

Environmental Assessment
for
November 2010
Competitive Oil and Gas Lease Sale

WY-040-EA10-123

July 2010



The BLM's multiple-use mission is to sustain the health and productivity of the public lands for the use and enjoyment of present and future generations. The Bureau accomplishes this by managing such activities as outdoor recreation, livestock grazing, mineral development, and energy production, and by conserving natural, historical, cultural, and other resources on public lands.

BLM/WY/PL-10/036+1310

WY-040-EA10-123

Table of Contents

Affected Resources EA Checklist.....	1
1.0 INTRODUCTION	5
1.1 Background	5
1.2 Purpose and Need for the Proposed Action	5
1.3 Relationship to Statutes, Regulations, Plans or Other Environmental Analyses	5
1.4 Leasing	6
1.5 Scoping, Public Involvement and Issues	6
2.0 PROPOSED ACTION AND ALTERNATIVES.....	6
2.1 Alternative A – No Action Alternative.....	6
2.2 Alternative B – Proposed Action	6
2.3 Alternatives Considered but not Analyzed in Detail	7
3.0 AFFECTED ENVIRONMENT	7
3.1 Air Resources	8
3.2 Cultural Resources	13
3.3 Socioeconomic	13
3.4 Special Status Species	15
3.5 Threatened and Endangered Species	19
3.6 Wildlife	20
3.7 Solid Leasable (Coal)	21
4.0 ENVIRONMENTAL IMPACTS.....	21
4.1 Air Resources.....	21
4.2 Cultural Resources	22
4.3 Socioeconomics.....	23
4.4 Special Status Species	23
4.5 Threatened or Endangered Species	24
4.6 Wildlife	25
4.7 Solid Leasable (Coal)	25
5.0 CUMULATIVE IMPACTS.....	26
6.0 DESCRIPTION OF RESIDUAL IMPACTS	27
7.0 TRIBES, INDIVIDUALS, ORGANIZATIONS, or AGENCIES CONSULTED.....	27

8.0 LIST OF PREPARERS.....	27
8.1 List of Reviewers	28
9.0 REFERENCES	28
Appendix 1, November 2010 Competitive Oil and Gas Lease Sale	29
Appendix 2, Wildlife Maps.....	33
Appendix 3, Coal Maps	46
Appendix 4, Sage-grouse Screen for Oil & Gas Lease Parcels	49
Appendix 5, Wilderness Review Checklist for Oil and Gas Lease Parcels	50

Department of the Interior
Bureau of Land Management
Rock Springs Field Office
WY-040-EA10-123

November 2010 Competitive Oil and Gas Lease Sale

Affected Resources EA Checklist

Determination ¹	Resource	Rationale for Determination
PI	Air Quality	No effects associated with leasing. Effects from surface disturbing activities were analyzed in the Green River RMP/FEIS (Table 2-2, p156). New information about current air quality in the Green River Resource Area is available.
NI	Areas of Critical Environmental Concern	Effects from surface disturbing activities were analyzed in the Green River RMP/FEIS with appropriate mitigation measures attached to lease parcels for all ten of the ACECs within the resource area: Cedar Canyon, Greater Red Creek, Greater Sand Dunes, Natural Corrals, Oregon Buttes, Pine Springs, South Pass Historic Landscape, Special Status Plants, Steamboat Mountain and White Mountain Petroglyphs (Table 2.2, pp 195-207).
NP	BLM Natural Areas	
PI	Cultural Resources	Effects from surface disturbing activities were analyzed in the Green River RMP/FEIS with appropriate mitigation measures attached to lease parcels (Table 2.2 pp 157-158).
PI	Greenhouse Gas Emissions	No direct greenhouse gas emissions associated with leasing. Minimal emissions possible under expected actual development. New information on greenhouse gas emissions is available.
NP	Environmental Justice	
NP	Farmlands (Prime or Unique)	
NI	Fish and Wildlife	Effects from surface disturbing activities were

Determination¹	Resource	Rationale for Determination
	Excluding Federally Listed Species	analyzed in the Green River RMP/FEIS with appropriate mitigation measures attached to lease parcels (Table 2.2 pp 191-194 and ROD Appendix 10.1). Additionally, site specific NEPA analysis for surface disturbing activities will analyze for adverse impacts to specific wildlife species and habitat.
NI	Floodplains	Effects from surface disturbing activities were analyzed in the Green River RMP/FEIS with appropriate mitigation measures attached to lease parcels (Table 2.2 pp 186-188).
NP	Fuels/Fire Management	
NI	Geology/Mineral Resources/Energy Production	Effects from surface disturbing activities were analyzed in the Green River RMP/FEIS with appropriate mitigation measures attached to lease parcels (Table 2.2 pp 165-172 and ROD Appendix 5-2).
NI	Hydrologic Conditions	Effects from surface disturbing activities were analyzed in the Green River RMP/FEIS with appropriate mitigation measures attached to lease parcels (Table 2.2 pp 186-188)
NI	Invasive Species/Noxious Weeds	The Rock Springs Field Office follows 'Creating an Integrated Weed Management Plan, A Handbook for Owners and Managers of Lands with Natural Values' Volume 4, March 2000.
NI	Lands/Access	Effects from surface disturbing activities were analyzed in the Green River RMP/FEIS with appropriate mitigation measures attached to lease parcels (Table 2.2 pp 161-163).
NI	Livestock Grazing	Effects from surface disturbing activities were analyzed in the Green River RMP/FEIS with appropriate mitigation measures attached to lease parcels (Table 2.2 pp 163-165).
NI	Migratory Birds	The act of the proposed action (leasing) would have no affect on this resource. Site specific NEPA for proposed surface disturbing activities would further analyze effects and mitigation applied in compliance with the Migratory Bird Species-Interim Management Guidance Policy (included within Instruction Memorandum No.

Determination¹	Resource	Rationale for Determination
		2008-050)
NI	Native American Religious Concerns	Effects from surface disturbing activities were analyzed in the Green River RMP/FEIS with appropriate mitigation measures attached to lease parcels (Table 2.2 pp 157-158). Additionally, site specific NEPA analysis for surface disturbing activities provides for a Native American consultation to determine adverse impacts.
NI	Paleontology	The act of the proposed action (leasing) would have no affect on this resource. Impacts from surface disturbing activities were analyzed in the Green River RMP/FEIS (Table 2.2 pp 157-158).
NP	Rangeland Health Standards	
NI	Recreation	Effects from surface disturbing activities were analyzed in the Green River RMP/FEIS with appropriate mitigation measures attached to lease parcels (Table 2.2 pp 173-176).
PI	Socio-Economics	A socioeconomic impact analysis was completed for the Green River RMP/FEIS (Table 2.2 pp 176-179).
NI	Soils	Effects from surface disturbing activities were analyzed in the Green River RMP/FEIS with appropriate mitigation measures attached to lease parcels (Table 2.2 pp 186-188).
PI	Threatened, Endangered or Candidate Plant Species	The act of the proposed action (leasing) would have no affect on this resource. Site specific NEPA for proposed surface disturbing activities would further analyze effects and mitigation applied in compliance with the Endangered Species Act.
PI	Threatened, Endangered or Candidate Animal Species	Effects from surface disturbing activities were analyzed in the Green River RMP/FEIS. New information and policy changes are discussed further in the EA. Additionally, site specific NEPA for proposed surface disturbing activities would further analyze effects and mitigation applied in compliance with the Endangered Species Act. See Appendix 4, Sage-grouse Screen for Oil & Gas Lease Parcels.
NP	Wastes (hazardous or solid)	

Determination¹	Resource	Rationale for Determination
NI	Water Resources/Quality (drinking/surface/ground)	Effects from surface disturbing activities were analyzed in the Green River RMP/FEIS with appropriate mitigation measures attached to lease parcels (Table 2.2 pp 186-188).
NP	Wetlands/Riparian Zones	Effects from surface disturbing activities were analyzed in the Green River RMP/FEIS with appropriate mitigation measures attached to lease parcels (Table 2.2 pp 186-188).
NP	Wild and Scenic Rivers	
NP	Wilderness/WSA	
NP	Woodland/Forestry	
NI	Vegetation Excluding Federally Listed Species	Effects from surface disturbing activities were analyzed in the Green River RMP/FEIS with appropriate mitigation measures attached to lease parcels (Table 2.2 pp 182-184). In addition, based on site specific NEPA, WY Reclamation Policy would be implemented if development were initiated.
NI	Visual Resources	Effects from development were analyzed in the Green River RMP/FEIS with appropriate mitigation measures attached to lease parcels (Table 2.2 pp 184-186). In addition the VRM BMPs would be implemented based on a site specific NEPA if development were initiated.
NI	Wild Horses and Burros	Effects from development were analyzed in the Green River RMP/FEIS with appropriate mitigation measures attached to lease parcels (Table 2.2 pp 188-189).
NP	Areas with Wilderness Characteristics	No lease parcels are located in areas possessing wilderness characteristics. See Appendix 5, Wilderness Review Checklist for Oil and Gas Lease Parcels.

¹ DETERMINATION –

NP – not present in the area impacted by the proposed or alternative actions

NI – present, but adequately analyzed in RMP/FEIS for leasing actions

PI – present, not analyzed in RMP/FEIS or new information requires further analysis in the EA

November 2010 Competitive Oil and Gas Lease Sale

1.0 INTRODUCTION

EA Number: WY-040-EA-10-123

Project: 2010 November Competitive Oil and Gas Lease Sale

Legal Location: See Appendix 1, Table 1

Various Locations in Sweetwater County, Wyoming

1.1 Background

It is the policy of the Bureau of Land Management (BLM) as derived from various laws, including the Mineral Leasing Act of 1920, as amended [30 U.S.C. 181 *et seq.*] and the Federal Land Policy and Management Act of 1976, to make mineral resources available for disposal and to encourage development of mineral resources to meet national, regional, and local needs.

