in the lease parcel areas. Information was verified utilizing the economic coal deposits GIS layer. No proposed lease parcels are lying over any leased coal deposits.

3.16.2.2. Locatable Minerals

Locatable minerals are subject to provisions of the 1872 Mining Law. These generally include metallic minerals such as gold and silver and other materials not subject to lease or sale. There is currently no locatable mineral production or potential for production in the lease parcel areas.

3.16.2.3. Salable Minerals

Salable minerals (mineral materials) are those common varieties of sand, stone, gravel, cinders, pumice, pumicite, and clay that may be acquired under the Materials Act of 1947. Mineral materials are disposed of by free-use and community/common-use permits granted to municipalities or non-profit entities, respectively. Contracts for sale of mineral materials are offered to private entities on both a competitive and non-competitive basis. Disposal of salable minerals is a discretionary decision of the BLM authorized officer. Future potential resource development conflicts would be avoidable either by not issuing sales contracts in oil and gas development locations or conditioning the APD or salable mineral contracts in a manner to avoid conflicts between operations.

None of the lease parcels proposed to be leased for oil and gas in the Project Area conflict with current permits and contracts for salable minerals awarded on federal lands. Therefore, this subject will not be discussed further in this document.

3.17 Special Designations

3.17.1 National Historic/Scenic Trails

There are portions of two National Historic and Scenic Trails which pass through the lands managed by the HiLine District. They are the Lewis and Clark National Historic Trail and the Nez Perce National Historic Trail. Neither of these trails passes through any of the parcels covered in this proposal.

3.17.2 Areas of Critical Environmental Concern (ACECs)

The Federal Land Policy and management Act (FLPMA) requires that priority shall be given to the designation and protection of ACECs. Areas of Critical Environmental Concern are defined in the FLPMA Sec. 103[43 W.S.C 1702] (a) and in 43 C.F.R. 1601-05(a) as "areas within the public lands where special management attention is required to protect and prevent irreparable damage to important historical, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards."

There are seven ACECs in the HiLine District but none of these designated lands are located within or adjacent to the proposed lease parcels.

3.18 Social and Economic Conditions

3.18.1 Social and Environmental Justice

Introduction

Certain existing demographic and economic features influence and define the nature of local economic and social activity. Long-held customs, social cohesion, and history of an area provide valuable insight into how events or changes to the area may affect the livelihood and quality of life of the residents. While linkages exist across various social environments, the affected social environment consists of Valley County, Montana.

Affected Environment

Valley County has a rich agricultural history which continues today. Glasgow, the county seat, was a railroad town that brought many of the ranchers and farmers into the area (GlasgowMontana.com, 2013). Other communities in the County include Fort Peck, Frazer, Glentana, Hinsdale, Nashua, Opheim, Richland, St. Marie, and Vandalia. The estimated total population of Valley County in 2011 was 7,487 (US Census Bureau, 2013a). Agriculture is still important to the County. Valley County has 770 farms and 2,061,260 acres in farms (NASS, 2007). In 2011, the County ranked number one for spring wheat production, number four for durum wheat production, and number 5 for alfalfa production. It ranked number sixteen in 2012 for cattle (NASS, 2012).

Environmental Justice

Executive Order 12898, Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations, requires the identification and addressing of

disproportionately high and adverse human health and environmental impacts of federal programs, policies, and activities on minority and low-income populations. We used the following criteria to determine if there was an environmental justice population:

- At least one-half of the population is of minority or low-income status, and
- The percentage of the population that is of minority or low-income status is at least 10 percent higher than for the entire State of Montana.
-

The population's race and ethnicity for the study area and the State of Montana, respectively, in 2011 was: White alone (87.0%, 89.9%); Black or African American alone (0.4%, 0.5%); American Indian and Alaska Native alone (10.0%, 6.4%); Asian alone (0.5%, 0.7%); Native Hawaiian and other Pacific Islander alone (0.0%, 0.1%); two or more races (2.1%, 2.4%); and, Hispanic (1.6%, 3.1%) (US Census Bureau, 2013a, US Census Bureau, 2013b). Note that these percentages will not add up to 100% because Hispanic can be of any race. The poverty level for all ages in Valley County in 2011 was 15.3%, and for the State of Montana it was 15.2%. (US Census Bureau, 2013c). Neither the minority nor low-income status in the study area meets the above criteria.

3.18.2 Economics

Introduction

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 Valley Counties within the BLM Glasgow Field Office boundaries as well as Phillips, Blaine, and Hill Counties. Blaine and Hill Counties are included because of the oil and gas related businesses that work in oil and gas fields in Phillips and Valley counties. While public revenues from oil and gas leasing, rent, and production addressed in this EA are only distributed to Valley counties, employment and income effects are spread across the four counties. The distribution of these economic effects is based on acres leased and levels of production as well as business patterns.

Affected Environment

The four-county local economy had an estimated 2010 population of 33,970 people. Total employment was estimated to be 21,350 jobs; there were an estimated 13,098 households; and there were 154 IMPLAN industrial sectors represented in the local economy (IMPLAN, 2010). The local economy includes Glasgow, Havre and Malta (local population, business, and oil field service centers). There were 1.59 people per job within the local economy and 0.61 households per job.

Nature of the Oil and Gas Industry in the Malta Field Office

In March 2013, BLM had leases in effect covering 53,285 acres in Valley County. Annual lease rent is paid on 27,233 acres that are not held by production on leases with oil/gas being produced from one or more wells. Lease rent was not paid on 26,025 acres that were held by production. Instead, royalties are paid on oil and gas production from these leases.

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 change daily as some leases expire and other parcels are leased. Within the Glasgow Field Office, public domain federal minerals account for about 66 percent of the acres leased; acquired lands/minerals, mostly Bankhead-Jones lands, account for about 34 percent of acres 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 from the federal government 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 Valley County, bonus bids averaged $2.00 per acre on federal leases issued between 2008 and 2012. 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 $58,000 in lease bids and rent from leases in Valley County; of which about $26,000 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). Twenty-five percent of the federal royalty revenues from acquired minerals are also distributed from the federal government to the counties of production.

An annual average of 739,976 MCF of natural gas is produced from BLM-administered federal minerals in the Valley County.

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 (IMPLAN sector 20), drilling oil and gas wells (IMPLAN sector 28), and support activities for oil and gas operations (IMPLAN sector 29) supported an estimated 317

total jobs and $15.8 million in total employee compensation and proprietor income in the local economy (IMPLAN, 2010).

Total average annual federal revenues from federal oil and gas leasing, rents, and royalty payments within Valley County are an estimated $395,000. Federal revenues distributed to the state of Montana amount to an estimated $163,000 per year. The state redistributes an estimated $66,000 per year to Valley County. 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 combines to support about one local job and about $30,000 in local labor income, respectively. These contributions equal less than one percent of the local employment and local income. Table Econ. 1 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 8. Current Contributions of Federal Oil and Gas Leasing, Exploration, Development, and Production to the Local Economy

Industry	Employment (jobs)		Labor Income (Thousands of 2010 dollars)	
	Area Totals	Federal O&G - Related	Area Totals	Federal O&G-Related
Agriculture	3,724	0	$26,821	$0
Mining	353	0	$19,979	$7
Utilities	110	0	$11,455	$1
Construction	1,100	0	$37,114	$0
Manufacturing	205	0	$7,838	$0
Wholesale Trade	527	0	$23,064	$0
Transportation & Warehousing	864	0	$61,267	$0
Retail Trade	2,209	0	$54,543	$1
Information	374	0	$19,392	$1
Finance & Insurance	931	0	$33,045	$1

Real Estate & Rental & Leasing	611	0	$6,699	$0
Prof, Scientific, & Tech Services	666	0	$24,643	$1
Mngt of Companies	13	0	$1,106	$0
Admin, Waste Mngt & Rem Serv	430	0	$6,557	$0
Educational Services	204	0	$4,121	$0
Health Care & Social Assistance	1,908	0	$74,499	$1
Arts, Entertainment, and Rec	336	0	$3,730	$0
Accommodation & Food Services	1,275	0	$17,029	$0
Other Services	1,156	0	$36,213	$1
Government	4,353	0	$220,018	$13
Total	21,350	1	$689,132	27
Federal O&G as Percent of Total	---	0		0

IMPLAN, 2010 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 Application for Permit to Drill (APD) in which detailed information about proposed wells and facilities would be provided for particular leases. Therefore, this EA discusses potential 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 more 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 COAs, based on site-specific analysis that could include moving the well location, restrict timing of the project, 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.

For split-state leases, the BLM would notify the private landowners that oil and gas exploration or development activities are proposed on their lands and they are encouraged to attend the onsite inspection to discuss the proposed activities. In the event of activity on such split estate leases, 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.

This chapter presents the potential environmental, social, and economic effects from the actions described in each alternative in Chapter 2, as well as potential effects from lease exploration and development activities. Environmental consequences are discussed below by alternative to the extent possible at this time for the resources described in Chapter 3. As per NEPA regulations at 40 CFR 1502.14(f), 40 CFR 1502.16(h), and 40 CFR 1508.20, mitigation measures to reduce, avoid, or minimize potential impacts are identified by resource below. The duration of the possible effects is analyzed and described as either short-term or long-term. Short-term effects generally last less than five years and long-term effects generally last more than five years.

4.1.1 Reasonably Foreseeable Development Scenario Summary

The following assumptions are from the RFD developed for the HiLine Planning Area (for the HiLine RMP revision; the HiLine planning area includes the Malta, Glasgow, and Havre Field Offices). The BLM administers approximately 3,483,000 acres of federal minerals of federal fluid minerals available for leasing within the HiLine Planning Area. The RFD forecasts the following level of development in the HiLine Planning Area.

The RFD scenario for the HiLine RMP forecasts up to 6,866 wells in the planning area between 2007 and 2026. Up to 150 of these wells could be coalbed natural gas (CBNG) wells. Of the 6,716 conventional wells, 1,351 wells are located within the boundaries of the Bowdoin Dome area. In the HiLine planning area, high development potential indicates two to 20 wells per township. Very low development potential indicates two wells or less per township. All of the offered parcels are located in 'very low development potential' areas.

These well numbers are only an estimate based on historical drilling and mineral resources present, and may change in the future if new technology is developed or new fields and formations are discovered.

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 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

By itself, the act of leasing the parcels would have no impact on any natural resources in the area administered by the Glasgow Field Office. Standard terms and conditions as well as special stipulations would apply to the lease parcels. All impacts would link to as yet undetermined future levels of lease development.

If the lease parcels are developed, short-term impacts would be stabilized or mitigated rapidly (within two to five years). Long-term impacts are those that would substantially remain for more than five years.

4.1.4 Alternative A (No Action Alternative)

4.1.5 Direct Effects Common to All Resources (not including Economics)

Under Alternative A, the 4 parcels 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 federal lease 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 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 Economics

Alternative A

Economic effects are summarized and displayed in comparative form in Table 8 (Current Contributions of Federal Oil and Gas leasing, Exploration, Development, and Production to the Local Economy), Table 9 (Summary Comparison of Cumulative Economic Impacts) and Table 10 (Employment and Income Related to BLM Oil and Gas Management). 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.

Cumulative Effects

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 9 and Table 10. The cumulative demographic and economic characteristics of the local economy would not change if the parcels being considered are not leased.

