

**United States Department of the Interior**  
**Bureau of Land Management**

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**Final Environmental Assessment**  
**DOI-BLM-CO-S050-2012-0009-EA**

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**November 16, 2012**

**February 2013 Oil and Gas Lease Sale**

*Location:* Uncompahgre Basin Resource Area

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**Uncompahgre Field Office  
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Montrose, CO 81401  
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# February 2013 Oil and Gas Lease Sale

(DOI-BLM-CO-S050-2012-0009 EA)

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# February 2013 Oil and Gas Lease Sale

(DOI-BLM-CO-S050-2012-009 EA)

## 1.0 INTRODUCTION

The Bureau of Land Management (BLM) Uncompahgre Field Office (UFO) has prepared this final environmental assessment (EA) to disclose and analyze the environmental effects of the proposed sale of 22 parcels consisting of 29,890.818<sup>1</sup> acres of federal minerals available for lease. These parcels were originally proposed for sale during the August 2012 oil and gas lease sale. Prior to finalizing the EA, the UFO recognized the need for additional analysis of the 22 proposed parcels. This EA reflects that analysis. Parcel identification numbers have changed as a result of consideration for a new lease sale. Table 1.1 identifies the parcel number as it was included in the August 2012 lease sale preliminary EA and the new number for the February 2013 final EA.

**Table 1.1 – Parcel Number Crosswalk**

<b>Crosswalk: August 2013 Parcels and February 2013 Parcels</b>			
	<b>August 2012 Lease Sale</b>	<b>February 2013 Lease Sale</b>	
	<u>6189</u>	<b><u>6623</u></b>	
	<u>6190</u>	<b><u>6624</u></b>	
	<u>6191</u>	<b><u>6625</u></b>	
	<u>6192</u>	<b><u>6604</u></b>	
	<u>6193</u>	<b><u>6605</u></b>	
	<u>6194</u>	<b><u>6606</u></b>	
	<u>6195</u>	<b><u>6607</u></b>	
	<u>6196</u>	<b><u>6608</u></b>	
	<u>6197</u>	<b><u>6609</u></b>	
	<u>6198</u>	<b><u>6610</u></b>	
	<u>6199</u>	<b><u>6611</u></b>	
	<u>6200</u>	<b><u>6612</u></b>	
	<u>6201</u>	<b><u>6613</u></b>	
	<u>6202</u>	<b><u>6614</u></b>	
	<u>6203</u>	<b><u>6615</u></b>	

<sup>1</sup> 29,811.680 acres was the grand total of lands available for lease included in the Preliminary EA provided to the public for comment between March 7, 2012 and April 20, 2012. Further evaluation concluded that acreages for parcels 6215, 6206 and 6192 were incorrectly calculated. However these miscalculations do not represent any changes to the parcel boundaries as nominated and reviewed in this environmental assessment.

<b>Crosswalk: August 2013 Parcels and February 2013 Parcels</b>		
	<u>6205</u>	<u>6616</u>
	<u>6206</u>	<u>6622</u>
	<u>6207</u>	<u>6617</u>
	<u>6211</u>	<u>6618</u>
	<u>6215</u>	<u>6619</u>
	<u>6216</u>	<u>6620</u>
	<u>6217</u>	<u>6621</u>
<b><u>Total Parcels in UFO = 22</u></b>		

### **1.1 Identifying Information**

Oil and gas leasing is a principal use of the public lands, and current BLM policy encourages orderly development of leases and makes mineral resources available to meet national, regional, and local energy needs. This policy is based in various laws, including the Mineral Leasing Act of 1920 (MLA) and Section 102(a)(12), 103(1) of the Federal Land Policy and Management Act of 1976 (FLPMA). The Federal Onshore Oil and Gas Leasing Reform Act of 1987 (FOOGLRA) (Sec. 5102(a)(b)(1)(A)) directs the BLM to conduct quarterly oil and gas lease sales in each state whenever eligible lands are nominated and available for leasing. Leases would be issued pursuant to 43 Code of Federal Regulations (CFR) Subpart 3100.