As required under the Energy Policy Act, the BLM Wyoming State Office conducts a quarterly competitive lease sale to sell available oil and gas lease parcels. A Notice of Competitive Lease Sale, which lists lease parcels to be offered at the auction, is published by the BLM State Office at least 45 days before the auction is held. Lease stipulations applicable to each parcel are specified in the Sale Notice. The decision as to which public lands and minerals are open for leasing and what leasing stipulations may be necessary, based on information available at the time, is made during the land use planning process. Surface management of non-BLM-administered land overlaying federal minerals is determined by the BLM in consultation with the appropriate surface management agency or the private surface owner.

In the process of preparing a lease sale the BLM State Office sends a draft parcel list to each field office where the parcels are located. Field Office staff then review the legal descriptions of the parcels to determine if they are in areas open to leasing; if appropriate stipulations have been included; if new information has become available which might change any analysis conducted during the planning process; if appropriate consultations have been conducted, and if there are special resource conditions of which potential bidders should be made aware. Once the draft parcel review is completed, an analysis is conducted under the National Environmental Policy Act (NEPA). After the NEPA analysis, the list of available lease parcels and stipulations is returned to the State Office and made available to the public through a Notice of Competitive Lease Sale (NCLS).

On rare occasions, additional information obtained after the publication of the NCLS may result in withdrawal of certain parcels prior to the day of the lease sale.

The following Environmental Assessment (EA) is for the Rock Springs Field Office parcels that total 1,714.03 acres (3 parcels) that will be offered in the November 2010 Competitive Oil and Gas Lease Sale. The EA serves to verify conformance with the approved land use plan, addresses new information, and provides the rationale for issuing parcels to be sold at the competitive lease sales.

1.2 Purpose and Need for the Proposed Action

The BLM's purpose and need for offering parcels on the November 2010 lease sale is to provide areas for the potential exploration and development of additional oil and gas resources to help meet the nation's current and expanding need for energy sources. Wyoming is a major source of natural gas for heating and electrical energy production in the United States. The sale and issuance of oil and gas leases also is needed to meet the requirements of Mineral Leasing Act and FLPMA. Oil and gas leasing provides oil and gas companies the opportunity to expand

existing areas of production and to locate previously undiscovered oil and gas resources to help meet the public's energy demands.

1.3 Relationship to Statutes, Regulations, Plans or Other Environmental Analyses

Pursuant to 40 Code of Federal Regulations (CFR) 1508.28 and 1502.21, this environmental assessment (EA) tiers to and incorporates by reference the information and analysis contained in the Green River Resource Management Plan and Final Environmental Impact Statement (RMP/FEIS) approved March 1996. The Record of Decision (ROD) for the Green River RMP was signed August 8, 1997.

According to the Green River RMP ROD, approximately 540,021 acres are closed to leasing in Greater Red Creek ACEC and the Wind River Front (eastern portion), 185,577 acres may be leased with "no surface occupancy" restrictions to protect important wildlife habitat, and cultural and recreation sites; approximately 2,775,022 acres are open to leasing with seasonal restriction to protect important wildlife habitat and 982,206 acres are available for leasing with other standard surface protection restrictions, such as controlled surface use (CSU) and special management emphasis areas that contain 1,439,441 acres with surface protections.

1.4 Leasing

Analysis as required by the NEPA of 1969, as amended (Public Law 91-90, USC 4321 et seq.) was conducted by Field Office resource specialists who relied on personal knowledge of the areas involved and/or reviewed existing databases and file information to determine if appropriate stipulations had been attached to specific parcels prior to being made available for lease.

It is unknown when, where or if future well sites or roads might be proposed. Detailed site specific analysis of individual wells or roads would occur when a lease holder submits an Application for Permit to Drill (APD).

Issuance of leases would not be in conflict with any local, county, or state plans.

1.5 Scoping, Public Involvement and Issues

Internal scoping by BLM staff was conducted for the nominated parcels to determine eligibility and any lease stipulations that may be needed. Additionally, external scoping through the Wyoming Game and Fish Department was also conducted to identify resource issues.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 Alternative A – No Action Alternative

The BLM NEPA Handbook (H-1790-1) states that for Environmental Assessments (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 the expression of interest to lease (parcel nomination) would be rejected or denied and no leases would be issued.

The No action alternative would withdraw all three lease parcels from the November 2010 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

Description of the Proposed Action

The Proposed Action would be a recommendation to the State Director to offer oil and gas leasing of **three (3)** parcels of federal minerals covering **1,714.03 acres** administered by the Rock Springs Field Office. Standard terms and conditions as well as special stipulations would apply. Lease stipulations (as required by 43 CFR 3131.3) would be added to three parcels to address site specific concerns or new information not identified in the land use planning process.

The three (3) parcels in their entirety would be included in the lease sale with the lease stipulations and lease notice. Parcel number, acreage, and location of parcels are listed in Appendix 1, Table 1, with the attached stipulations.

- 1.) WY-1011-157 Lease stipulations – T15 R98, N2, N2S2, SESW, S2SE,-S-20.
 - Threatened and Endangered or other species status species
- 2.) WY-1011-160 Lease stipulations – T15 R99, ALL,-S-26.
 - Threatened and Endangered or other species status species
- 3.) WY-1011-172 Lease stipulations – T15 R99, S-22 (N2N2),26 (NE,N2NW, SWNW), 34 SESE (EXCL 5.97 ac IN RR ROW UNDER THE ACT OF 3/3/1875)
 - Section 22 has active coal lease (#W82637)
 - Section 26 has two plugged and abandoned wells
 - Overland Trail
 - Raptors timing for Nesting
 - Crucial winter range
 - Threatened and Endangered or other species status species

Once sold, the lease purchaser has the right to use as much of the leased lands as is reasonably necessary to explore and drill for all of the oil and gas within the lease boundaries, subject to the stipulations attached to the lease (43 CFR 3101.1-4).

Oil and gas leases are issued for a 10-year period and 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 revert back to the federal government and the lease can be resold.

Drilling of wells on a lease is not permitted until the lease owner or operator secures approval of a drilling permit and a surface use plan specified in 43 CFR 3162.

2.3 Alternatives Considered but not Analyzed in Detail

No other alternatives to the proposed action were apparent which would meet the purpose and need of the proposed action. If scoping had identified any of the nominated parcels for deferral, an alternative would have been evaluated that included deferment of selected parcels.

3.0 AFFECTED ENVIRONMENT

This section describes the environment that would be affected by implementation of the alternatives described in Section 2. Aspects of the affected environment described in this section focus on relevant major resources and issues. Only those aspects of the affected environment that are potentially impacted are described in detail.

The proposed lease parcels are located in Sweetwater County, Wyoming. This environmental assessment (EA) tiers to and incorporates by reference the information and analysis contained in the Green River Resource Management Plan Final EIS (March 1996) and Record of Decision (August 1997).

Refer to the Affected Resources EA Checklist at the beginning of the document for further information about each resource that is not present or present, but adequately analyzed in the RMP/FEIS.

3.1 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 as part of the planning and decision making process.

The Environmental Protection Agency (EPA) has the primary responsibility for regulating air quality, including seven nationally regulated ambient air pollutants. Regulation of air quality is also delegated to some states. Air quality is determined by atmospheric pollutants and chemistry, dispersion meteorology and terrain, and also includes applications of noise, smoke management, and visibility. Climate is the composite of generally prevailing weather conditions of a particular region throughout the year, averaged over a series of years.

Air Quality

The area of the proposed action is considered a Class II air quality area. A Class II area allows moderate amounts air quality degradation. The primary sources of air pollution are dust from blowing wind on disturbed or exposed soil and exhaust emissions from motorized equipment.

Air quality in the areas of the proposed lease tracts is generally good. None of the potential lease tracts are located in any of the areas designated by the Environmental Protection Agency as “non-attainment areas” for any listed pollutants regulated by the Clean Air Act. Table 3-1 presents the criteria air pollutant standards and background concentrations for the Green River RMP.

**TABLE 3-1
CRITERIA AIR POLLUTANT STANDARDS AND BACKGROUND CONCENTRATIONS
FOR THE GREEN RIVER RESOURCE AREA, WYOMING**

Pollutant	Averaging Period	Wyoming Standard ($\mu\text{g}/\text{m}^3$) ¹	National Standard ($\mu\text{g}/\text{m}^3$) ¹	Background Concentration ($\mu\text{g}/\text{m}^3$) ¹
TSP	24-hour	150	-	62.5
PM-10	24-hour	150	150	9.6
	Annual	50	50	-
NO ₂	Annual	100	100	2
O ₃	1-hour	160	235	-
SO ₂	3-hour	1,300	-	-
	24-hour	260	365	9
	Annual	60	80	1
CO	1-hour ²	40,000	40,000	3,500
	8-hour ²	10,000	10,000	1,500
H ₂ S	0.5-hour ³	70	-	-
	0.5-hour ⁴	40	-	-

¹ $\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter.

² Not to be exceeded more than once per year.

³ Not to be exceeded more than twice per year.

⁴ Not to be exceeded more than twice in any 5 consecutive days.

Green House Gases

Greenhouse gases, including carbon dioxide (CO₂) and methane (CH₄), and the potential effects of GHG emissions on climate, are not regulated by the EPA under the Clean Air Act. However, climate has the potential to influence renewable and non-renewable resource management. The EPA's Inventory of U.S. Greenhouse Gas Emissions and Sinks (US GHG) found that in 2006, total US GHG emissions were over 6 billion metric tons and that total US GHG emissions have increased by 14.1 percent from 1990 to 2006. The report also noted that GHG emissions fell by 1.5 percent from 2005 to 2006. This decrease was, in part, attributed to the increased use of natural gas and other alternatives to burning coal in electric power generation.