Table 9. Summary Comparison of Cumulative Annual Economic Impacts by Alternative

Activity	Alternative	
	A	B
Existing Acres leased*	53,285	53,285
Acres that would be leased based on this EA	0	880
Total acres leased	53,285	54,165
Acres held by production*	26,025	26,025
Total acres leased for which lease rents would be paid	27,260	28,140
Total average annual federal lease and rental revenue	$58,362	$60,078
Average annual distribution to State/local government	$25,656	$26,410
Average annual oil production (bbl)**	0	0
Average annual gas production (MCF)**	336,689	342,249
Total Average annual federal O&G royalties	$336,689	$342,249
Average annual distribution to State/local government	$137,504	$139,775
Total average annual federal Revenues	$395,051	$402,327
Total average annual State/Local Revenues	$163,160	$166,185
Total average annual revenue distributed to counties	$65,519	$66,726
*LR2000, BLM, March 11, 2013 **Based on average annual production 2009-2010, Office of Natural Resource Revenue, 2011		

Table 10. 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	1	1	$27	$27
Percent Change from Current	--	1.9%	--	1.9%

IMPLAN, 2010 database

Alternative B

Public Revenues

Leasing an additional 880 acres of federal minerals (Alternative B) would increase estimated average annual oil and gas leasing and rent revenues to the federal government by less than $2,000. Average annual leasing and rent revenues that would be distributed to state/local governments would increase by less than $1,000. Estimated average annual federal oil and gas

royalties would increase by about $6,000 with Alternative B compared to current levels. Estimated average annual royalties distributed to the state/county would increase by about $2,000 compared to current levels.

Total average annual federal revenues related to leasing an additional 880 acres of federal minerals and associated annual rent and royalty revenues related to average annual production of federal minerals would amount to about $7,000. Estimated total average annual revenues from leasing, rent, and royalties distributed to the state and county would increase by about $3,000. Total estimated annual revenues distributed to Valley County would be about $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 continue to amount to about one job and $27,000 in labor income within the local economy (IMPLAN 2010). There would also be no change in local population or households.

Conclusion

Total federal contribution of Alternative B (leasing an additional 880 acres of federal minerals) and anticipated related exploration, development, and production of oil and gas would have little affect local income, total local employment, local population, and number of households. Leasing the additional 880 acres and anticipated exploration, development, and production under alternative C would provide a small amount of additional funds for Valley County government 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. At the same time, demand for these services would likely increase very little since the population and number of households would not change. Leasing the additional 880 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) within the local economy.

Disclosure of the direct, indirect, and cumulative effects of GHG emissions provides information on the potential economic effects of climate change including effects that could be termed the "social cost of carbon" (SCC). The EPA and other federal agencies developed a method for estimating the SCC and a range of estimated values (EPA 2013b). The SCC estimates damages associated with climate change impacts to net agricultural productivity, human health, property damage, and ecosystems. Using a 3 percent average discount rate and year 2020 values, the incremental SCC is estimated to be $46 per metric ton of annual CO_2e increase. Based on the GHG emission estimate provided in Section 4.3.3.1.2, the annual SCC associated with potential development on lease sale parcels is $1,242 (in 2011 dollars). Estimated SCC is not directly comparable to economic contributions reported above, which recognize certain economic contributions to the local area and governmental agencies but do not include all contributions to private entities at the regional and national scale. Direct comparison of SCC to the economic contributions reported above is also not appropriate because costs associated with climate change are borne by many different entities.

Cumulative Effects

The cumulative effects of federal mineral leasing within the local economy as well as the specific effects of leasing an additional 880 acres under Alternative C are summarized in Tables Econ3 (Summary Comparison of Cumulative Annual Economic Impacts by Alternative) and Econ 4 (Employment and Income Related to BLM Oil and Gas Management).

4.3 Air Resources

4.3.1 Direct and Indirect Effects

4.3.1.1 Air Quality

Leasing the parcels would have no direct impacts on air quality. Any potential effects on air quality from sale of lease parcels would 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 the criteria pollutant concentrations are well below applicable air quality standards indicating very 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.

4.3.1.2 Greenhouse Gas Emissions at the Analysis Area and Project Scales

Sources of GHGs associated with development of lease parcels may 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 in a separate NEPA analysis effort 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 emissions 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 above for the HiLine RFD

(which includes the GFO), Table 11 discloses projected annual GHG source emissions from BLM-permitted activities associated with the RFD.

Table 11. BLM projected annual emissions of greenhouse gases associated with oil and gas exploration and development activity in the HiLine.

Source	BLM Long-Term Greenhouse Gas Emissions in tons/year			Emissions (metric tons/yr)
	CO_2	CH_4	N_2O	CO_2e
Conventional Natural Gas	120,756	1041	0.87	129,664
Coal Bed Natural Gas	884	48	0.00	1,725
Oil	2,380	16	0.01	2,467
Total	**124,020**	**1,105**	**0.88**	**133,856**

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

1. The proportion of each project level action 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 880.15 acres of lease parcels with federal minerals would be leased. These acres constitute approximately 0.020 percent of the total federal mineral estate of approximately 4,307,538 acres identified in the HiLine RFD. Therefore, based on the approach described above to estimate GHG emissions, 0.020 percent of the RFD for this EA would be approximately 27 metric tons/year of CO_2e if the parcels within Alternative B were to be developed (based on 133,856 metric tons/year for full RFD).

4.3.1.3 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 would occur during exploration, development, and production.

4.3.2 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 may 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:

- flare or incinerate hydrocarbon gases at high temperatures to reduce emissions of incomplete combustion;
- install emission control equipment of a minimum 95 percent efficiency on all condensate storage batteries;
- install 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 volatile organic compounds (VOCs));
- gas or electric turbines rather than internal combustions engines for compressors;
- nitrogen oxides (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-locate 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;
- install 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 (O_3).

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 14 (reproduced from Table 6-2 in Climate Change SIR), display common methane emission technologies reported under the USEPA Natural Gas STAR Program and associated emission reduction, cost, maintenance and payback data.

Table 12. 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
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

Table 12. 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)
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 USEPA 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 emissions reductions that might be feasible in individual field offices, the BLM estimated GHG emissions reductions based on the RFD for the Miles City Field Office (MCFO). For analysis purposes, the Miles City FO RFD was selected based on the high potential development scenario. Similar emissions reductions may be possible in the HiLine analysis area. For emissions sources subject to BLM (federal) jurisdiction, the estimated emissions reduction represent approximately 51 percent reduction in total GHG emissions compared to the estimated MCFO federal GHG emissions inventory (Climate Change SIR, as updated October 2010, Section 6.5 and Table 6-3). The emissions reduction

technologies and practices are identified as mitigation measures that could be imposed during development.

4.4 Soil Resources

4.4.1 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 13 shows the approximate acres of soils on slopes over 30 percent and erodible soils on slopes over 20 percent for each lease parcel.

Table 13. 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, 2013)).

Parcel #	>30% slope Acres[1]	Erodible soils on slopes >20% Acres[2]
MTM102757-6J	6	0
MTM102757-6L	3	0
MTM102757-6N	33	14
MTM102757-6P	6	0

1. Approximate acres calculated from a Digital Elevation Model (DEM) where slope is >30%. Approximate acres based on GIS calculations. 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.
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.

4.4.2 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;
• Requiring special reclamation of the prime farmlands, if irrigated, to ensure there is no unnecessary and irreversible conversion of prime farmland to nonagricultural uses;
• 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 desired vegetation;
• Completing interim reclamation on all disturbed areas associated with producing well locations and associated facilities; and,
• 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).

4.5 Water Resources

4.5.1 Direct and Indirect Effects

Leasing the parcels would not directly affect water resources. Any potential effects on water resources from the sale of lease parcels would occur at the time the leases are developed. The magnitude of the effects on 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 vegetation reestablishment. As acres of surface-disturbance increase within a watershed, so could the effects on water resources.

In uplands within the watershed and in floodplains of non-riparian and ephemeral waterbodies, oil and gas exploration and development of a lease parcel could cause the removal of vegetation, soil compaction, and soil disturbance. 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 groundwater resources in the long term. Oil and gas exploration and development of a lease parcel 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. Produced water from conventional oil and gas wells is typically from a depth below useable aquifers or coal seams.

Ground Water: The eventual drilling of the proposed parcels would most likely pass through useable groundwater. Potential impacts to groundwater resources could occur if proper cementing and casing programs are not followed. This could include loss of well integrity, surface spills, or loss of fluids in the drilling and completion process. It is possible for chemical additives used in drilling activities to be introduced into the water producing formations without proper casing and cementing of the well bore. Changes in porosity or other properties of the rock being drilled through can result in the loss of drilling fluids. When this occurs, drilling fluids can be introduced into groundwater without proper cementing and casing. Site specific conditions and drilling practices determine the probability of this occurrence and determine the groundwater resources that could be impacted. In addition to changing the producing formations' physical properties by increasing the flow of water, gas, and/or oil around the well bore; hydraulic fracturing can also introduce chemical additives into the producing formations. Types of chemical additives used in drilling activities may include acids, hydrocarbons, thickening agents, lubricants, and other additives that are operator and location specific. These additives are not always used in these drilling activities and some are likely to be benign such as bentonite clay and sand. Concentrations of these additives also vary considerably since different mixtures can be used for different purposes in oil and gas development and even in the same well bore. If contamination of aquifers from any source occurs, changes in groundwater quality could impact springs and residential wells that are sourced from the affected aquifers. Onshore Order #2 requires that the proposed casing and cementing programs shall be conducted as approved to protect and/or isolate all usable water zones.

Known water bearing zones in the lease area are protected by drilling requirements and, with proper practices, contamination of ground water resources is highly unlikely. Casing along with cement is extended well beyond fresh-water zones to insure that drilling fluids remain within the well bore and do not enter groundwater.

Potential impacts to ground water at site specific locations are analyzed through the NEPA review process at the development stage when the APD is submitted. This process includes

geologic and engineering reviews to ensure that cementing and casing programs are adequate to protect all downhole resources.

All water used would have to comply with Montana state water rights regulations and a source of water would need to be secured by industry that would not harm senior water rights holders.

4.5.2 Mitigation

Stipulations addressing steep slopes, waterbodies, streams, riparian areas, and wetlands would minimize potential impacts and would be included with the lease when necessary. 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 and infrastructure maintenance; use of low water crossings; and use of horizontal directional drilling 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 assist with mitigation of groundwater impacts. Site-specific mitigation and reclamation measures would be described in the Conditions of Approval in the Application for Permit to Drill.

4.6 Vegetation Resources

4.6.1 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 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.

4.6.2 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.

4.7 Riparian-Wetland Habitats

4.7.1 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 success. 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.

4.7.2 Mitigation

Stipulations addressing steep slopes, waterbodies, and 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.

4.8 Wildlife

4.8.1 Direct and Indirect Effects

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

The use of standard lease terms and stipulations on these lands (refer to Appendix A) would minimize, but not preclude impacts to wildlife. 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. 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, including Threatened, Endangered, Candidate, Proposed, and other special status species.

4.8.1.1 Threatened, Endangered Proposed, and Candidate Species

Habitat within the lease parcels does not exist to support USFWS Threatened, Endangered, Proposed, or Candidate species including the whooping crane, interior least tern, piping plover, black-footed ferret, pallid sturgeon, Greater Sage-Grouse.

Sprague's pipit habitat is considered moderate within the nominated parcels. However, the parcels are split estate ownership and agriculture is the dominant land use within the nominated parcels. 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.

Therefore, if development of these leases is proposed, BLM would consult with the USFWS pursuant to section 7(a) (2) of ESA. An outcome of the consultation process may be that conditions of approval are attached to the permit or the permit may not be approved. Other BMP's would also be developed through consultation, including minimizing disturbance, adherence to Avian Powerline Interaction Committee (APLIC) guidelines, and others as deemed appropriate.

4.8.1.2 Other Special Status Species

As noted, up to 46 wildlife species that BLM has designated as "sensitive" have the potential to occur within the parcel areas. Stipulations are not provided for all BLM sensitive species in the current Resource Management Plans. 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.) 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.