Colorado BLM Instruction Memorandum (IM) No. CO-2010-027 provided guidance and direction for implementing Washington Office (WO) IM 2010-117. That IM requires the field office to complete an EA as necessary and provide a 30 day public review and comment period for lease sales. It also provides guidance for parcel review, timeframes, leasing recommendations and attachments to be included with the EA. This EA has been prepared in accordance with IM CO-2010-027 to analyze leasing of 22 nominated parcels.

The final parcel list with stipulations and notices will be available to the public through a Notice of Competitive Lease Sale (NCLS) which starts the protest period (30 days). The protest period ends 60 days before the scheduled lease sale. When possible, the Colorado BLM resolves any protests within the 60 days between the end of the protest period and the lease sale. If any changes are needed to the parcels or stipulations/notices, an erratum will be posted to the BLM Colorado leasing website to notify the public of the change.

The parcels will be available for sale at an oral auction at the Colorado BLM State Office tentatively scheduled for February 14, 2013. If a parcel of land is not purchased at the lease sale by competitive bidding, it may still be leased within two years after the initial offering. Following issuance, a lease may be held for ten years, after which the lease expires unless oil or gas is produced in paying quantities. A producing lease can be held indefinitely by economic production.

Lease sale notices are posted on the Colorado BLM website at: [http://www.blm.gov/nm/st/en/prog/energy/oil\\_and\\_gas/lease\\_sale\\_notices.html](http://www.blm.gov/nm/st/en/prog/energy/oil_and_gas/lease_sale_notices.html). 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.

### 1.1.1 Site-Specific Analysis

A lessee must submit an Application for Permit to Drill (APD) (Form 3160-3) to the BLM for approval and must possess an approved APD (i.e. a drilling permit) prior to any surface disturbance in preparation for drilling. BLM reviews APDs in accordance with NEPA. Any stipulations attached to the standard lease form must be complied with before an APD may be approved. Following BLM approval of an APD, a lessee may produce oil and gas from the well in a manner approved by BLM in the drilling permit or in subsequent sundry notices. The operator must notify the appropriate authorized officer, 48 hours before starting any surface disturbing activity approved in the drilling permit.

### 1.1.2 Location of Proposed Action

The proposed February 2013 oil and gas lease sale parcel list includes 22 parcels which are identified using the following parcel identification numbers: 6604, 6605, 6606, 6607, 6608, 6609, 6610, 6611, 6612, 6613, 6614, 6615, 6616, 6617, 6618, 6619, 6620, 6621, 6622, 6623, 6624, 6625.

The proposed February 2013 Oil and Gas Lease Sale Parcel List can be found in Attachment A and Figure 1.1 is a map of the subject parcels.

Fourteen parcels (6621, 6624, 6616, 6605, 6609, 6611, 6612, 6625, 6607, 6608, 6610, 6613, 6614, and 6615) are entirely within Delta County, Colorado, while six parcels (6619, 6622, 6620, 6618, 6623, and 6604) are entirely within Gunnison County. Two parcels (6617 and 6606) overlap the Delta and Gunnison county boundary.

Seven parcels (6618, 6619, 6622, 6616, 6610, 6605 and 6615) have split estate where the minerals are federally owned and some of the surface estate is in private ownership. See Table 1.2 below for detailed legal description and acreage information.