The levels of these GHGs are expected to continue increasing. The rate of increase is expected to slow as greater awareness of the potential environmental and economic costs associated with increased levels of GHG's result in behavioral and industrial adaptations.

Some greenhouse gases such as carbon dioxide occur naturally and are emitted to the atmosphere through natural processes and human activities. Other greenhouse gases (e.g., fluorinated gases) are created and emitted solely through human activities. The primary greenhouse gases that enter the atmosphere as a result of anthropogenic activities include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated gases such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. These synthetic gases are powerful GHGs that are emitted from a variety of industrial processes.

Ongoing scientific research has identified the potential impacts of anthropogenic greenhouse gas (GHG) emissions and changes in biological sequestration due to land management activities on global climate. Through complex interactions on a regional and global scale, these GHG emissions and net losses of biological carbon sinks cause a net warming effect of the atmosphere, primarily by decreasing the amount of heat energy radiated by the earth back into space. Although GHG levels have varied for millennia, recent industrialization and burning of fossil carbon sources have caused CO₂ concentrations to increase dramatically, and are likely to contribute to overall global climatic changes. The Intergovernmental Panel on Climate Change (IPCC) recently concluded that "warming of the climate system is unequivocal" and "most of the observed increase in globally average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations."

Climate

The climate in the Resource Area is designated as a combination of Intermountain Semi- desert and Southern Rocky Mountain Steppe. The Wyoming Basins, lying entirely or partially within the boundary of the resource area, are: Green River, Great Divide, and Washakie Basins and the Rock Springs Uplift. The province is made up of high plains and plateau area and is bordered by mountain ranges and major uplifts of the Central Rocky Mountain Province. The southern end of the Wind River Range extends into the resource area on its northeast border. Surface features reflect erosion by wind and water in an arid, cold temperature environment. In some, they have been modified by faulting and volcanic activity.

Climate change refers to any significant change in measures of climate (e.g., temperature or precipitation) lasting for an extended period of time (decades or longer). Climate change may result from natural processes, such as changes in the sun's intensity; natural processes within the climate system (such as changes in ocean circulation); human activities that change the atmosphere's composition (such as burning fossil fuels) and the land surface (such as urbanization) (IPCC 2007).

Global mean surface temperatures have increased nearly 1.8°F from 1890 to 2006. Models indicate that average temperature changes are likely to be greater in the Northern Hemisphere. Northern latitudes (above 24°N) have exhibited temperature increases of nearly 2.1° F since 1900, with nearly a 1.8°F increase since 1970 alone. Without additional meteorological monitoring systems, it is difficult to determine the spatial and temporal variability and change of climatic conditions, but increasing concentrations of GHGs are likely to accelerate the rate of climate change.

Table 3.2 lists temperature, precipitation and wind speed data for the resource area. This information is derived from daily ambient measurements for 1971 through 2000. The summer period covers June, July and August and the winter period covers December, January, and February.

Table 3.2 Climate data for Rock Springs

Climate Component	Rock Springs, WY
Mean maximum summer temperatures (June, July, August)(degrees Fahrenheit)	74.5, 83.4, 80.9
Mean minimum winter temperatures (December, January, February)(degrees Fahrenheit)	11.2, 12.7, 14.4
Mean annual temperature)(degrees Fahrenheit)	42.9
Mean annual precipitation (inches)	8.7
Mean annual snowfall (inches)	13.7
Mean annual wind speed (miles per hour)	15
Prevailing wind direction	South easterly

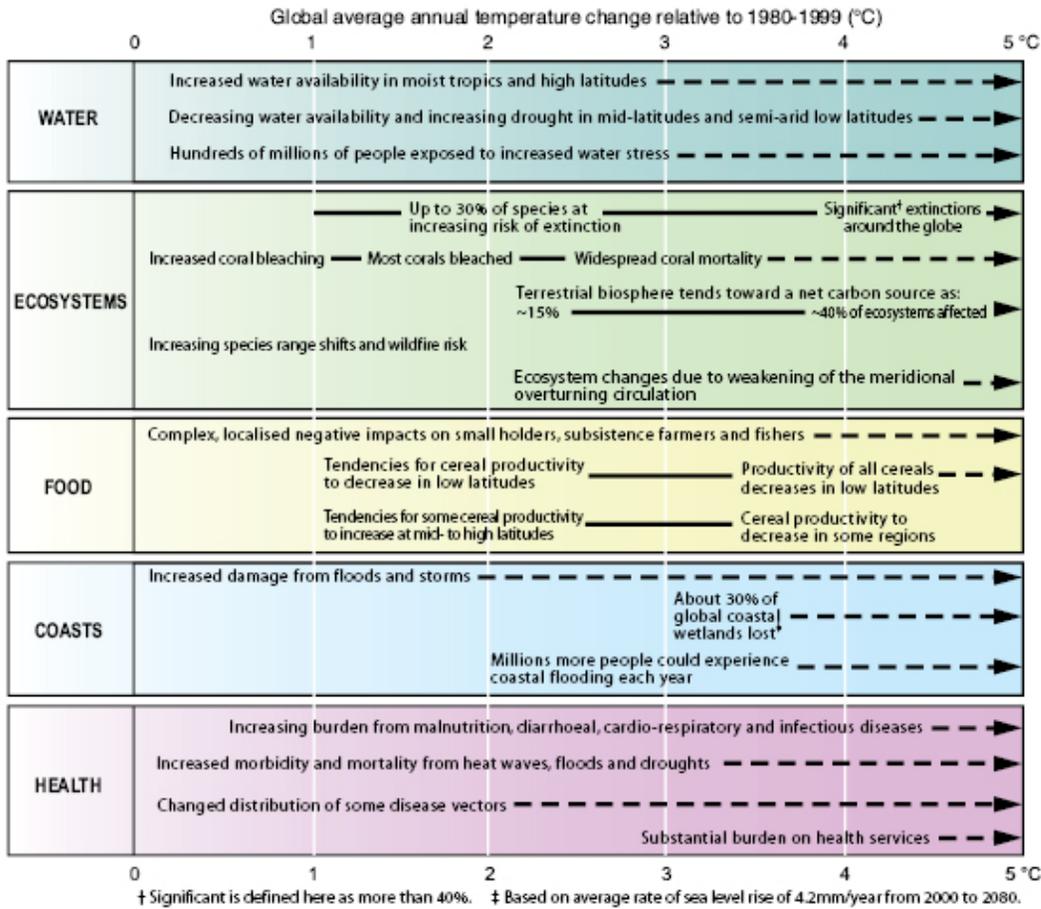
Western Regional Climate Center, wwcc@dri.edu, 7/14/2010.

Based on research compiled for the International Panel on Climate Change Fourth Assessment Report, 2007, potential effects of climate change on resources in the affected environment are likely to be varied. Figure 3.1, taken from the Fourth Assessment Report indicates varying responses of the natural world to increasing temperatures as a result of increasing global temperatures.

Within North America, the report specifically forecasts that: Warming in western mountains is projected to cause decreased snowpack, more winter flooding and reduced summer flows, exacerbating competition for over-allocated water resources; in the early decades of the century, moderate climate change is projected to increase aggregate yields of rain-fed agriculture by 5 to 20%, but with important variability among regions; major challenges are projected for crops that are near the warm end of their suitable range or which depend on highly utilized water resources; cities that currently experience heat waves are expected to be further challenged by an increased number, intensity and duration of heat waves during the course of the century, with potential for adverse health impacts and coastal communities and habitats will be increasingly stressed by climate change impacts interacting with development and pollution. Specific modeling and/or assessments of the potential effects for the Rock Springs Field Office and for the State of WY currently do not exist.

Some activities within the Planning Area generate greenhouse gas (GHG) emissions. Oil and gas development activities can generate carbon dioxide (CO₂) and NH₄. CO₂ emissions result from the use of combustion engines, while methane can be released during processing. Wildland fires also are a source of CO₂ and other GHG emissions, while livestock grazing is a source of methane. Other activities in the Resource Area with the potential to contribute to climate change include soil erosion from disturbed areas

Figure 3.1: Examples of impacts associated with global average temperature change (Impacts will vary by extent of adaptation, rate of temperature change and socio-economic pathway)



and fugitive dust from roads, which have the potential to darken snow- covered surfaces and cause faster snow melt. A description of the potential greenhouse gas emissions associated with the proposed leasing activities is included in Section 4.1.