Effects to migratory birds from oil and gas development at the APD stage could include direct loss of habitat from roads, well pads and other infrastructure, disturbance, 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. An 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.

4.8.1.3 Other Fish and Wildlife

The types and extent of impacts to wildlife species and habitats from development are similar to those described above for other species. Impacts include loss of habitat from development infrastructure, mortalities resulting from collisions with vehicles and power lines, electrocution on power lines, and displacement of wildlife species from initial disturbance caused by human presence. Indirect impacts would include habitat fragmentation and subsequent vehicle traffic, human presence, and other continual development activities.

Based on the RFD scenarios, a wide range of direct habitat loss is possible. Initial disturbance would change the occupation of those areas to disturbance-oriented species (i.e. horned larks), or species with more tolerance for disturbances. These changes would also be expected to decrease the diversity of wildlife. Although bladed corridors would be reclaimed after the facilities are constructed, some changes in vegetation would occur along the reclaimed areas. The goal of reclamation is to restore disturbed areas to pre-disturbed conditions. The outcome of reclamation, unlike site restoration, will therefore not always mimic pre-disturbance conditions and offer the same habitat values to wildlife species. Sagebrush obligates, including some species of songbirds and sage grouse, would be most affected by this change.

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

Although there are no fish bearing streams within the proposed parcels, there are several drainages that contain water during spring runoff. Potential impacts to aquatic wildlife 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) would indirectly affect fish, amphibian, and reptile species by degrading water quality and degrading or eliminating food resources.

Additional mitigation will occur as conditions of approval at the APD stage. These conditions might include the placement of earthen berms and oil skimmers (in ephemeral drainages where fish passage will not be blocked) which should help protect aquatic wildlife habitat in case of oil spills.

4.8.2 Mitigation

Measures would be taken 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, or pre-disturbance wildlife species surveying. If oil and gas development is proposed in suitable habitat for threatened or endangered species, consultation with the USFWS would occur to determine if additional terms and conditions would need to be applied.

4.9 Special Status Plant Species

4.9.1 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.

4.9.2 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 surface or minerals prior to approval of exploration and development activities at the APD stage.

4.10 Cultural Resources

4.10.1 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 decision is made 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, specifically in this case all identified parcels will require Class III Inventory as none has been performed in the past with one exception (85-MT-060-1). Lease Notice 14-5 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.

4.10.2 Mitigation

Under this alternative it is recommended that all lease parcels be leased with cultural resource Lease Notice 14-5 and 16-1. See Appendix A for specific legal location description and Appendix B for description of Lease Stipulations. In addition to specific Lease Stipulations to protect known resource values, additional site specific avoidance and/or mitigation measures, would have to be determined after project specific development proposals are received and Class III cultural resource inventories have been completed. In almost all situations, direct impacts to cultural resources will be avoided by project redesign and/or relocating the surface disturbing activities (e.g., roads, well pads and pipelines, etc.). Given the overall size of the lease parcel and the relatively small percentage or number of acres to be disturbed by anticipated development, avoidance of impacts to significant cultural resources being the primary concern, it is unlikely that it would be necessary to mitigate adverse impacts to archaeological sites through data recovery efforts. It should be noted that BLM has discretional control over mitigation stipulations measures imposed on a project. Although a lessee has a right to develop a lease, BLM may require development activities to be moved up to 200 meters in any direction. This should allow nearly all cultural properties to be avoided. Should development uncover subsurface sites, the lessee is required to halt all work until the site can be evaluated and proper mitigation measures can be implemented

The use of standard lease terms, the cultural no surface occupancy (NSO) stipulation, and the cultural lease notice, protect significant cultural resource values on these lease parcels (refer to Appendix A). The application of these requirements at the leasing phase provide protection to cultural values or at least notification to the lessee that potentially valuable cultural resource values are or are likely to be present on the lease parcels.

4.11 Native American Religious Concerns

4.11.1 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.

The BLM WO IM-2005-003 notes that while a lease does not authorize specific on-the-ground activities, and no ground disturbance can occur without further authorization from BLM and the surface management agency, but unless proscribed by stipulation, lessees can expect to drill somewhere on a lease unless precluded by law. 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.

4.11.2 Mitigation

Cultural Resources Lease Stipulation 16-1 will apply to all lease parcels (Appendix A). The application of Stipulation 16-1 to all lease parcels ensures that BLM's obligations under NHPA, American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E.O. 13007, and other statutes as applicable will be met. At the APD stage when specific oil and gas development actions are proposed, the area of potential effect (APE) will be defined and federally recognized tribes will be consulted if necessary. Additional Stipulations (NSO or CSU) may be necessary if TCPs or properties of religious and cultural importance are identified at the APD stage.

4.12 Paleontology

4.12.1 Direct and Indirect Effects

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

Indirect impacts from the sale of leases would be from the surface disturbances associated with oil and gas exploration and development activities. It is anticipated that most significant fossil resources are located in those geologic units with a Potential Fossil Yield Classification (PFYC) of 3 or higher. However, significant fossil resources could be discovered anywhere. 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. Identified paleontological resources could 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 could potentially lead to the discovery of paleontological localities that would otherwise remain undiscovered due to burial or omission during review inventories. The scientific retrieval and study of these newly discovered resources would expand our understanding of past life and environments of Montana.

4.12.2 Mitigation

The application of lease terms, the paleontological no surface occupancy stipulation (NSO 11-12), and the paleontological lease notice (LN 14-12) at leasing, provides protection to paleontological resources during development. The paleontological lease notice is applied to those lease parcels that fall within the PFYC 3 or higher geologic units, requiring a field survey prior to surface disturbance. These inventory requirements could result in the identification of paleontological resources. Avoidance of significant paleontological resources or implementation of mitigation prior to surface disturbance would protect paleontological resources. However, the application of 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 fossil resources must be mitigated prior to

implementation of a project. Also, significant fossil resources could be discovered in areas that had not been surveyed (PFYC of less than 3) during surface disturbance. Those resources must also be professionally mitigated. These mitigation measures and contingencies would be determined when site specific development proposals are received.

In order to protect paleontological resources, the 4 parcels are recommended to have the Paleontological lease notice 14-12 applied per guidance identified in IM 2009-011 and 2008-009. No parcels are recommended for the no surface occupancy lease stipulation (NSO 11-12) based upon paleontological resources. See section 3.10 Paleontology for list of parcels.

4.13 Visual Resources

4.13.1 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.

The lease parcels fall into VRM class IV. 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.

4.13.2 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 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.

Modifications should follow the existing form, line, color and texture of the current landscape. Measure would be taken to mitigate the visual impacts to protect the scenic value of the area.

4.14 Forest and Woodland Resources

Non present on any offered parcels.

4.15 Livestock Grazing

No grazing allotments on any offered parcels.

4.16 Recreation and Travel Management

4.16.1 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 benefit outcomes such as loss of importance sense of place, solitude and 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.

4.17 Lands and Realty

4.17.1 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 on the four parcels would not cause any additional rights of way activity until development of lease sale parcels. Additional rights-of-way could be required across federal surface for “off-lease” or third party facilities required for potential development of the parcel.

4.17.2 Mitigation

Any new "off-lease" or third party rights-of-way required across federal surface for future exploration and/or development of the four 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.

4.18 Minerals

4.18.1 Fluid Minerals

4.18.1.1 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 four 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, the four lease parcels would be offered for lease subject to standard lease terms and conditions.

Fracking on BLM Montana Well Sites

Fracturing (known as "fracking" in the oil and gas industry) is a process that uses high pressure pumps to develop pressure at the bottom of a well to crack the hydrocarbon formation. This aids extraction of oil and gas deposits that might be left behind by conventional oil and gas drilling and pumping technology.

Hydraulic fracturing is a 60-year-old process that is now being used more commonly as a result of advanced technology.

Wells are often treated during completion to improve the recovery of hydrocarbons by increasing the rate and volume of hydrocarbons moving from the natural oil and gas reservoir into the wellbore. These processes are known as well-stimulation treatments, which create new fluid passageways in the producing formation or remove blockages within existing passageways. They include fracturing, acidizing, and other mechanical and chemical treatments often used in combination. The results from different treatments are additive and complement each other. This makes it possible to introduce fluids carrying sand, walnut hulls, or other small particles of

material into the newly created crevices to keep the fractures open when the pressure is relieved. This process increases the flow rate and volume of reservoir fluids that move from the producing formation into the wellbore. The fracking fluid is typically more than 99 percent water and sand, with small amounts of readily available chemical additives used to control the chemical and mechanical properties of the water and sand mixture.

The State of Montana, Department of Natural Resource and Conservation, Oil and Gas Conservation Division, Board of Oil and Gas Conservation (MBOGC), regulations ensure that all resources including groundwater are protected. The MBOGC regulations require new and existing wells which will be stimulated by hydraulic fracturing must demonstrate suitable and safe mechanical configuration for the stimulation treatment proposed. If the operator proposes hydraulic fracturing through production casing or through intermediate casing, the casing must be tested to the maximum anticipated treating pressure. The MBOGC considers a casing pressure test to be considered successful if the pressure applied has been held for 30 minutes with no more than ten percent pressure loss. A pressure relief valve(s) must be installed on the treating lines between pumps and wellhead to limit the line and the well must be equipped with a remotely controlled shut-in device unless waived by the board administrator. Finally, the surface casing valve must remain open while hydraulic fracturing operations are in progress; the annular space between the fracturing string and the intermediate or production casing must be monitored and may be pressurized to a pressure not to exceed the pressure rating of the lowest rated component that would be exposed to pressure should the fracturing string fail.

To ensure that hydraulic fracturing is conducted in a safe and environmentally sound manner, the BLM approves and regulates all drilling and completion operations, and related surface disturbance on Federal public lands. Operators must submit Applications for Permit to Drill (APDs) to the agency. Prior to approving an APD, the BLM identifies all potential subsurface formations that will be penetrated by the wellbore. This includes all groundwater aquifers and any zones that would present potential safety or health risks that may need special protection measures during drilling, or that may require specific protective well construction measures.

Once the geologic analysis is completed, the BLM reviews the company's proposed casing and cementing programs to ensure the well construction design is adequate to protect the surface and subsurface environment, including the potential risks identified by the geologist and all known or anticipated zones with potential risks.

Before hydraulic fracturing takes place, all surface casing and some deeper, intermediate zones are required to be cemented from the bottom of the cased hole to the surface. The cemented well is pressure tested to ensure there are no leaks and a cement bond log is run to ensure the cement has bonded to the casing and the formation. If the fracturing of the well is considered to be a "non-routine" fracture for the area, the BLM will always be onsite during those operations as well as when abnormal conditions develop during the drilling or completion of a well.

4.18.2 Solid Minerals
4.18.2.1 Direct and Indirect Effects

Leasing the parcels would have no direct impacts solid minerals. As described in Chapter 3, none of the parcels proposed to be leased for oil and gas in the analysis area conflict with currently active or existing claims, patents, permits or leases for all solid materials issued on federal lands within the analysis area.

4.19 Special Designations

4.19.1 Direct and Indirect Effects

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

None of the lease parcels fall within Wilderness Study Areas or Areas of Critical Environmental Concern. Although the proposed lease parcels are all within 10 miles of Bitter Creek WSA and may be visible from Highway 24, they are not located along the main county roads that provide public access to the WSA.

Indirect effects to the WSA could occur with increased traffic along highway 24 during development of the lease parcels.

4.19.2 Mitigation

Mitigation measures would be to limit traffic on Kerr Road and Thoeny Road which are the primary means of public access to the WSA as well as those described in Alternative B, Visual Resources, and Mitigation.

4.20 Social and Economic Conditions

4.20.1 Social Environmental Impacts Common to All Alternatives

Impacts to the social environment of Valley County from this BLM action would be associated with a change in the workforce/employment. Based upon the economics analysis, there would be very little impact to the social qualities, community infrastructure, and community services of Valley County.