Visibility

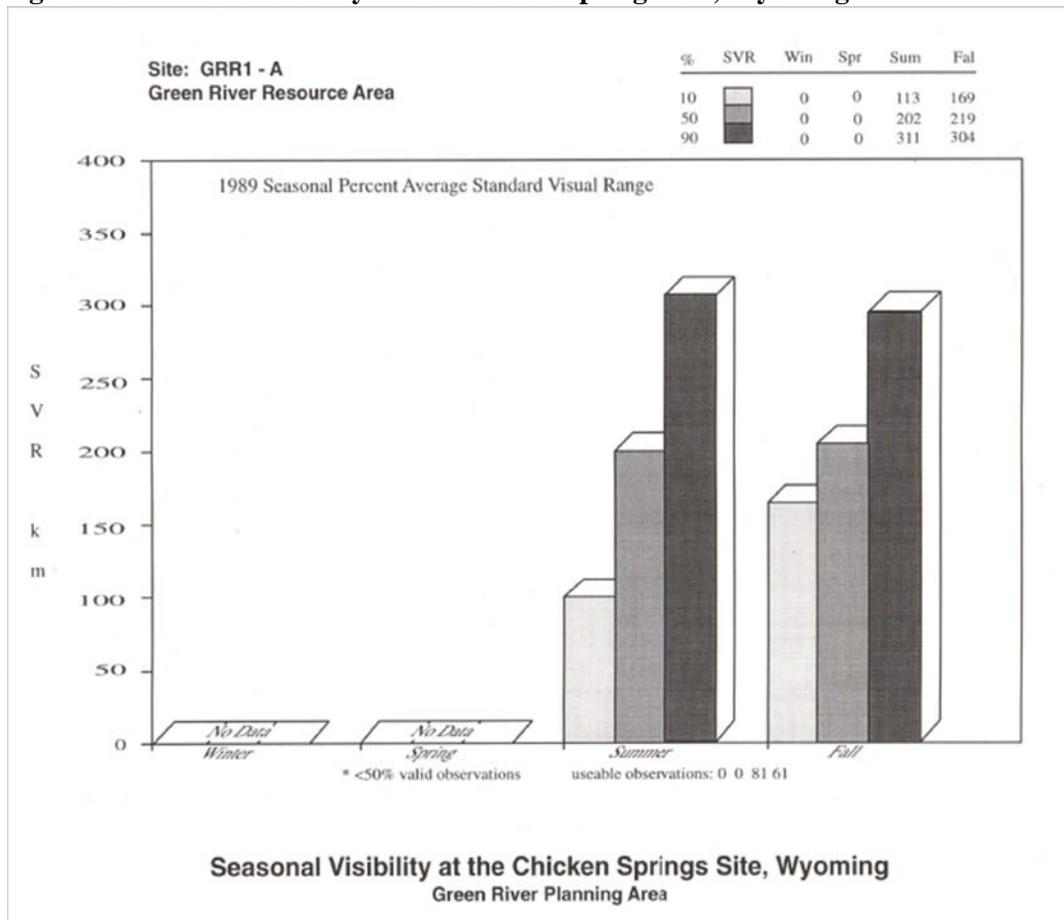
There are National Forests and wilderness areas in or adjacent to the Rock Springs Field Office. Table 3.3 lists areas designated as Class I or Class II air sheds. National Parks, Monuments and some state designated Wilderness Areas are designated as Class I. The Clean Air Act “declares as a national goal the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I Federal areas...from manmade air pollution” (42 U.S.C. § 7491(a)(1).25). Under the BLM Manual Section 8560.36, BLM-administered lands, including wilderness areas not designated as Class I, are managed as Class II, which provides that moderate deterioration of air quality associated with industrial and population growth may occur.

Table 3.3 Class I or Class II areas

Area Type	Area Name	Closest Distance to the RSFO (miles)	Direction from the RSFO	Clean Air Act Status of the Area
Wilderness Area	Bridger Wilderness Area	In	North	Class I
National Forest	Ashley National Forest	In	South	Class II
	Bridger Teton National Forest	Adjacent	Northeast	Class II

Estimates of visibility in the Green River are primarily derived from air quality and meteorological measurements taken at the Chicken Springs (near the Sand Dunes Wilderness Study Area) using photodensitometry. As can be seen in Figure 3.2, visibility in this area is generally greater than 70 miles. Fine particles are considered to be the main source of visibility degradation. With the low particulate concentrations measured in this area, very good visibility is to be expected.

Figure 3.2 Seasonal Visibility at the Chicken Springs Site, Wyoming



3.2 Cultural Resources

Once the decision is made by the lessee to develop a lease, area specific cultural records review would be done to determine if there is a need for a cultural inventory of the areas that could be affected by the subsequent surface disturbing activities. Generally, a cultural inventory will be required and all historic and archaeological sites that are eligible for listing in the National Register of Historic Places or potentially eligible to be listed would be either avoided by the undertaking or have the information in the sites extracted through archaeological data recovery prior to surface disturbance.

Lease List Notice Number 2 and Special Lease Stipulation are applied to all three parcels.

3.3 Socioeconomic

The three nominated parcels are all within Sweetwater County, Wyoming. General socioeconomic data for Sweetwater County and the State of Wyoming is presented in the following tables.

Table 3.3.1 shows changes in population for each county between 1980 and 2000.

Table 3.3.1: Population by County, 1980-2000

Area	Population in 1980	Population in 2000	Change 1980-2000	Average Annual Change 1980-2000
Sweetwater County	41,723	43,440	4%	0.2%
Wyoming	333,795	506,541	52%	1.2%
United States	203,798,722	295,895,897	45%	1.1%

Sources: Headwaters Economics 2007a, 2007b, 2007c, 2007d; BEA 2008, Green River RMP/FEIS, March 1996.

Table 3.3.2 shows average income per capita for Sweetwater County along with the median value for all counties in the United States (i.e., the point at which half the counties in the United States have a higher per capita income and half have a lower per capita income).

Table 3.3.2: Average and Median Income

Area	Per Capita Income (2005)	Average Earnings Per Job (2005)	Median Household Income (1999)
Sweetwater County	\$19,575.00	\$n/a	\$46,537.00
Median of United States counties ¹	\$26,371	\$30,269	n/a

Source: U.S. Census Bureau, 2000. "Profile of Economic Characteristics, 2000"

¹. Represents the median for all counties in the United States (not the median value for the United States as a whole).

In Table 3.3.3, these nondisclosures affect available information on agricultural services and forestry and fishing activities in Sweetwater County, as well as available information on several other sectors, as indicated in the table notes.

Table 3.3.3: Earnings by Place of Work, 2000

Item / Sector	Sweetwater County	Wyoming	United States
Total personal income (\$ million)	n/a	\$20,846	\$10,968,393
Dividends, interest, and rent as a proportion of total personal income	n/a	23%	17%
Earnings by place of work (\$ million)	n/a	\$15,221	\$8,432,719
Percent of total earnings by place of work (by sector)			
Farming, fishing, logging, mining and related activities	14.8%	1%	1%
Construction	8.6%	9%	7
Manufacturing	8.2%	5%	12%
Wholesale trade	2.2%	4%	5%
Retail trade	11.9	6%	6%
Transportation, utilities and warehousing	9.6%	6%	4%
Information	1.5%	1%	4%
Finance, insurance, real estate and rental/leasing	3.8%	6%	10%
Professional and technical services, management of companies, enterprises, administrative and waste services	18.2	8%	16%
Educational services and Health care and social assistance	8.8%	6%	10%
Arts, entertainment, recreation, accommodation and food services	8.8	5%	4%
Other services, except public administration	4.0%	3%	3%
Government and government enterprises	17.7%	22%	16%

Source: U.S. Census Bureau, 2000."Profile of Economic Characteristics:2000"; n/a = Not available.

3.4 Special Status Species

Instruction Memorandum No. WY-2001-040 lists the BLM Wyoming sensitive species and management policy. The policy emphasizes planning, management, and monitoring of sensitive species and directs management of these species to avoid or minimize adverse impacts. The policy goals of this instruction memorandum are to:

- Maintain vulnerable species and habitat components in functional BLM ecosystems
- Ensure sensitive species are considered in land management decisions
- Prevent the need for species listing under the Endangered Species Act 1973
- Prioritize needed conservation work with an emphasis on habitat.

This policy was updated on March 25, 2010 with IM No. WY-2010-027 which provides an updated list of recognized Sensitive Species (see Table 3.4).

Table 3.4. BLM Wyoming Sensitive Wildlife Species

Common Name	Scientific Name	Habitat
Mammals		
Grizzly Bear	<i>Ursus arctos</i>	Remote areas in the Rocky Mountains
Long-eared myotis	<i>Myotis evotis</i>	Coniferous forests; roosts in caves, buildings, or mines near a body of water
Fringed myotis	<i>Myotis thysanodes</i>	Elevations less than 7,500 feet in forests and shrublands
Spotted bat	<i>Euderma maculatum</i>	Desert and coniferous habitats
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	Coniferous forest; desert shrubland
Pygmy rabbit	<i>Brachylagus idahoensis</i>	Big, dense sagebrush
White-tailed prairie dog	<i>Cynomys leucurus</i>	Plains
Wyoming pocket gopher	<i>Thomomys clusius</i>	Dry ridge tops; gravelly, loose soil; greasewood
Idaho pocket gopher	<i>Thomomys idahoensis</i>	Stony, shallow soil
Swift fox	<i>Vulpes velox</i>	Shortgrass prairie
Avian		
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Streams and rivers with trees
Golden Eagle	<i>Aquila chrysaetos</i>	Mountainous or hilly terrain near open areas for hunting.
Ferruginous hawk	<i>Buteo regalis</i>	Basin-prairie shrub, grassland, rock outcrops
Peregrine falcon	<i>Falco peregrinus</i>	Tall cliffs
Greater sage-grouse	<i>Centrocercus urophasianus</i>	Basin-prairie shrub, mountain-foothill shrub

Common Name	Scientific Name	Habitat
Long-billed curlew	<i>Numenius americanus</i>	Grasslands, plains, foothills, wet meadows
Burrowing owl	<i>Athene cunicularia</i>	Grasslands, basin-prairie shrub
Sage thrasher	<i>Oreoscoptes montanus</i>	Basin-prairie shrub, mountain-foothill shrub
Loggerhead shrike	<i>Lanius ludovicianus</i>	Basin-prairie shrub, mountain-foothill shrub
Brewer's sparrow	<i>Spizella breweri</i>	Basin-prairie shrub
Sage sparrow	<i>Amphispiza billineata</i>	Basin-prairie shrub, mountain-foothill shrub
Mountain Plover	<i>Chadrius montanus</i>	Areas of low vegetation
Greater Sage-grouse	<i>Centrocercus europhasianus</i>	Basin-prairie shrub, mountain-foothill shrub
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Open woodlands, streamside willow and alder groves
Trumpeter Swan	<i>Cygnus buccinator</i>	Lakes, ponds, rivers
White-faced Ibis	<i>Plegadis chihi</i>	Marshes, wet meadows
Amphibians		
Great Basin Spadefoot Toad	<i>Spea intermontana</i>	Springs; seeps; permanent and, temporary waters
Columbia Spotted Frog	<i>Rana luteiventris</i>	Ponds, sloughs, small streams
Boreal Toad	<i>Bufo boreas boreas</i>	Pond margins, wet meadows, riparian areas
Northern Leopard Frog	<i>Rana pipiens</i>	Beaver ponds, permanent water in plains and foothills
Reptiles		
Midget Faded Rattlesnake	<i>Crotalus viridis concolor</i>	Mountain foothills shrub, rock outcrop

Source: BLM Wyoming Sensitive Species Policy and List, IM No. WY-2001-040, April 9, 2001, and Update of the Bureau of Land Management, Wyoming, Sensitive Species List IM No. WY-2010-027, March 25, 2010.

Grizzly Bear

There are currently no grizzly bears inhabiting the lease parcel areas. The BLM has determined that there are no impacts to grizzly bears from the proposed actions and they will not be discussed further.

Sensitive Bat Species

The project area contains potential habitat for the long-eared myotis (*Myotis evotis*), Townsend's big-eared bat (*Corynorhinus townsendii*), Fringed myotis (*Myotis thysanodes*), and spotted bat (*Euderma maculatum*). Bats as well as passerine birds can be attracted to open water pits however with the practice of netting pits in use any potential impacts to the bat populations should be prevented. Therefore there are no anticipated effects to bat species from the proposed actions and these species will not be discussed further.

Pygmy Rabbit

The lease parcels likely contains habitat for the pygmy rabbit (*Brachylagus idahoensis*). All development is preceded by a site visit during which the area is assessed and development locations are adjusted to minimize habitat loss. Therefore, there are no anticipated effects to pygmy rabbits from the proposed actions and this species will not be discussed further.

White-tailed Prairie Dog

The lease parcels likely contain habitat for the white-tailed prairie dog (*Cynomys leucurus*). All development is preceded by a site visit during which the area is assessed and development locations are adjusted to minimize habitat loss. Therefore, there are no anticipated effects to white-tailed prairie dog from the proposed actions and this species will not be discussed further.

Wyoming Pocket Gopher

The lease parcels are documented to have a high probability of Wyoming pocket gopher (*Thomomys clusius*) being present. All development is preceded by a site visit during which the area is assessed and development locations are adjusted to minimize habitat loss. Therefore, there are no anticipated effects to Wyoming pocket gopher from the proposed actions and this species will not be discussed further.

Idaho Pocket Gopher

There are no known occurrences for the Idaho pocket gopher (*Thomomys idahoensis*) within the lease parcels. There are no anticipated effects to Idaho pocket gopher from the proposed actions and this species will not be discussed further.

Swift Fox

There are no known occurrences of swift fox (*Vulpes velox*) within in the lease parcels. There are no anticipated effects to Swift Fox from the proposed actions and this species will not be discussed further.

Bald Eagle

Bald eagles (*Haliaeetus leucocephalus*) are found primarily along rivers and inland lakes, where their nests are usually located in large coniferous or deciduous trees. There are no large rivers and no known nesting or roosting sites in, or near the lease parcels, therefore there will be no impacts to the bald eagle and this species will not be discussed further.

Golden Eagle

Golden eagles (*Aquila chrysaetos*) are found in a range of habitats including mountainous or hilly terrain, as well as valleys in the west. They also require open country for hunting and typically nest on cliffs or occasionally in trees if available. All development is preceded by a site visit during which the area is assessed and development locations are adjusted to minimize habitat loss. If during a site visit an active golden eagle nest is identified then a timing limitation stipulation will be placed on the parcel to prevent disruption of nesting behavior. Therefore, there are no anticipated effects to golden eagles from the proposed actions and this species will not be discussed further.

Ferruginous Hawk

Ferruginous hawks (*Buteo regalis*) are found in basin-prairie shrub and grassland habitats and typically nest on rock outcrops. All development is preceded by a site visit during which the area is assessed and development locations are adjusted to minimize habitat loss. If during a site visit an active ferruginous hawk nest is identified then a timing limitation stipulation will be placed on the parcel to prevent disruption of nesting behavior. Therefore, there are no anticipated effects to ferruginous hawks from the proposed actions and this species will not be discussed further.

Peregrine Falcon

Peregrine falcons (*Falco peregrinus*) typically nest on tall cliffs. All development is preceded by a site visit during which the area is assessed and development locations are adjusted to minimize habitat loss. If during a site visit an active Peregrine falcon nest is identified then a timing limitation stipulation will be placed on the parcel to prevent disruption of nesting behavior. Therefore, there are no anticipated effects to ferruginous hawks from the proposed actions and this species will not be discussed further.

Greater Sage-Grouse

See description under Threatened, Endangered, and Candidate Species.

Long-billed Curlew

The long billed curlew (*Numenius americanus*) typically lives in grasslands and marshes. There is no known nesting habitat for this species within the proposed lease parcels.

Burrowing Owl

Burrowing owls (*Athene cunicularia*) utilize burrows excavated by other animals, most typically prairie dogs. All development is preceded by a site visit during which the area is assessed and development locations are adjusted to minimize habitat loss. If during a site visit an active burrowing owl nest is identified then a timing limitation stipulation will be placed on the parcel to prevent disruption of nesting behavior. Therefore, there are no anticipated effects to burrowing owls from the proposed actions.

Migratory Birds (Sagebrush Obligates)

The project area contains habitat for the sage thrasher (*Oreoscoptes montanus*), loggerhead shrike (*Lanius ludovicianus*), Brewer's sparrow (*Spizella breweri*) and sage sparrow (*Amphispiza billineata*). These species are heavily dependent upon sagebrush and associated understory for nesting and foraging habitat.

Mountain Plover

See description under Threatened, Endangered, and Candidate Species.

Great Basin Spadefoot Toad

The Great Basin spadefoot toad (*Spea intermontana*) prefers sagebrush communities below 6,000 feet in elevation, although they have been found at elevations of 9,200 feet. Spadefoots require loose soil to burrow. All development is preceded by a site visit during which the area is assessed and development locations are adjusted to minimize habitat loss. Therefore, there are no anticipated effects to mountain plovers from the proposed actions.

Northern Leopard Frog

The northern leopard frog (*Rana pipiens*) can be found in or near permanent water in the plains, foothills, and montane zones. They range to 11,000 feet in the mountains. Their preferred habitats are swampy cattail marshes on the plains, and beaver ponds in the foothills and montane zones. In Wyoming, this species is common throughout the state except in Teton County, Park County, and Yellowstone National Park. All development is preceded by a site visit during which the area is assessed and development locations are adjusted to minimize habitat loss. Therefore, there are no anticipated effects to mountain plovers from the proposed actions.

Midget Faded Rattlesnake

Midget faded rattlesnakes (*Crotalus viridis concolor*) are not known to inhabit these parcels. Therefore, there are no anticipated effects to Midget faded rattlesnakes from the proposed actions.

3.5 Threatened and Endangered Species

This section describes the Threatened, Endangered, and Candidate species that are found within the BLM Rock Springs Field Office boundary (Table 3-5).

Table 3-5. Threatened, Endangered, and Candidate Wildlife Species that May Occur in the Parcels

Common Name	Scientific Name	Federal Status	Occurrence in Assessment Area
Black-footed ferret	<i>Mustela nigripes</i>	Endangered	No known potential habitat
Colorado River species	See description below	Endangered and Threatened	Water depletion used in road or pipeline development
Greater Sage-Grouse	<i>Centrocercus urophasianus</i>	Candidate	Potential habitat, no identified high use habitat.
Mountain Plover	<i>Charadrius montanus</i>	Proposed Threatened	Moderate potential habitat

Black-footed ferret

The area has been surveyed and block cleared for black-footed ferrets. Therefore, there is no potential for the black-footed ferret and results in a “no effects” determination for this species. This species will not be given further consideration.

Gray Wolf

The gray wolf (*Canis lupus*) historically occupied nearly all habitat types in North America including those within the allotment. Under current federal management as an experimental population by the U.S. Fish and Wildlife Service (USFWS), any wolves occurring in the allotment would be removed if they cause conflicts with other land management activities (primarily grazing). Sightings of wolves in and near this area are rare and thought to be dispersing wolves looking for a territory. The BLM has determined that the proposed actions “will not jeopardize” the existence of the gray wolves and they will not be discussed further.

Colorado River Species

Four fish species in the Colorado River system are federally listed as endangered. They are the bonytail chub (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*), humpback chub (*Gila cypha*), and the razorback sucker (*Xyrauchen texanus*). Though they currently exist only downstream from the Salt Wells allotment, water from the Green River system affects the downstream habitat for these species.

Greater Sage-Grouse

Greater sage-grouse (*Centrocercus urophasianus*) populations have drastically declined range wide as compared to their historic populations. In response to the declining populations the U.S. Fish and Wildlife Service reviewed several petitions to list the species under the Endangered Species Act (ESA). The U.S. Fish and Wildlife Service found the listing of this species to be warranted but precluded, which results in the sage-grouse being a Candidate Species.

In order to decrease the likelihood of species listing the Governor of Wyoming has identified high value habitats for sage-grouse and labeled those habitats as Core Area. This Core Area is recognized is vital breeding and brood rearing habitat for the continuance of current sage-grouse populations.

The parcels being considered for lease contain no Core Area habitat. This area is also not known to be a sage-grouse winter concentration area. Therefore, there are no anticipated effects to sage-grouse from the proposed actions.

Mountain Plover

The mountain plover (*Chadrius montanus*) needs areas with flat terrain and low growing vegetation. Review of the proposed parcels using a habitat probability model (provided by Wyoming Natural Diversity Database), shows moderate suitable nesting habitat for this species. All development is preceded by a site visit during which the area is assessed and development locations are adjusted to minimize habitat loss. If during a site visit an active mountain plover nest is identified then a timing limitation stipulation will be placed on the parcel to prevent disruption of nesting behavior. Therefore, there are no anticipated effects to mountain plovers from the proposed actions.