4.20.2 Economics

4.20.2.1 Direct and Indirect Effects

4.20.2.2 Cumulative Impacts- Alternative B

Cumulative impacts are those impacts resulting from the incremental impact of an action when added to other past, present, and reasonably foreseeable actions regardless of what agency or person undertakes such other actions. This section describes cumulative impacts associated with this project on resources. The ability to assess the potential cumulative impacts at the leasing stage for this project is limited for many resources due to the lack of site-specific information for potential future activities. Upon receipt of an APD for any of the lease parcels addressed in this document, more site-specific planning would be conducted in which the ability to assess contributions to cumulative impacts in a more detailed manner would be greater due to the availability of more refined site-specific information about proposed activities.

4.21 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. There are no other major foreseeable future actions, and it is anticipated that the current use of the land would remain the same.

4.22 Cumulative Impacts by Resource

Cumulative effects for all resources in the Glasgow Field Office are described in the Judith-Valley-Phillips Resource Management Plan (JVP RMP). 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.

4.22.1 Greenhouse Gas Emissions and Cumulative Impacts on Climate Change

The cumulative effects analysis area is the HiLine analysis area, with additional discussion at state-wide, national, and global scales for GHG emissions and climate change.

This section incorporates an analysis of the contributions of the Proposed Action to GHG emissions, followed by a general discussion of potential impacts to climate change. Potential emissions relate to those derived from potential exploration and development of fluid minerals. Additional emissions beyond the control of the BLM, and outside the scope of this analysis, would also occur during any needed refining processes, as well as end uses of final products.

Projected GHG emissions for this project and the HiLine District RFD are compared below with recent, available inventory data at the state, national, and global scales. GHG emissions inventories can vary greatly in their scope and comprehensiveness. State, national, and global inventories are not necessarily consistent in their methods or in the variety of GHG sources that are inventoried (Climate Change SIR 2010). However, comparisons of emissions projected by the BLM for its oil and gas production activities are made with those from inventories at other scales for the sake of providing context for the potential contributions of GHGs associated with this project.

As discussed in the Air Quality section of Chapter 4, total projected BLM GHG emissions from the RFD are 133,856 metric tons/year CO_2e. Potential emissions under Alternative B would be approximately 0.020 percent of this total. Table 13 displays projected GHG emissions from non-BLM activities included in the HiLine RFD. Total projected emissions of non-BLM activities in the RFD in Appendix B are 276,754 metric tons/year of CO_2e. When combined with projected annual BLM emissions, this totals 410,611 metric tons/year CO_2e. Potential GHG emissions under Alternative B would be 0.0066 percent of the estimated emissions for the entire RFD. Potential incremental emissions of GHGs from exploration and development of fluid minerals on parcels within Alternative B would be minor in the context of projected GHG contributions from the entire RFD for the HiLine District.

Table 14. Projected non-BLM GHG emissions associated with the HiLine Reasonably Foreseeable Development Scenario for fluid mineral exploration and development.

Source	Emissions (metric tons/yr.)			
	CO_2	CH_4	N_2O	CO_2e
Conventional Natural Gas	230,464	1,989	1.15	247,354
Coal Bed Natural Gas	4,736	261	0.01	9,282
Oil	19,560	124	0.05	20,118
Total	**254,760**	**2,374**	**1.21**	**276,754**

Montana's Contribution to U.S. and Global Greenhouse Gases (GHGs)
Montana's GHG inventory (http://www.eia.doe.gov/oiaf/1605/archive/gg04rpt/emission.html, Center for Climate Strategies 2007) shows that activities within the state contribute 0.6 percent of U.S and 0.076 percent of global GHG emissions (based on 2004 global GHG emission data from the IPCC, summarized in the Climate Change SIR 2010). Based on 2005 data in the state-wide inventory, the most pronounced source of Montana's emissions is combustion of fossil fuels to generate electricity, which accounts for about 27 percent of Montana's emissions. The next largest contributors are the agriculture and transportation sectors (each at approximately 22 percent) and fossil fuel production (13.6 percent).

GHG emissions from all major sectors in Montana in 2005 added up to a total of approximately 36.8 million metric tons of CO_2e (Center for Climate Strategies (CCS) 2007). Potential emissions from development of lease parcels in Alternative B of this project represent approximately 0.000073 percent of the state-wide total of GHG emissions based on the 2005 state-wide inventory (CCS 2007).

The EPA published an inventory of U.S. GHG emissions, indicating gross U.S. emissions of 6,822 million metric tons, and net emissions of 5,747 million metric tons (when CO_2 sinks were considered) of CO_2e in 2010 (EPA 2012). Potential annual emissions under Alternative B of this project would amount to approximately 4.0E-07 percent of gross U.S. total emissions. Global GHG emissions for 2004 (IPCC 2007, summarized by the Climate Change SIR 2010) indicated approximately 49 gigatonnes (10^9 metric tons) of CO_2e emitted. Potential annual emissions under Alternative B would amount to approximately 5.5E-08 percent of this global total.

As indicated above, although the effects of GHG emissions in the global aggregate are well-documented, it is currently not credibly possible to determine what specific effect GHG emissions resulting from a particular activity might have on climate or the environment. If exploration and development occur on the lease parcels considered under Alternative B, potential GHG emissions described above would incrementally contribute to the total volume of GHGs emitted to the atmosphere, and ultimately to climate change.

Mitigation measures identified in the Chapter 4 Air Quality section above may be in place at the APD stage to reduce GHG emissions from potential oil and gas development on lease parcels under Alternative B. This is likely because many operators working in Montana are currently USEPA Natural Gas STAR Program Partners and future regulations may require GHG emission

controls for a variety of industries, including the oil and gas industry (Climate Change SIR 2010).

4.22.2 Cumulative Impacts of Climate Change

As previously discussed in the Air Quality section of Chapter 4, it is difficult to impossible to identify specific impacts of climate change on specific resources within the analysis area. As summarized in the Climate Change SIR (2010), 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). Effects of climate change on resources are described in Chapter 3 of this EA and in the Climate Change SIR (2010).

4.22.3 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 form 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.

4.22.4 Cumulative Impacts to Economic Conditions

Cumulative Effects
The cumulative effects of federal mineral leasing within the local economy as well as the specific effects of leasing an additional 880 acres under Alternative C are summarized in Table 9 (Summary Comparison of Cumulative Annual Economic Impacts by Alternative) and Table 10 (Employment and Income Related to BLM Oil and Gas Management).

The annual SCC associated with cumulative oil and gas development is $76,446 (in 2011 dollars) based on 54,165 cumulative acres. As noted earlier, the estimated SCC is not directly comparable to economic contributions.

5.0 CONSULTATION AND COORDINATION:

5.1 Persons, Agencies, and Organizations Consulted

Coordination with MFWP and USFWS was conducted for the four 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 stipulations associated with these parcels being analyzed.

The BLM consults with Native Americans under Section 106 of the National Historic Preservation Act. BLM sent letters 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 four 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 Chairperson/Presidents and THPO or other cultural contacts for the Blackfeet, Gros Ventre, Assiniboine, Sioux, Flathead (Salish) Kootenai, Shoshone, Bannock, Northern Cheyenne, Little Shell Tribe of Chippewa, Nez Perce, Crow, and Cree Tribes. 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 4 parcels for sale.

5.2 Summary of Public Participation

Scoping:

In response to scoping and preliminary EA/draft FONSI comments the BLM Montana State Office website was modified to more clearly reflect opportunities for the public to comment on lease sale documents. The modifications include links to documents and clearly defined dates for comment submittal.

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, 2013; however, scoping comments were received through April 9, 2013. Surface owner notification letters were also distributed briefly explaining the oil and gas leasing process and planning process. The surface owner notification letter requested written comments regarding any issues or concerns that should be addressed in the environmental analysis.

A total of 17 surface owner notification letters were distributed for the oil and gas leasing analysis process in the GFO.

A total of 2 written submissions were received after the 30-day comment period, which resulted in 84 individually-coded substantive comments. After review and consideration of the comments, some modifications have been made to the EA. Changes made to the analysis are noted with gray-scale shading and/or strikeout so the modifications to the EA can easily be identified.

The following is a summary of some of the issues and/or changes made to the EA as a result of the 30-day public comment period:

- Clarification of the MSO website which reflect the opportunity for the public to comment
- A discussion of hydraulic fracturing
- A discussion of air quality and climate change
- Additional data regarding ozone and hazardous air pollutants
- A description of the social cost of carbon (SCC)

· Clarification of the MSO website which reflect the opportunity for the public to comment

· A discussion of hydraulic fracturing

· A discussion of air quality and climate change

· Additional data regarding ozone and hazardous air pollutants

· A description of the social cost of carbon (SCC)

· Concerns regarding the specific locations that could possibly be drilled (e.g. naturally occurring springs, surface water flow, hydrogeological studies of the area, etc.)

Table 15. List of Preparers

Name	Title	Responsible for the Following Section(s) of this Document
Tessa Wallace	Natural Resource Specialist	NEPA Lead
Susan Bassett	Air Resource Specialist	Air Quality/Climate Change/GHG
Abel Guevara	Wildlife Biologist	Wildlife and Special Status Species
Jody Mason	Rangeland Management Specialist	Vegetation Resources/Livestock Grazing
Lottie Hufford	Physical Science Technician	Mineral Estate and GIS
Josh Chase	Archeologist	Cultural Resources
Micah Lee	Realty Specialist	Lands and Realty
Gregory Liggett	State Paleontologist	Paleontology
Barney Whiteman	Petroleum Engineer	Fluid Minerals
Kathy Tribby	Outdoor Recreation Planner	Recreation, Visual Resources, and Special Designations Analysis
Josh Sorlie	Soil Scientist	Soils
Joan Trent	Social Scientist	Social Analysis
John Thompson	Planning &Environmental Specialist	Economic Analysis

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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 2010 data set was used in this analysis.

Appendix A. Lease Parcel Summary Table

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 102757-66	T. 35 N, R. 35 E, PMM, MT SEC. 1 LOTS 3, 4; SEC. 1 S2NW,SW,S2SE; VALLEY COUNTY 401.11 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-67	T. 35 N, R. 35 E, PMM, MT SEC. 2 LOTS 1-4; SEC. 2 S2N2,S2; VALLEY COUNTY 640.04 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-68	T. 35 N, R. 35 E, PMM, MT SEC. 3 LOT 2; SEC. 3 SW; VALLEY COUNTY 199.62 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-69	T. 35 N, R. 35 E, PMM, MT SEC. 4 LOTS 1-4; SEC. 4 S2NE,SENW,NESW; VALLEY COUNTY 320.72 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-7A	T. 35 N, R. 35 E, PMM, MT SEC. 4 SWNW,NWSW,S2SW; VALLEY COUNTY 160.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 102757-7C	T. 35 N, R. 35 E, PMM, MT SEC. 4 E2SE; SEC. 9 E2NE; VALLEY COUNTY 160.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-7B	T. 35 N, R. 35 E, PMM, MTSEC. 4 W2SE;SEC. 9 W2NE,NW;VALLEY COUNTY320.00 ACACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-7D	T. 35 N, R. 35 E, PMM, MT SEC. 5 LOTS 1-4; SEC. 5 S2N2,W2SW,SE; VALLEY COUNTY 561.76 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-7E	T. 35 N, R. 35 E, PMM, MT SEC. 6 LOTS 1-7; SEC. 6 S2NE,SENW,E2SW,SE; VALLEY COUNTY 634.17 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-7F	T. 35 N, R. 35 E, PMM, MT SEC. 10 S2; VALLEY COUNTY 320.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 102757-7G	T. 35 N, R. 35 E, PMM, MT SEC. 11 N2N2,S2NE,E2SE; VALLEY COUNTY 320.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-7H	T. 35 N, R. 35 E, PMM, MT SEC. 13 ALL; VALLEY COUNTY 640.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-7J	T. 35 N, R. 35 E, PMM, MTSEC. 14 NE,N2NW,N2SE;SEC. 15 N2NE;VALLEY COUNTY400.00 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-7K	T. 35 N, R. 35 E, PMM, MT SEC. 14 S2NW,SW,S2SE; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-7L	T. 35 N, R. 35 E, PMM, MT SEC. 15 S2NE,SESW,NESE,S2SE; VALLEY COUNTY 240.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-99	T. 36 N, R. 35 E, PMM, MT SEC. 1 LOTS 1-4; SEC. 1 S2; VALLEY COUNTY 483.24 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-A	T. 36 N, R. 35 E, PMM, MT SEC. 2 LOTS 1-4; SEC. 2 S2; VALLEY COUNTY 486.08 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-B	T. 36 N, R. 35 E, PMM, MT SEC. 3 LOTS 1-4; SEC. 3 S2; VALLEY COUNTY 488.92 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-C	T. 36 N, R. 35 E, PMM, MTSEC. 4 LOTS 1-4;SEC. 4 S2;VALLEY COUNTY491.52 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-D	T. 36 N, R. 35 E, PMM, MT SEC. 5 LOTS 1-4; SEC. 5 S2; VALLEY COUNTY 494.52 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-E	T. 36 N, R. 35 E, PMM, MT SEC. 6 LOTS 1-3,6; SEC. 6 E2SW,SE; VALLEY COUNTY 407.69 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-F	T. 36 N, R. 35 E, PMM, MT SEC. 6 LOTS 4,5; VALLEY COUNTY 72.51 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-G	T. 36 N, R. 35 E, PMM, MT SEC. 7 LOTS 1-4; SEC. 7 E2,E2W2; VALLEY COUNTY 621.80 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-H	T. 36 N, R. 35 E, PMM, MT SEC. 8 ALL; VALLEY COUNTY 640.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-J	T. 36 N, R. 35 E, PMM, MTSEC. 9 N2N2,SWNW;SEC. 10 N2NW;VALLEY COUNTY280.00 ACACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-K	T. 36 N, R. 35 E, PMM, MT SEC. 9 S2NE,SENW,S2; VALLEY COUNTY 440.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-L	T. 36 N, R. 35 E, PMM, MT SEC. 10 NE,SWNW,S2; VALLEY COUNTY 520.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-M	T. 36 N, R. 35 E, PMM, MT SEC. 11 ALL; VALLEY COUNTY 640.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-N	T. 36 N, R. 35 E, PMM, MT SEC. 12 ALL; VALLEY COUNTY 640.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-P	T. 36 N, R. 35 E, PMM, MT SEC. 13 ALL; VALLEY COUNTY 640.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-Q	T. 36 N, R. 35 E, PMM, MT SEC. 14 ALL; VALLEY COUNTY 640.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-R	T. 36 N, R. 35 E, PMM, MTSEC. 15 NE,N2NW,S2SW;VALLEY COUNTY320.00 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-T	T. 36 N, R. 35 E, PMM, MT SEC. 15 S2NW,N2SW,SE; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-U	T. 36 N, R. 35 E, PMM, MT SEC. 17 ALL; VALLEY COUNTY 640.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-V	T. 36 N, R. 35 E, PMM, MT SEC. 18 LOTS 1-4; SEC. 18 E2,E2W2; VALLEY COUNTY 625.32 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-W	T. 36 N, R. 35 E, PMM, MT SEC. 19 LOTS 1-4; SEC. 19 NE,E2W2; VALLEY COUNTY 467.84 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-X	T. 36 N, R. 35 E, PMM, MT SEC. 20 N2,SW; VALLEY COUNTY 480.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-Y	T. 36 N, R. 35 E, PMM, MT SEC. 20 SE; SEC. 21 SW; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-3	T. 36 N, R. 35 E, PMM, MTSEC. 21 N2,SE;VALLEY COUNTY480.00 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-4	T. 36 N, R. 35 E, PMM, MT SEC. 22 ALL; VALLEY COUNTY 640.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-6	T. 36 N, R. 35 E, PMM, MT SEC. 23 N2,SW,N2SE; VALLEY COUNTY 560.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-7	T. 36 N, R. 35 E, PMM, MT SEC. 24 S2; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-8	T. 36 N, R. 35 E, PMM, MT SEC. 25 N2,E2SE; VALLEY COUNTY 400.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-9	T. 36 N, R. 35 E, PMM, MT SEC. 26 NE; VALLEY COUNTY 160.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-AA	T. 36 N, R. 35 E, PMM, MT SEC. 26 W2,NESE; VALLEY COUNTY 360.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-AB	T. 36 N, R. 35 E, PMM, MTSEC. 27 E2,NENW,SESW;VALLEY COUNTY400.00 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-AC	T. 36 N, R. 35 E, PMM, MT SEC. 27 SWSW; SEC. 28 NWNW,S2NW,N2S2, SESW,SESE; SEC. 29 S2NE; VALLEY COUNTY 480.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-AD	T. 36 N, R. 35 E, PMM, MT SEC. 28 NENW,SWSW; SEC. 29 N2N2,S2NW,N2S2, SWSW,SESE; VALLEY COUNTY 560.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-AE	T. 36 N, R. 35 E, PMM, MT SEC. 28 SWSE; SEC. 33 NE,NENW,S2NW,N2S2, SWSW; VALLEY COUNTY 520.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-AF	T. 36 N, R. 35 E, PMM, MT SEC. 29 SESW,SWSE; SEC. 32 NE,NWSE; SEC. 33 NWNW; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-AG	T. 36 N, R. 35 E, PMM, MTSEC. 30 LOTS 1-4;SEC. 30 E2W2,SE;VALLEY COUNTY470.12 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-AH	T. 36 N, R. 35 E, PMM, MT SEC. 31 LOTS 1-4; SEC. 31 E2,E2W2; VALLEY COUNTY 633.16 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-AJ	T. 36 N, R. 35 E, PMM, MT SEC. 32 W2,NESE,S2SE; VALLEY COUNTY 440.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-AK	T. 36 N, R. 35 E, PMM, MT SEC. 33 SESW,S2SE; SEC. 34 SWSW; VALLEY COUNTY 160.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-AL	T. 36 N, R. 35 E, PMM, MT SEC. 34 N2NE,NW,N2SW,SESW, SWSE; VALLEY COUNTY 400.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-AM	T. 36 N, R. 35 E, PMM, MT SEC. 34 S2NE,N2SE,SESE; SEC. 35 SWNW,W2SW; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-AN	T. 36 N, R. 35 E, PMM, MTSEC. 35 NWNE,S2NE,E2W2, NWNW,SE;VALLEY COUNTY480.00 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-CL	T. 37 N, R. 35 E, PMM, MT SEC. 1 LOTS 1-4; SEC. 1 S2NE,N2SE; VALLEY COUNTY 344.40 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-CM	T. 37 N, R. 35 E, PMM, MT SEC. 1 SESW,S2SE; VALLEY COUNTY 120.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-CN	T. 37 N, R. 35 E, PMM, MT SEC. 3 LOT 3; VALLEY COUNTY 45.65 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-CP	T. 37 N, R. 35 E, PMM, MT SEC. 4 LOTS 1-4; SEC. 4 S2NE,N2SE; VALLEY COUNTY 342.32 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-CQ	T. 37 N, R. 35 E, PMM, MT SEC. 4 S2NW,SW,S2SE; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-CR	T. 37 N, R. 35 E, PMM, MTSEC. 5 LOTS 1-4;SEC. 5 S2N2,S2;VALLEY COUNTY661.48 ACACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-CT	T. 37 N, R. 35 E, PMM, MT SEC. 6 LOTS 1-7; SEC. 6 S2NE,SENW,E2SW,SE; VALLEY COUNTY 654.58 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-CU	T. 37 N, R. 35 E, PMM, MT SEC. 7 LOTS 1-3; SEC. 7 E2W2; VALLEY COUNTY 276.60 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-CV	T. 37 N, R. 35 E, PMM, MT SEC. 7 LOT 4; SEC. 7 E2; SEC. 8 W2W2; VALLEY COUNTY 519.04 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-CW	T. 37 N, R. 35 E, PMM, MT SEC. 8 E2E2; SEC. 9 W2,S2SE; VALLEY COUNTY 560.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-CX	T. 37 N, R. 35 E, PMM, MT SEC. 9 NE,N2SE; SEC. 10 SWNW,NWSW; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-CY	T. 37 N, R. 35 E, PMM, MTSEC. 10 E2,E2W2,SWSW;VALLEY COUNTY520.00 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-C3	T. 37 N, R. 35 E, PMM, MT SEC. 11 ALL; VALLEY COUNTY 640.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-C4	T. 37 N, R. 35 E, PMM, MT SEC. 13 N2NE; VALLEY COUNTY 80.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-C6	T. 37 N, R. 35 E, PMM, MT SEC. 13 NW,NESW; SEC. 14 N2NE,SENE; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-C7	T. 37 N, R. 35 E, PMM, MT SEC. 13 NWSW,SESW; VALLEY COUNTY 80.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-C8	T. 37 N, R. 35 E, PMM, MT SEC. 14 SWNE,NW,N2SW, SESW,SE; SEC. 15 NENE; SEC. 23 N2NE; VALLEY COUNTY 600.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-C9	T. 37 N, R. 35 E, PMM, MTSEC. 15 W2;VALLEY COUNTY320.00 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-DA	T. 37 N, R. 35 E, PMM, MT SEC. 17 E2,E2W2,W2SW; VALLEY COUNTY 560.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-DB	T. 37 N, R. 35 E, PMM, MT SEC. 17 W2NW; SEC. 18 LOTS 1-4; SEC. 18 NE,E2W2; VALLEY COUNTY 557.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-DC	T. 37 N, R. 35 E, PMM, MT SEC. 18 SE; VALLEY COUNTY 160.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-DD	T. 37 N, R. 35 E, PMM, MT SEC. 19 LOTS 1-3; SEC. 19 NE,E2NW,NESW,N2SE, SESE; VALLEY COUNTY 518.69 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-DE	T. 37 N, R. 35 E, PMM, MT SEC. 19 LOT 4; SEC. 19 SESW,SWSE; SEC. 30 LOT 1; SEC. 30 NWNE,NENW; VALLEY COUNTY 239.59 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-DG	T. 37 N, R. 35 E, PMM, MTSEC. 20 E2;VALLEY COUNTY320.00 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-DF	T. 37 N, R. 35 E, PMM, MT SEC. 20 W2; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-DH	T. 37 N, R. 35 E, PMM, MT SEC. 21 N2,E2SW,NESE,S2SE; SEC. 28 NENW; VALLEY COUNTY 560.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-DJ	T. 37 N, R. 35 E, PMM, MT SEC. 21 W2SW,NWSE; SEC. 28 W2NE,NWNW,S2NW; VALLEY COUNTY 320.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-DK	T. 37 N, R. 35 E, PMM, MT SEC. 22 N2,W2SW,SE; VALLEY COUNTY 560.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-DL	T. 37 N, R. 35 E, PMM, MT SEC. 22 E2SW; VALLEY COUNTY 80.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-DM	T. 37 N, R. 35 E, PMM, MT SEC. 23 SWNE,NW,E2SW,W2SE; VALLEY COUNTY 360.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-DN	T. 37 N, R. 35 E, PMM, MTSEC. 23 W2SW,E2SE;VALLEY COUNTY160.00 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-DP	T. 37 N, R. 35 E, PMM, MT SEC. 24 W2SW,NWSE,S2SE; VALLEY COUNTY 200.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-DQ	T. 37 N, R. 35 E, PMM, MT SEC. 25 E2,N2NW,SENW; VALLEY COUNTY 440.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-DR	T. 37 N, R. 35 E, PMM, MT SEC. 25 SWNW,SW; VALLEY COUNTY 200.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-DT	T. 37 N, R. 35 E, PMM, MT SEC. 26 E2,E2NW; VALLEY COUNTY 400.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-DU	T. 37 N, R. 35 E, PMM, MT SEC. 26 W2NW; SEC. 27 NE,E2NW,SW,W2SE; VALLEY COUNTY 560.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-DV	T. 37 N, R. 35 E, PMM, MT SEC. 27 W2NW; SEC. 28 E2NE; VALLEY COUNTY 160.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-DW	T. 37 N, R. 35 E, PMM, MTSEC. 28 S2;VALLEY COUNTY320.00 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-DX	T. 37 N, R. 35 E, PMM, MT SEC. 29 ALL; VALLEY COUNTY 640.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-DY	T. 37 N, R. 35 E, PMM, MT SEC. 30 E2E2,SWSE; VALLEY COUNTY 200.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-D3	T. 37 N, R. 35 E, PMM, MT SEC. 31 LOTS 1-4; SEC. 31 E2,E2W2; VALLEY COUNTY 640.16 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-D4	T. 37 N, R. 35 E, PMM, MT SEC. 32 E2,NENW,NWSW,S2SW; VALLEY COUNTY 480.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-D6	T. 37 N, R. 35 E, PMM, MT SEC. 32 NWNW,S2NW,NESW; VALLEY COUNTY 160.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-D7	T. 37 N, R. 35 E, PMM, MT SEC. 33 ALL; VALLEY COUNTY 640.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-D8	T. 37 N, R. 35 E, PMM, MTSEC. 34 W2NE,NW,S2;VALLEY COUNTY560.00 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-D9	T. 37 N, R. 35 E, PMM, MT SEC. 35 ALL; VALLEY COUNTY 640.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-7M	T. 35 N, R. 36 E, PMM, MT SEC. 1 LOTS 1,2; SEC. 1 S2NE,SE; VALLEY COUNTY 320.22 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-7N	T. 35 N, R. 36 E, PMM, MT SEC. 1 LOTS 3,4; SEC. 1 S2NW,E2SW; VALLEY COUNTY 240.66 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-7P	T. 35 N, R. 36 E, PMM, MT SEC. 2 LOTS 1,2; SEC. 2 S2NE,SE; VALLEY COUNTY 320.76 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-7Q	T. 35 N, R. 36 E, PMM, MT SEC. 3 LOT 1; SEC. 3 SENE,SE; VALLEY COUNTY 240.09 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 102757-7R	T. 35 N, R. 36 E, PMM, MTSEC. 3 W2SW;SEC. 4 E2SE;VALLEY COUNTY160.00 ACACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-7T	T. 35 N, R. 36 E, PMM, MT SEC. 4 LOTS 1-4; SEC. 4 S2N2; VALLEY COUNTY 319.04 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-7U	T. 35 N, R. 36 E, PMM, MT SEC. 5 SW,W2SE; VALLEY COUNTY 240.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-7V	T. 35 N, R. 36 E, PMM, MT SEC. 6 E2SW,SE; VALLEY COUNTY 240.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-7W	T. 35 N, R. 36 E, PMM, MT SEC. 7 LOTS 1-4; SEC. 7 E2,E2W2; VALLEY COUNTY 630.04 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-7X	T. 35 N, R. 36 E, PMM, MT SEC. 8 NE,E2NW,S2; VALLEY COUNTY 560.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 102757-7Y	T. 35 N, R. 36 E, PMM, MT SEC. 9 ALL; VALLEY COUNTY 640.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-73	T. 35 N, R. 36 E, PMM, MTSEC. 10 ALL;VALLEY COUNTY640.00 ACACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-74	T. 35 N, R. 36 E, PMM, MT SEC. 11 ALL; VALLEY COUNTY 640.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-76	T. 35 N, R. 36 E, PMM, MT SEC. 12 N2,SW,S2SE; VALLEY COUNTY 560.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-77	T. 35 N, R. 36 E, PMM, MT SEC. 13 E2,E2NW,W2SW; VALLEY COUNTY 480.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-78	T. 35 N, R. 36 E, PMM, MT SEC. 14 W2NE,NW,S2; VALLEY COUNTY 560.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 102757-79	T. 35 N, R. 36 E, PMM, MT SEC. 15 ALL; VALLEY COUNTY 640.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-8A	T. 35 N, R. 36 E, PMM, MT SEC. 17 N2,E2SW,SE; VALLEY COUNTY 560.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-8B	T. 35 N, R. 36 E, PMM, MTSEC. 18 LOTS 1-4;SEC. 18 E2,E2SW;VALLEY COUNTY548.20 ACACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-8C	T. 35 N, R. 36 E, PMM, MT SEC. 19 E2; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-8D	T. 35 N, R. 36 E, PMM, MT SEC. 20 ALL; VALLEY COUNTY 640.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-8E	T. 35 N, R. 36 E, PMM, MT SEC. 21 ALL; VALLEY COUNTY 640.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 102757-8F	T. 35 N, R. 36 E, PMM, MT SEC. 22 NE,W2NENW,NWNW, S2NW,S2; VALLEY COUNTY 620.