3.6 Wildlife

The objectives for management of wildlife and fish habitat are to: 1) maintain, improve, or enhance the biological diversity of plant and wildlife species while ensuring healthy ecosystems; and 2) restore disturbed or altered habitat with the objective to attain desired native plant communities, while providing for wildlife needs and soil stability.

Red-tailed Hawk

Red-tailed hawks (*Buteo jamaicensis*) are found in a range of habitats including woods, plains, prairie groves as well as desert in the west. They also require open country for hunting and typically prey on rodents. All development is preceded by a site visit during which the area is assessed and development locations are adjusted to minimize habitat loss. If during a site visit an active red-tailed hawk nest is identified then a timing limitation stipulation will be placed on the parcel to prevent disruption of nesting behavior. Therefore, there are no anticipated effects to red-tailed hawks from the proposed actions.

American Kestrel

American kestrels (*Falco sparverius*) are found in open country as well as developed areas, and they typically prey on insects, reptiles, small mammals and occasionally small birds. All development is preceded by a site visit during which the area is assessed and development locations are adjusted to minimize habitat loss. If during a site visit an active American kestrel nest is identified then a timing limitation stipulation will be placed on the parcel to prevent disruption of nesting behavior. Therefore, there are no anticipated effects to American kestrels from the proposed actions.

Prairie falcons (*Falco mexicanus*) are found in dry open country and prairie habitats. All development is preceded by a site visit during which the area is assessed and development locations are adjusted to minimize habitat loss. If during a site visit an active prairie falcon nest is identified then a timing limitation stipulation will be placed on the parcel to prevent disruption of nesting behavior. Therefore, there are no anticipated effects to prairie falcon from the proposed actions.

Pronghorn Antelope

Pronghorn antelope (*Antilocapra americana*) are found in grasslands, grassy brushlands and shrub steppe habitats. During the winter months antelope congregate in areas which provide thermal shelter and shallower snow depths, where food is more readily accessible. In the Rock Springs Field Office these areas as identified by the Wyoming Game and Fish Department, are protected from disruptive activities between November 15 and April 30th.

3.7 Solid Leasable (Coal)

The objective for management of the federal coal resources in the planning area is to provide for both short- and long-range development of federal coal, in an orderly and timely manner, consistent with the policies of the federal coal management program, environmental integrity, national energy needs, and related demands. With appropriate limitations and mitigation requirements for the protection of other resource values, all BLM-administered public lands and Federal coal lands in the Green River planning area, except for those lands identified as closed, are open to coal resource inventory and exploration to help identify coal resources and their development potential (Map 19 of the GRRMP) (see Appendix 3).

One parcel has an existing coal lease in place:

WY-1011-172 Lease stipulations – T15 R99, S-22 (N2N2),26 (NE,N2NW, SWNW), 34 SESE (EXCL 5.97 ac IN RR ROW UNDER THE ACT OF 3/3/1875)

- Section 22 has active coal lease (#W82637)
- Section 26 has two plugged and abandoned wells

4.0 ENVIRONMENTAL IMPACTS

4.1 Air Resources

Alternative A: No Action Alternative

No impacts to air resources would be expected beyond those already authorized because no new lease parcels would be offered and issued.

Alternative B: Proposed Action

Leasing the subject tracts would have no direct impacts to air quality. Any potential effects to air quality from sale of lease parcels would occur at such time that the leases were developed. Over the last 10 years, the leasing of Federal oil and gas mineral estate in Rock Springs Field Office has resulted in an average of 65 wells drilled on federal leases annually.

Potential impacts of development could include increased air borne 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 GHG and volatile organic compounds during drilling or production activities. The amount of increased emissions cannot be quantified at this time since it is unknown 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 will also vary according to the characteristics of the geologic formations from which production occurs.

The reasonable and foreseeable development scenario developed for the Green River RMP demonstrated 65 wells would be drilled annually for Federal minerals. The petroleum resources specific to these leases in the Proposed Action are not known whether they are gas or oil or a combination thereof. Oil wells are on a tighter spacing than gas wells, therefore it is unknown the specific number of wells that would be drilled as a result of issuing the leases. However, the RFD takes these assumptions into account, and on a Field Office wide basis, is still valid. Current APD permitting trends within the field office confirm that these assumptions are still accurate.

This level of exploration and production, as well as issuing the leases in the proposed action, would contribute a small incremental increase in overall hydrocarbon emissions, including GHGs, released into

the planet's atmosphere. When compared to total national or global emissions, the amount released as a result of potential production from the proposed lease tracts would not have a measurable effect.

The assessment of GHG emissions and climate change is in its formative phase. It is currently not feasible to know with certainty the net impacts from the proposed action 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. When further information on the impacts to climate change is known, such information would be incorporated into the BLM planning and NEPA documents as appropriate.

4.1.1 Mitigation

The EPA's inventory data breaks down the total U.S. sources of GHG gases by major categories that include "Natural Gas Systems" and "Petroleum Systems." The inventory lists the contributions of natural gas and petroleum systems to total CO₂ and CH₄ emissions (natural gas and petroleum systems do not produce noteworthy amounts of any of the other greenhouse gases). For Natural Gas Systems, the EPA categorizes emissions from distinct stages of the larger category of natural gas systems. These stages include field production, processing, transmission and storage, and distribution. The BLM has regulatory jurisdiction only over field production. Petroleum Systems sub-activities include production field operations, crude oil transportation, and crude oil refining. Within the petroleum systems emission categories, the BLM has authority to regulate production field operations.

The BLM regulatory jurisdiction over field production of Natural Gas Systems and production field operations of Petroleum Systems has resulted in the development of "Best Management Practices (BMPs)" designed to reduce impacts to air quality by reducing all emissions from field production and operations. The future development of the lease parcels may be subject to appropriate conditions of approval (COAs) to reduce or mitigate GHG emissions. This may occur at the project level through additional analysis. Specific measures developed at the project stage would be incorporated as COAs in the approved APD, which are binding on the operator. Typical measures may include: flare hydrocarbon and gases at high temperatures in order to reduce emissions of incomplete combustion; water dirt roads during periods of high use in order to reduce fugitive dust emissions; require that vapor recovery systems be maintained and functional in areas where petroleum liquids are stored; and re-vegetate areas of the pad not required for production facilities to reduce the amount of dust from the pads.

4.2 Cultural Resources

Alternative A: No Action Alternative

No impacts to cultural resources would be expected because no new lease parcels would be offered and issued.

Alternative B: Proposed Action

While the act of leasing a parcel would produce no impacts, subsequent development of the lease could have impacts on archaeological and paleontological resources. Required archaeological surveys would be conducted upon all subsequent actions that are expected to occur from the lease sale to avoid disturbing cultural and/or paleontological sites.

4.2.1 Mitigation

Avoidance measures would be imposed where cultural resources are impacted. The BLM standard stipulation states if any archeological or historical materials are discovered during construction the operator must immediately halt surface disturbing activities and notify the BLM. The determination of appropriate management actions, including possibly avoidance or mitigation actions will be made by the BLM in consultation with the Wyoming State Historic Preservation Office and the Advisory Council on Historic Preservation, pursuant to 36 CFR 800.

Parcel WY-1011-172 has the following stipulation:

- (1) Surface Occupancy or use within ¼ mile or visual horizon of the trail, whichever is closer, may be restricted or prohibited unless the operator and surface managing agency arrive at an acceptable plan for mitigation of anticipated impacts;
- (2) as mapped by Rock Springs Field Office GIS database;
- (3) Protecting cultural and scenic values of the Overland Trail.

4.3 Socioeconomics

Alternative A: No Action Alternative

Under this alternative, no leases would be issued and no development under those leases would occur. As primarily rural communities that rely heavily on energy development revenue and agricultural uses, the communities in the leasing areas are likely to be negatively impacted by loss of potential revenue from subsequent development of these parcels. However, the pace of development has historically been slower than that in many areas of the state, with approximately 75 Applications for Permits to Drill (APD) approved per year. The projection under the latest Reasonable Foreseeable Development scenario is for approximately 65 wells per year. Because there is demand for oil and gas, it is expected that if the leases are not issued the parcels will be re-nominated and leased in the future under more stringent stipulations. This would still allow for development of leases, and generation of revenue from Federally-managed minerals. Therefore, it is an assumption that the No Action Alternative (no lease option) may result in a slight reduction in domestic production of oil and gas. This would likely result in reduced Federal and State royalty income, and the potential for Federal land to be drained by wells on adjacent private or state land.

Alternative B: Proposed Action

Under this alternative, three leases would be issued. This would result in increased revenue for the Federal and State governments. Development of the issued leases would proceed consistent with the Reasonable Foreseeable Development report, at approximately 65 wells per year. Specific economic impacts would be identified in the NEPA document supporting the Application for Permit to Drill, when a more accurate analysis is possible based on the speculative nature of leasing in relation to development.

4.4 Special Status Species

Alternative A: No Action Alternative

No impacts to special status species would be expected beyond those already authorized because no new lease parcels would be offered and issued.

Alternative B: Proposed Action

There are no impacts to special status species from the offering and issuance of the three lease parcels. Subsequent lease development could impact wildlife due to surface disturbance and habitat fragmentation. The magnitude of impacts would depend on the exact location and time of development in

relation to the affected wildlife species and habitat. These impacts would be analyzed on a site specific basis prior to development.

4.4.1 Mitigation

Stipulations and conditions of approval would be applied at the APD level to minimize sensitive species impacts. Site specific NEPA analysis will be conducted for all surface disturbances and appropriate mitigation identified, if necessary.

The Wildlife maps in Appendix 2 show the overlapping resources for the stipulations. Parcel WY-1011-172 has the following Timing Limitation stipulation for golden eagles:

(1) February 1 to July 31, (2) as mapped on the Rock springs Field Office GIs database; (3) protecting nesting Raptors.