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-8G	T. 35 N, R. 36 E, PMM, MT SEC. 23 NE,E2NW,N2SW,SWSW, NWSE; VALLEY COUNTY 400.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-8H	T. 35 N, R. 36 E, PMM, MT SEC. 23 NESE; VALLEY COUNTY 40.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-8J	T. 35 N, R. 36 E, PMM, MTSEC. 24 E2,E2SW;VALLEY COUNTY400.00 ACACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-8K	T. 35 N, R. 36 E, PMM, MT SEC. 25 ALL; VALLEY COUNTY 640.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-8L	T. 35 N, R. 36 E, PMM, MT SEC. 26 N2NE; VALLEY COUNTY 80.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 102757-8M	T. 35 N, R. 36 E, PMM, MT SEC. 26 W2NW,NWSW; VALLEY COUNTY 120.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-8N	T. 35 N, R. 36 E, PMM, MT SEC. 27 ALL; VALLEY COUNTY 640.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-8P	T. 35 N, R. 36 E, PMM, MT SEC. 28 N2NE,SENE,NWNW, NESE,S2SE; VALLEY COUNTY 280.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-8Q	T. 35 N, R. 36 E, PMM, MT SEC. 29 E2; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-8R	T. 35 N, R. 36 E, PMM, MTSEC. 30 LOTS 1,2;SEC. 30 E2NW;VALLEY COUNTY152.01 ACACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-8T	T. 35 N, R. 36 E, PMM, MT SEC. 31 LOTS 3,4; SEC. 31 N2NE,E2SW; VALLEY COUNTY 231.08 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 102757-8U	T. 35 N, R. 36 E, PMM, MT SEC. 32 N2,E2SW; VALLEY COUNTY 400.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-8V	T. 35 N, R. 36 E, PMM, MT SEC. 34 N2NE; SEC. 35 W2; VALLEY COUNTY 400.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-8W	T. 35 N, R. 36 E, PMM, MT SEC. 35 S2NE,SE; VALLEY COUNTY 240.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-AP	T. 36 N, R. 36 E, PMM, MT SEC. 1 LOTS 1-4; SEC. 1 S2; SEC. 2 LOT 1; SEC. 2 NESE; VALLEY COUNTY 555.45 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-AQ	T. 36 N, R. 36 E, PMM, MTSEC. 2 LOTS 2-4;SEC. 2 SW,NWSE,S2SE;SEC. 3 S2SE;VALLEY COUNTY477.23 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-AR	T. 36 N, R. 36 E, PMM, MT SEC. 5 SW; SEC. 6 LOT 6; SEC. 6 SESW,SE; VALLEY COUNTY 394.69 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-E6	T. 36 N, R. 36 E, PMM, MT SEC. 6 LOTS 3-5; SEC. 6 NESW; VALLEY COUNTY 149.70 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-AT	T. 36 N, R. 36 E, PMM, MT SEC. 7 LOTS 1-4; SEC. 7 E2W2,SE; VALLEY COUNTY 459.52 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-AU	T. 36 N, R. 36 E, PMM, MT SEC. 7 NE; VALLEY COUNTY 160.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-AV	T. 36 N, R. 36 E, PMM, MT SEC. 8 ALL; VALLEY COUNTY 640.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-AW	T. 36 N, R. 36 E, PMM, MTSEC. 9 E2NE,NW,S2SE;VALLEY COUNTY320.00 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-AX	T. 36 N, R. 36 E, PMM, MT SEC. 9 W2NE,SW,N2SE; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-AY	T. 36 N, R. 36 E, PMM, MT SEC. 10 ALL; VALLEY COUNTY 640.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-A3	T. 36 N, R. 36 E, PMM, MT SEC. 11 N2,SW,N2SE,SESE; VALLEY COUNTY 600.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-A4	T. 36 N, R. 36 E, PMM, MT SEC. 11 SWSE; SEC. 14 NE,E2NW,SESW; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-A6	T. 36 N, R. 36 E, PMM, MT SEC. 12 ALL; VALLEY COUNTY 640.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-A7	T. 36 N, R. 36 E, PMM, MT SEC. 13 N2NE,NENW; VALLEY COUNTY 120.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-A8	T. 36 N, R. 36 E, PMM, MTSEC. 14 W2W2;SEC. 15 N2N2;VALLEY COUNTY320.00 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-A9	T. 36 N, R. 36 E, PMM, MT SEC. 15 S2N2,S2; VALLEY COUNTY 480.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-BA	T. 36 N, R. 36 E, PMM, MT SEC. 17 N2,SW; SEC. 18 SE; VALLEY COUNTY 640.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-BB	T. 36 N, R. 36 E, PMM, MT SEC. 18 LOTS 1-4; SEC. 18 NE,E2W2; VALLEY COUNTY 460.68 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-BC	T. 36 N, R. 36 E, PMM, MT SEC. 19 LOTS 1-4; SEC. 19 E2,E2W2; VALLEY COUNTY 622.12 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-BD	T. 36 N, R. 36 E, PMM, MT SEC. 20 NE,SENW,E2SW,NWSE; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-BE	T. 36 N, R. 36 E, PMM, MTSEC. 20 N2NW,SWNW,W2SW, NESE,S2SE;VALLEY COUNTY320.00 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-BF	T. 36 N, R. 36 E, PMM, MT SEC. 21 ALL; VALLEY COUNTY 640.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-BG	T. 36 N, R. 36 E, PMM, MT SEC. 22 E2; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-BH	T. 36 N, R. 36 E, PMM, MT SEC. 23 E2,E2W2; VALLEY COUNTY 480.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-BJ	T. 36 N, R. 36 E, PMM, MT SEC. 24 S2N2,S2; VALLEY COUNTY 480.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-BK	T. 36 N, R. 36 E, PMM, MT SEC. 25 N2NE,NW,NESW; VALLEY COUNTY 280.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-BL	T. 36 N, R. 36 E, PMM, MT SEC. 25 NWSW,S2S2; VALLEY COUNTY 200.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-BM	T. 36 N, R. 36 E, PMM, MTSEC. 26 NENE,S2NE,S2;SEC. 27 E2SE;VALLEY COUNTY520.00 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-BN	T. 36 N, R. 36 E, PMM, MT SEC. 26 NWNE,NW; VALLEY COUNTY 200.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-BP	T. 36 N, R. 36 E, PMM, MT SEC. 27 N2,SW,W2SE; VALLEY COUNTY 560.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-BQ	T. 36 N, R. 36 E, PMM, MT SEC. 28 ALL; VALLEY COUNTY 640.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-BR	T. 36 N, R. 36 E, PMM, MT SEC. 29 E2; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-BT	T. 36 N, R. 36 E, PMM, MT SEC. 29 W2; VALLEY COUNTY 320.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-BU	T. 36 N, R. 36 E, PMM, MT SEC. 30 LOTS 1-4; SEC. 30 E2,E2W2; VALLEY COUNTY 623.60 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-BV	T. 36 N, R. 36 E, PMM, MTSEC. 31 LOT 1;SEC. 31 NENE,S2NE,SE;VALLEY COUNTY316.11 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-BW	T. 36 N, R. 36 E, PMM, MT SEC. 32 ALL; VALLEY COUNTY 640.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-BX	T. 36 N, R. 36 E, PMM, MT SEC. 33 W2,E2SE; VALLEY COUNTY 400.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-B3	T. 36 N, R. 36 E, PMM, MT SEC. 34 E2NE,NESE; SEC. 35 N2N2,SWNW; VALLEY COUNTY 320.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-BY	T. 36 N, R. 36 E, PMM, MT SEC. 34 W2NE,W2,NWSE,S2SE; VALLEY COUNTY 520.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-B4	T. 36 N, R. 36 E, PMM, MT SEC. 35 S2NE,SENW; VALLEY COUNTY 120.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-B6	T. 36 N, R. 36 E, PMM, MT SEC. 35 S2; VALLEY COUNTY 320.00 AC **98% U.S. MINERAL INTEREST** 2/ ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-EA	T. 37 N, R. 36 E, PMM, MTSEC. 5 LOTS 1,2;SEC. 5 S2NE,SE;VALLEY COUNTY333.56 ACACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-EB	T. 37 N, R. 36 E, PMM, MT SEC. 5 LOTS 3,4; SEC. 5 S2NW,SW; VALLEY COUNTY 333.24 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-EC	T. 37 N, R. 36 E, PMM, MT SEC. 6 LOTS 1,2; SEC. 6 S2NE,SE; VALLEY COUNTY 332.89 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-ED	T. 37 N, R. 36 E, PMM, MT SEC. 6 LOTS 3-7; SEC. 6 SENW,E2SW; VALLEY COUNTY 328.80 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-EE	T. 37 N, R. 36 E, PMM, MT SEC. 7 E2; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-EF	T. 37 N, R. 36 E, PMM, MT SEC. 8 NE,N2SE,SWSE; VALLEY COUNTY 280.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-EG	T. 37 N, R. 36 E, PMM, MTSEC. 8 W2,SESE;VALLEY COUNTY360.00 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-EH	T. 37 N, R. 36 E, PMM, MT SEC. 17 N2,N2SE; SEC. 18 NENE; VALLEY COUNTY 440.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-EJ	T. 37 N, R. 36 E, PMM, MT SEC. 17 SW,S2SE; SEC. 20 N2NW; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-EK	T. 37 N, R. 36 E, PMM, MT SEC. 18 NWNE,S2NE,SE; SEC. 19 NENE; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-EL	T. 37 N, R. 36 E, PMM, MT SEC. 19 LOT 4; VALLEY COUNTY 39.99 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-EM	T. 37 N, R. 36 E, PMM, MT SEC. 19 SESE; SEC. 20 SWSW; SEC. 30 NE,N2SE; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-EN	T. 37 N, R. 36 E, PMM, MTSEC. 20 N2NE;VALLEY COUNTY80.00 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-EP	T. 37 N, R. 36 E, PMM, MT SEC. 20 SESW,S2SE; VALLEY COUNTY 120.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-EQ	T. 37 N, R. 36 E, PMM, MT SEC. 29 N2,W2SW,E2SE; VALLEY COUNTY 480.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-ER	T. 37 N, R. 36 E, PMM, MT SEC. 29 E2SW,W2SE; VALLEY COUNTY 160.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-ET	T. 37 N, R. 36 E, PMM, MT SEC. 30 LOTS 3,4; VALLEY COUNTY 80.37 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-EU	T. 37 N, R. 36 E, PMM, MT SEC. 31 LOTS 1-4; SEC. 31 E2,E2W2; VALLEY COUNTY 640.48 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-EV	T. 37 N, R. 36 E, PMM, MT SEC. 32 NWNW,S2NW,SW,NWSE; VALLEY COUNTY 320.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-EW	T. 37 N, R. 36 E, PMM, MTSEC. 33 E2NE,S2SW,SE;VALLEY COUNTY320.00 ACACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-EX	T. 37 N, R. 36 E, PMM, MT SEC. 33 W2NE,NW,N2SW; VALLEY COUNTY 320.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-EY	T. 37 N, R. 36 E, PMM, MT SEC. 34 ALL; VALLEY COUNTY 640.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-E3	T. 37 N, R. 36 E, PMM, MT SEC. 35 ALL; VALLEY COUNTY 640.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-E4	T. 37 N, R. 36 E, PMM, MT SEC. 36 W2; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 102757-8X	T. 35 N, R. 37 E, PMM, MT SEC. 4 S2; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-8Y	T. 35 N, R. 37 E, PMM, MT SEC. 5 LOTS 1-4; SEC. 5 S2N2,S2; VALLEY COUNTY 643.28 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-83	T. 35 N, R. 37 E, PMM, MTSEC. 6 LOTS 1-7;SEC. 6 S2NE,SENW,NESW,SE;VALLEY COUNTY597.87 ACACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-84	T. 35 N, R. 37 E, PMM, MT SEC. 7 LOT 1; SEC. 7 NWNE,S2NE,E2SW,SE; VALLEY COUNTY 398.93 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-86	T. 35 N, R. 37 E, PMM, MT SEC. 7 NENE; VALLEY COUNTY 40.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-87	T. 35 N, R. 37 E, PMM, MT SEC. 8 N2,SW,SWSE; VALLEY COUNTY 520.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 102757-88	T. 35 N, R. 37 E, PMM, MT SEC. 9 N2NE,E2SE; SEC. 10 W2; VALLEY COUNTY 480.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-89	T. 35 N, R. 37 E, PMM, MT SEC. 11 SW; VALLEY COUNTY 160.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-9A	T. 35 N, R. 37 E, PMM, MT SEC. 11 SE; VALLEY COUNTY 160.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-9B	T. 35 N, R. 37 E, PMM, MTSEC. 14 N2NE,NW,W2SW;VALLEY COUNTY320.00 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-9C	T. 35 N, R. 37 E, PMM, MT SEC. 14 S2NE,E2SW,SE; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-9D	T. 35 N, R. 37 E, PMM, MT SEC. 15 E2,N2NW,SENW,NESW, S2SW; VALLEY COUNTY 560.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 102757-9E	T. 35 N, R. 37 E, PMM, MT SEC. 15 SWNW,NWSW; VALLEY COUNTY 80.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-9F	T. 35 N, R. 37 E, PMM, MT SEC. 17 NWNE,W2; VALLEY COUNTY 360.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-9G	T. 35 N, R. 37 E, PMM, MT SEC. 17 S2NE,SE; VALLEY COUNTY 240.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-9H	T. 35 N, R. 37 E, PMM, MT SEC. 18 LOTS 1-4; SEC. 18 E2,E2W2; VALLEY COUNTY 635.52 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-9K	T. 35 N, R. 37 E, PMM, MTSEC. 19 LOTS 1-4;SEC. 19 E2W2,SE;VALLEY COUNTY473.72 ACACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-9J	T. 35 N, R. 37 E, PMM, MT SEC. 19 NE; SEC. 20 N2NW; VALLEY COUNTY 240.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 102757-9L	T. 35 N, R. 37 E, PMM, MT SEC. 20 N2NE,SENE,E2SE; VALLEY COUNTY 200.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-9M	T. 35 N, R. 37 E, PMM, MT SEC. 21 N2N2,SENE,SWNW, NESE,S2SE; VALLEY COUNTY 360.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-9N	T. 35 N, R. 37 E, PMM, MT SEC. 21 NWSW,S2SW; VALLEY COUNTY 120.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-9P	T. 35 N, R. 37 E, PMM, MT SEC. 22 E2,S2SW; SEC. 23 W2W2; VALLEY COUNTY 560.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-9Q	T. 35 N, R. 37 E, PMM, MTSEC. 22 NW,N2SW;VALLEY COUNTY240.00 ACACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-9R	T. 35 N, R. 37 E, PMM, MT SEC. 23 E2,E2W2; VALLEY COUNTY 480.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 102757-9T	T. 35 N, R. 37 E, PMM, MT SEC. 24 N2,SW; VALLEY COUNTY 480.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-9V	T. 35 N, R. 37 E, PMM, MT SEC. 26 NW; VALLEY COUNTY 160.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-9W	T. 35 N, R. 37 E, PMM, MT SEC. 26 E2SE; VALLEY COUNTY 80.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-9Y	T. 35 N, R. 37 E, PMM, MT SEC. 27 N2N2,SENE; VALLEY COUNTY 200.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-93	T. 35 N, R. 37 E, PMM, MT SEC. 27 SWNE,S2NW,S2; SEC. 28 SENE,NESE; VALLEY COUNTY 520.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-94	T. 35 N, R. 37 E, PMM, MTSEC. 28 N2NE,SWNE,NWSE,S2SE;VALLEY COUNTY240.00 ACPD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 102757-96	T. 35 N, R. 37 E, PMM, MT SEC. 28 W2; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-97	T. 35 N, R. 37 E, PMM, MT SEC. 29 NE,E2NW,S2; VALLEY COUNTY 560.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-98	T. 35 N, R. 37 E, PMM, MT SEC. 29 W2NW; VALLEY COUNTY 80.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-B7	T. 36 N, R. 37 E, PMM, MT SEC. 5 LOTS 1,4; SEC. 5 N2SW,SESW,NESE; VALLEY COUNTY 236.38 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-B8	T. 36 N, R. 37 E, PMM, MT SEC. 6 LOTS 1-6; SEC. 6 NESW,N2SE; VALLEY COUNTY 350.73 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-B9	T. 36 N, R. 37 E, PMM, MT SEC. 7 LOTS 1-4; SEC. 7 SESW,S2SE; VALLEY COUNTY 276.04 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-CA	T. 36 N, R. 37 E, PMM, MTSEC. 8 E2NW,SW;VALLEY COUNTY240.00 ACACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-CB	T. 36 N, R. 37 E, PMM, MT SEC. 14 E2SW; VALLEY COUNTY 80.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-CC	T. 36 N, R. 37 E, PMM, MT SEC. 17 NW; VALLEY COUNTY 160.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-CD	T. 36 N, R. 37 E, PMM, MT SEC. 18 SESE EXCL 2.28 AC IN CEMETARY DESC BY M&B; 1/ SEC. 18 LOTS 1,3,4; SEC. 18 NE,E2W2,N2SE,SWSE; VALLEY COUNTY 595.28 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-CE	T. 36 N, R. 37 E, PMM, MT SEC. 19 LOTS 1-4; SEC. 19 NE,E2W2; VALLEY COUNTY 477.40 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 105431-CF	T. 36 N, R. 37 E, PMM, MT SEC. 20 N2,SW,N2SE; VALLEY COUNTY 560.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-CG	T. 36 N, R. 37 E, PMM, MTSEC. 29 S2NE,NW,S2;VALLEY COUNTY560.00 ACACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-CH	T. 36 N, R. 37 E, PMM, MT SEC. 30 LOTS 1,2; SEC. 30 E2,E2NW; VALLEY COUNTY 479.05 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-CJ	T. 36 N, R. 37 E, PMM, MT SEC. 31 LOTS 1-4; SEC. 31 E2,E2W2; VALLEY COUNTY 639.24 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 105431-CK	T. 36 N, R. 37 E, PMM, MT SEC. 32 ALL; VALLEY COUNTY 640.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sage Grouse habitat
MTM 102757-6J	T. 34 N, R. 40 E, PMM, MT SEC. 4 LOT 1; SEC. 4 SENE; VALLEY COUNTY 80.15 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	