4.5 Threatened and Endangered or Other Status Species

Alternative A: No Action Alternative

No impacts to threatened and endangered species would be expected beyond those already authorized because no new lease parcels would be offered and issued.

Alternative B: Proposed Action

There are no impacts to threatened and endangered species from the offering and issuance of the three lease parcels. Subsequent lease development could impact species due to surface disturbance and habitat fragmentation. The magnitude of impacts would depend on the exact location and time of development in relation to the affected wildlife species and habitat. These impacts would be analyzed on a site specific basis prior to development.

4.5.1 Mitigation

Stipulations and conditions of approval would be applied at the APD level to minimize threatened and endangered species impacts. Site specific NEPA analysis will be conducted for all surface disturbances and appropriate mitigation identified, if necessary.

Parcel WY-1011-172 has the following stipulation to protect threatened and endangered or other status species:

(1) Lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. The BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. The BLM will not approve any ground-disturbing activity that may affect any such species or critical habitat until it completes its obligations under applicable requirements or the Endangered Species as amended, 16 U.S.C., 1531 et seq., including completion of any required procedure for conference or consultation; (2) as mapped on the Rock Springs Field Office GIS database; and (3) protecting Species affected by water depletions from the Colorado River System.

4.6 Wildlife

Alternative A: No Action Alternative

No impacts to the wildlife (Antelope and Raptors) would be expected beyond those already authorized because no new lease parcels would be offered and issued.

Alternative B: Proposed Action

There are no impacts to Wildlife (Antelope and/or Raptors) from the offering and issuance of the lease parcels. Proper mitigation will be used to minimize any impacts to the resource.

Mitigation

Stipulations and conditions of approval would be applied at the APD level to minimize wildlife impacts. Site specific NEPA analysis will be conducted for all surface disturbances and appropriate mitigation identified, if necessary. The Wildlife maps in Appendix 2 show the overlapping resources for the stipulations.

Parcel WY-1011-172 has the following Timing Limitation stipulation for golden eagles:

- (1) Feb 1 to Jul 31; (2) as mapped on the Rock Springs Field Office GIS database; (3) protecting nesting Raptors.

Parcel WY-1011-172 has the following Timing Limitation stipulation for crucial winter range for antelope:

- (1) Nov 15 to Apr 30; (2) as mapped on the Rock Springs Field Office GIS database; (3) protecting big game on crucial winter range.

4.7 Solid Leasable (Coal)

Alternative A: No Action Alternative

No impacts to the coal lease would be expected beyond those already authorized because no new lease parcels would be offered and issued.

Alternative B: Proposed Action

There are no impacts to coal from the offering and issuance of the lease parcels. Due to an existing coal lease (W82637), the lease parcel WY-1011-172 may be subject to additional controlled surface use (CSU) Coal/Oil and Gas Conflict Special Lease Stipulations for protecting the first in time valid existing rights of the lessee.

4.7.1 Mitigation

Appropriate mitigation requirements for the protection of other resource values, all BLM-administered public lands and Federal coal lands in the Green River planning area, except for those lands identified as closed, are open to coal resource inventory and exploration to help identify coal resources and their development potential (Map 19 of the GRRMP) (see Appendix 3).

Parcel WY-1011-172 has the following CSU Coal/Oil and Gas Conflict Special Lease Stipulation:

- (1) Surface use or occupancy shall not be allowed by oil and gas lessee(s), operating rights holder(s), and/or oil and gas operator(s) on the is Federal oil and gas lease to conduct any oil and gas operation, including drilling for, removing, or disposing of oil and gas contained in the Federal coal lease W82637 unless a plan for mitigation of anticipated impacts is developed between the oil and gas and the coal mapped on the Rock Springs Field Office GIS database;

(3) For the lessee, the Authorized Officer reserves the right to alter or modify any oil and gas operations on the lands described in this lease ensuring: a.) the orderly development of the coal resource by surface and/or underground mining methods; b.) Coal mine worker safety; and/or c.) coal production rates or recovery of the coal resource. The oil and gas lessee(s), operating rights holder(s), and/or oil and gas operator(s) of the Federal oil and gas lease shall not hold the United States as lessor, coal lessee(s), sub lessee(s), and/or coal operator(s) liable for coal bed methane gas, caused by coal exploration or mining operations conducted on Federal coal lease W82637.

5.0 CUMULATIVE IMPACTS

There are approximately 2,688 Federal producing wells in the Rock Springs Field Office; there are no producing coal bed methane production wells.

Analysis of cumulative impacts for reasonably foreseeable development (RFD) of oil and gas wells on public lands in the Rock Springs Field Office is presented in the Green River RMP/FEIS (1996). Potential development of all available federal minerals in the field office, including those in the proposed lease parcels, was included as part of the analysis.

As described in the analysis of environmental consequences, the proposed action and/or the alternative may contribute to the effects of climate change to some extent through GHG emissions. However, it is not currently possible to associate any of these particular actions with the creation of any specific climate-related environmental effects. The lack of scientific tools designed to predict climate change at regional or local scales limits the ability to quantify potential future impacts.

The assessment of greenhouse gas (GHG) emissions and climate change is still in its formative phase; therefore, it is not yet possible to know with confidence the net impact on climate. However, the Intergovernmental Panel on Climate Change (IPCC 2007) recently concluded that “warming of the climate system is unequivocal” and “most of the observed increase in globally average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic [man-made] greenhouse gas concentrations.” As the temperatures of the land and sea change, environmental factors such as weather patterns, sea levels, precipitation rates, the timing of the seasons, desert distribution, forest cover, and ocean salinity will also change. These changes influence the world’s climate systems and will have different impacts to different areas. Some agricultural regions may become more arid while others become wetter; some mountainous areas will experience greater summer precipitation, yet experience disappearing snowpack.

The average number of oil and gas wells drilled annually in the Field Office and probable GHG emission levels, when compared to the total GHG emission estimates from the total number of Federal oil and gas wells in the State, represent an incremental contribution to the total regional and global GHG emission levels. This incremental contribution to global GHG gases cannot be translated into incremental effects on climate change globally or in the area of these site-specific actions. As oil and gas and natural gas production technology continues to improve in the future, one assumption is that it may be feasible to further reduce GHG emissions.

Regarding the linkage between climate change-related warming and associated impacts, an assessment of the IPCC states that difficulties remain in attributing observed temperature changes at smaller than continental scales. Therefore, it is currently beyond the scope of existing science to predict climate change on regional or local scales resulting from specific sources of GHG emissions.

Significant uncertainties remain with respect to the estimates of the current level of emissions and projections of future production of fossil fuels as the oil and gas industry is difficult to forecast with the mix of drivers: economics, resource supply, demand, and regulatory procedures. The assumptions used for the projections, based on recent trends or State production trends in the near-term, and AEO2006 growth rates through 2020, do not include any significant changes in energy prices, relative to today’s

prices. Large price swings, resource limitations, or changes in regulations could significantly change future production and the associated GHG emissions. Other uncertainties include the volume of GHGs vented from gas processing facilities in the future, any commercial oil shale or coal-to-liquids production, and potential emissions-reducing improvements in oil and gas production, processing, and pipeline technologies.

There are currently five Type 3 proposals for renewable energy in the form of wind farms in the RSFO. The White Mountain project by Evergreen would constitute approximately 133 turbines (each capable of producing 2 megawatts (MW)), and is projected to disturb approximately 5.0 acres on public. The other proposed wind farm is the Miller Mountain project, which would constitute approximately 200 turbines (each turbine capable of producing 2 MW), and is projected to disturb approximately 8,767 acres on public and 1,280 on private. The Aspen Mountain project would constitute approximately 200 turbines (each capable of producing 2 megawatts (MW)), and is projected to disturb approximately 5.156 acres on public and 6,024 on private. The Sweeney project would constitute approximately 120 turbines (each capable of producing 2 megawatts (MW)), and is projected to disturb approximately 54,880 acres on public. The other proposed wind farm is the Teton project, which would constitute a approximately 220-240 turbines (each turbine capable of producing 2 MW), and is projected to disturb approximately 13,000 acres on BLM-administered land.

6.0 DESCRIPTION OF RESIDUAL IMPACTS

The Rock Springs Field Office, Surface Use and Occupancy Requirements, Conditions of Approval, and the Rock Springs Field Office's Special Leasing Stipulations, which are in place at the Wyoming State Office, will provide adequate mitigation for all lease parcels.

Residual impacts if the well is a producer will be the irreversible irretrievable loss of the mineral resource that would provide economic benefit. If the well is productive, the well pad and access road will be used for the life of the well. Once reclamation has been completed the footprint of the well pad is still visible.

Direct, indirect, cumulative and residual impacts of leasing and lease development are generally described in the Green River Resource Management Plan and Record of Decision, August 1997. An environmental analysis will be prepared on a case-by-case basis upon receipt of future subsequent actions to determine actual impacts from surface disturbance and development.

7.0 TRIBES, INDIVIDUALS, ORGANIZATIONS, or AGENCIES CONSULTED

Internal and external scoping was conducted for the proposed action and alternatives. The Wyoming Game and Fish Department was consulted for resource issues of concern for the nominated parcels.

Additional consultation, including Section 7 consultation with the U.S. Fish and Wildlife Service and Section 106 consultation with Wyoming State Historic Preservation Office, will be conducted on a site specific basis as part of the NEPA analysis for APDs and development.

8.0 LIST OF PREPARERS

Samantha Thurston, Natural Resource Specialist
Carrie Nelson, Wildlife Biologist
Jo Foster, Recreation Planner
Trisha Cartmell, Petroleum Engineer
Doug Kile, GIS Specialist

8.1 List of Reviewers

Kimberlee Foster, Planning and Environmental Coordinator
Angelina Pryich, Writer-Editor
Lance Porter, Field Manager

9.0 REFERENCES

- EPA Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2006. Environmental Protection Agency, Washington, D.C.
- EPA, Natural Gas Star Program (2006 data) at: <http://www.epa.gov/gasstar/accomplish.htm>.
Environmental Protection Agency, Washington, D.C.
- Goddard Institute for Space Studies. 2007. Annual Mean Temperature Change for Three Latitude Bands. Datasets and Images. GISS Surface Temperature Analysis, Analysis Graphs and Plots. New York, New York. (Available on the Internet: <http://data.giss.nasa.gov/gistemp/graphs/fig.B.lrg.gif>.)
- Intergovernmental Panel on Climate Change (IPCC). 2007. Climate Change 2007: The Physical Basis (Summary for Policymakers). Cambridge University Press. Cambridge, England and New York, New York. (Available on the Internet: <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>)
- IPCC, 2007: *Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, Pachauri, R.K and Reisinger, A. (eds.)]. IPCC, Geneva, Switzerland, 104 pp.
- National Academy of Sciences. 2006. Understanding and Responding to Climate Change: Highlights of National Academies Reports. Division on Earth and Life Studies. National Academy of Sciences. Washington, D.C. (Available on the Internet: <http://dels.nas.edu/basc/Climate-HIGH.pdf>.)
- U.S. Department of the Interior, Bureau of Land Management. March 1996. Green River Proposed Resource Management Plan and Final Environmental Impact Statement. Rock Springs, Wyoming.
- U.S. Department of the Interior, Bureau of Land Management. August 1997. Record of Decision and Green River Resource Management Plan. Rock Springs, Wyoming.
- U.S. Bureau of Census, 2000."Profile of Selected Economic Characteristics:2000. Data Set: Census 2000 Summary File 3 SF3)- Sample Data." Geographic Area: Sublette County and Sweetwater County, Wyoming.

Appendix 1

November 2010 Competitive Oil and Gas Lease Sale

Table 1. Proposed Action - Leasable parcels, includes Modified Parcels			
Parcel Number	Legal Description	Acres	Stipulations
WY-1011-157	T. 015N, R. 0980W, Section 020 N2, N2S2, SESW, S2SE, Sweetwater County	600.00	Threatened and Endangered Stipulation
WY-1011-158	T. 015N, R. 0980W, Section 020 N2, N2S2, SESW, S2SE, Sweetwater County	160.52	This Parcel was Rawlins. It was addressed in their EA.
WY-1011-160	T. 015N, R. 0980W, Section 020 N2, N2S2, SESW, S2SE, Sweetwater County	640.00	Threatened and Endangered Stipulation
WY-1011-172	T. 015N, R. 0980W, Section 020 N2, N2S2, SESW, S2SE, Sweetwater County	474.03	Active Coal Mining Lease Stipulation Raptor Trail Crucial Winter Range

November 2010 Competitive Oil and Gas Lease Sale

WY-1011-157 600.000 Acres
 T.0150N, R.0980W, 06th PM, WY
 Sec. 020 N2, N2S2, SESW, S2SE;
 Sweetwater County
 Rock Springs FO
 Formerly Lease No.
 Stipulations:
 Lease Notice No. 1
 Lease Notice No. 2
 Lease Notice No. 3

Special Lease Stipulation

CSU (1) The lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activity that will contribute to a need to list such a species or their habitat. BLM may require modifications to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. BLM will not approve any ground-disturbing activity that may affect any such species or critical habitat until it completes its obligations

under applicable requirements of the Endangered Species Act as amended, 16 U.S.C. § 1531 et seq., including completion of any required procedure for conference or consultation; (2) as mapped on the Rock Springs Field Office GIS database; (3) protecting Species affected by water depletions from the Colorado River system.

WY-1011-158 160.520 Acres **Note: Sent to Rawlins Not our Parcel.**

T.0130N, R.0990W, 06th PM, WY

Sec. 003 LOTS 1,2;

003 S2NE;

Sweetwater County

Rawlins FO

Rock Springs FO

Formerly Lease No.

Stipulations:

Lease Notice No. 1

Lease Notice No. 2

Lease Notice No. 3

Special Lease Stipulation

CSU (1) The lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activity that will contribute to a need to list such a species or their habitat. BLM may require modifications to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. BLM will not approve any ground-disturbing activity that may affect any such species or critical habitat until it completes its obligations under applicable requirements of the Endangered Species Act as amended, 16 U.S.C. § 1531 et seq., including completion of any required procedure for conference or consultation; (2) as mapped on the Rawlins Field Office GIS database; (3) protecting Species affected by water depletions from the Colorado River system.

WY-1011-160 640.000 Acres

T.0150N, R.0990W, 06th PM, WY

Sec. 026 ALL;

Sweetwater County

Rock Springs FO

Formerly Lease No.

Stipulations:

Lease Notice No. 1

Lease Notice No. 2

Lease Notice No. 3

Special Lease Stipulation

CSU (1) The lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activity that will contribute to a need to list such a species or their habitat. BLM may require modifications to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or

adverse modification of a designated or proposed critical habitat. BLM will not approve any ground-disturbing activity that may affect any such species or critical habitat until it completes its obligations under applicable requirements of the Endangered Species Act as amended, 16 U.S.C. § 1531 et seq., including completion of any required procedure for conference or consultation; (2) as mapped on the Rock Springs Field Office GIS database; (3) protecting Species affected by water depletions from the Colorado River system.

WY-1011-172 474.030 Acres **Note: Section 22-half on private,**
T.0200N, R.1010W, 06th PM, WY **Section 26-half on private has 2 PA**
Sec. 022 N2N2; **wells.**
026 NE, N2NW, SWNW;
034 SESE (EXCL 5.97 AC IN
034 RR ROW UNDER THE ACT
034 OF 3/3/1875);

Sweetwater County
Rock Springs FO
Formerly Lease No.
Stipulations:
Lease Notice No. 1
Lease Notice No. 2
Lease Notice No. 3

Special Lease Stipulation

TLS (1) Feb 1 to Jul 31; (2) as mapped on the Rock Springs Field Office GIS database; (3) protecting nesting Raptors.

TLS (1) Nov 15 to Apr 30; (2) as mapped on the Rock Springs Field Office GIS database; (3) protecting big game on crucial winter range.

CSU (1) Surface occupancy or use within 1/4 mile or visual horizon of the trail, whichever is closer, may be restricted or prohibited unless the operator and surface managing agency arrive at an acceptable plan for mitigation of anticipated impacts; (2) as mapped on the Rock Springs Field Office GIS database; (3) protecting cultural and scenic values of the Overland Trail.

CSU (1) The lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activity that will contribute to a need to list such a species or their habitat. BLM may require modifications to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. BLM will not approve any ground-disturbing activity that may affect any such species or critical habitat until it completes its obligations under applicable requirements of the Endangered Species Act as amended, 16 U.S.C. § 1531 et seq., including completion of any required procedure for conference or consultation; (2) as mapped on the Rock Springs Field Office GIS database; (3) protecting Species affected by water depletions from the Colorado River system.

CSU (1) Surface use or occupancy shall not be allowed by oil and gas lessee(s), operating rights holder(s), and/or oil and gas operator(s) on this Federal oil and gas lease to conduct any oil and gas operation, including drilling for, removing, or disposing of oil and/or gas contained in the Federal coal

lease W82637 unless a plan for mitigation of anticipated impacts is developed between the oil and gas and the coal lessees, and the plan is approved by the Authorized Officer.; (2) as mapped on the Rock Springs Field Office GIS database; (3) For the purpose of protecting the first in time valid existing rights of the coal lessee, the Authorized Officer reserves the right to alter or modify any oil and gas operations on the lands described in this lease ensuring: a.) the orderly development of the coal resource by surface and/or underground mining methods; b.) coal mine worker safety; and/or c.) coal production rates or recovery of the coal resource. The oil and gas lessee(s), operating rights holder(s), and/or oil and gas operator(s) of this Federal oil and gas lease shall not hold the United States as lessor, coal lessee(s), sub-lessee(s), and/or coal operator(s) liable for any damage or loss of the oil and gas resource, including the venting of coal bed methane gas, caused by coal exploration or mining operations conducted on Federal coal lease W82637.

Appendix 2
Wildlife Maps

(Insert 12 maps)

Appendix 3
Coal Maps

(Insert 2 maps)

Appendix 4

Sage-grouse Screen for Oil & Gas Lease Parcels

Sage-grouse Screen for Oil & Gas Lease Parcels						
Parcel #	Core Area (Yes/No)	Habitat (Yes/No)	11 sq. mi. Manageable federal land (Yes/No)	Drainage (Yes/No)	Defer Parcel (Yes/No)	Lease w/Lease Notice #3 (Yes/No)
WYW-1011-157	No	Yes	No	No	No	Yes
WYW-1011-160	No	Yes	No	No	No	Yes
WYW-1011-172	No	Yes	No	No	No	Yes

Appendix 5

Wilderness Review Checklist for Oil and Gas Lease Parcels

Sec. 603 (43 USC 1782). The Wilderness Act states:

“A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.”

“The word ‘roadless’ refers to the absence of roads which have been improved and maintained by mechanical means to ensure relatively regular and continuous use. A ‘way’ maintained solely by the passage of vehicles does not constitute a road.”

November 2010 Lease List

Lease Parcel	More than 5000 of roadless land (yes/no)	Imprint of man's work substantially unnoticeable (yes/no)	Outstanding opportunity for solitude or primitive recreation (yes/no)	Contains natural features of scientific, educational, scenic, or historical value (yes/no)	In Citizen Proposed Wilderness Area (yes/no. If yes but dropped during RMP process, state why)
WY-1011-157	No	Yes	Yes	No	No
WY-1011-160	No	Yes	Yes	Yes	Yes
WY-1011-172	No	No	No	Yes	No