PARCEL NUMBER	PARCEL DESCRIPTION	PROPOSED STIPULATIONS FOR ENTIRE PARCEL IF LEASED	PROPOSED FOR DEFERRAL-NO LEASING
MTM 102757-6K	T. 34 N, R. 40 E, PMM, MT SEC. 4 S2SW; SEC. 9 NW,N2SW; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sprague's Pipit habitat
MTM 102757-6L	T. 34 N, R. 40 E, PMM, MT SEC. 11 S2; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	
MTM 102757-6M	T. 35 N, R. 40 E, PMM, MT SEC. 27 W2NE,E2SW,N2SE,SWSE; SEC. 34 NENW; VALLEY COUNTY 320.00 AC ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	DEFER (ALL LANDS) Primary Sprague's Pipit habitat
MTM 102757-6N	T. 35 N, R. 40 E, PMM, MT SEC. 33 SESW; SEC. 34 W2NE,SESE; VALLEY COUNTY 160.00 AC PD	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	
MTM 102757-6P	T. 35 N, R. 40 E, PMM, MT SEC. 35 SWNE,SENW,E2SW,SE; VALLEY COUNTY 320.00 AC **50% U.S. MINERAL INTEREST** 2/ ACQ	**CR 16-1** (ALL LANDS) **STANDARD 16-3** (ALL LANDS) **TES 16-2** (ALL LANDS)	

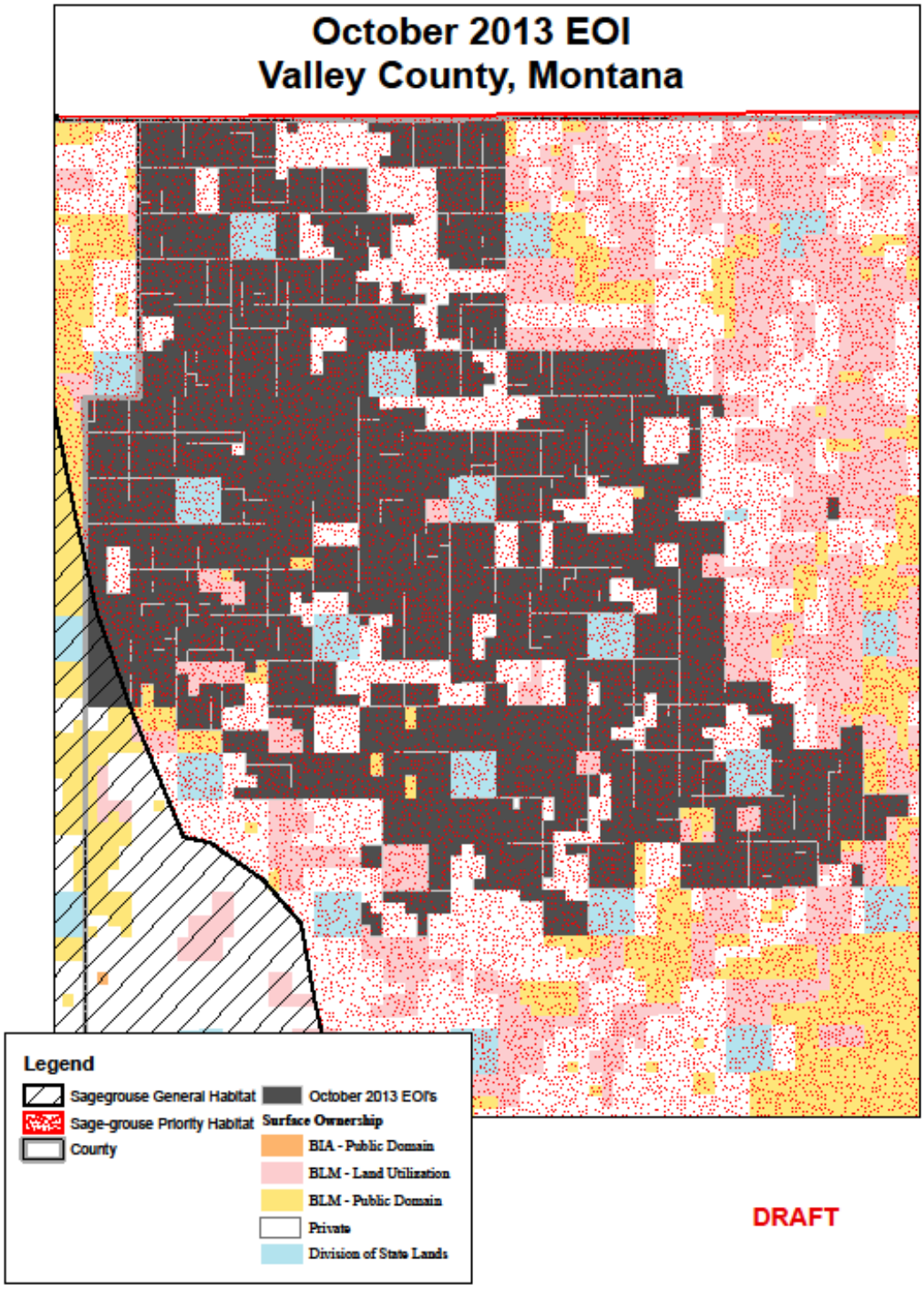
Appendix B. Lease Stipulation Key

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 on ground 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

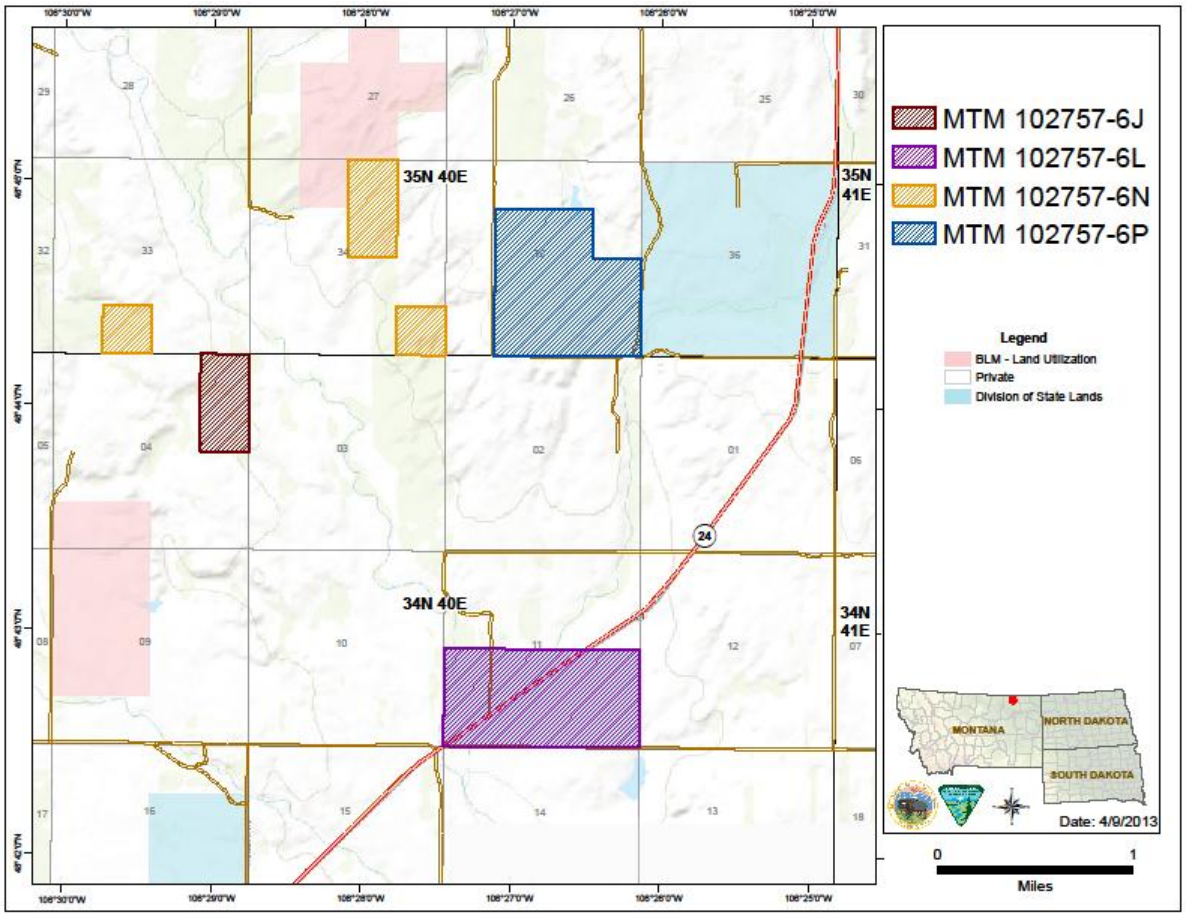
Stipulation Number	Stipulation Name/Brief Description
	the leased lands, and on request of the lessee/operator, the Agency will furnish further data on any special areas which may include: • 100 feet from the edge of the rights-of-way from highways, designated county roads and appropriate federally-owned 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 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

Stipulation Number	Stipulation Name/Brief Description
	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 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. Maps.



Map 1. All parcels nominated for 10/22/2013 lease sale.



Map 2. Four parcels not deferred from 10/22/2013 lease sale.

Appendix D: National Wetland Inventory Data, National Hydrography Dataset, and Geologic Map Information for Lease Area Parcels. (Source: USFWS, USGS & EPA, and MBMG).

Parcel	Location Description	National Wetland Inventory	National Hydrography Dataset	MTBMG Geologic Map
MTM 102757-6J	T.34N., R.40E., sec.4 E1/2NE	No wetlands present.	0.332 miles of an Unnamed Tributary to the Middle Fork of Porcupine Creek	Kfh
MTM 102757-6L				Kb , Kfh , Qsg
	T.34N., R.40E., sec.11 S1/2		0.911 miles of Alkali C reek	
	T.34N., R.40E., sec.11 NENWSE		0.095 miles of an Unnamed Tributary to Alkali Creek	
	T.34N., R.40E., sec.11 W1/2SW	0.972 acres of PABF	0.523 miles of the Middle Fork of Porcupine Creek	
MTM 102757-6N				Khc, Qsg , Kfh
	T.35N., R.40E., sec.34 NWNWNE	0.197 acres of PABFh	0.106 miles of an Unnamed Tributary to the Middle Fork of Porcupine Creek	
	T.35N., R.40E., sec.34 SESWNE		0.131 miles of an Unnamed Tributary to the Middle Fork of Porcupine Creek	
	T.35N., R.40E., sec.34 N1/2SESE		0.268 miles of an Unnamed Tributary to the Middle Fork of Porcupine Creek	
	T.35N., R.40E., sec.34 NWSESE		0.357 acres of PABFh	
	T.35N., R.40E., sec.33 N1/2SESW		0.225 miles of an Unnamed Tributary to the Middle Fork of Porcupine Creek	
MTM 102757-6P				Tsg , Tfu , Qsg , Khc
	T.35N., R.40E., sec.35 NESWNE	1.13 acres of PABFh	0.116 miles of an Unnamed Tributary to Alkali Creek	
	T.35N., R.40E., sec.35 E1/2SE		0.462 miles of an Unnamed Tributary to Alkali Creek	
	T.35N., R.40E., sec.35 E1/2SENW	0.152 acres of PEMA		