**Table 1.2 – Split Estate Lands Associated with February 2013 Oil and Gas Lease Sale.**

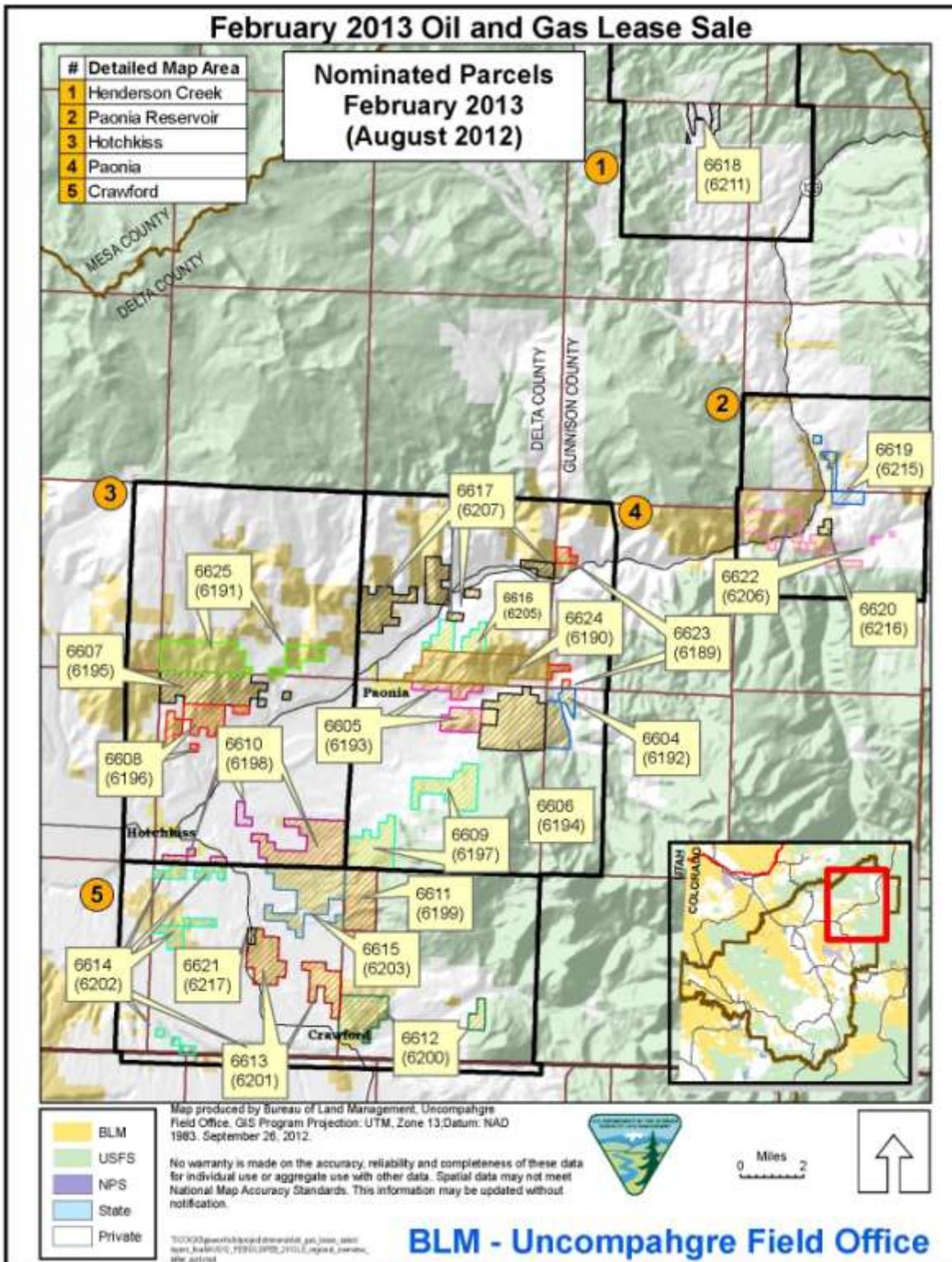
Parcel ID (Total Parcel Acres)	TWP/RNG/SEC	Qtr/Qtr/Alig.	Split Estate Acres
6618 (299.500)	T11S.,R90W.,Sec. 2	Lot 1-5,7,8,11-14	299.500
6619 (456.320)	T13S.,R89W.,Sec. 3	Lot 5-12	246.320
6622 (1618.970)	T13S.,R89W.,Sec. 2	Lot 36	13.710
6616 (800.00)	T13S.,R91W.,Sec. 28	NWNE	40.000
6610 (2360.000)	T14S.,R92W.,Sec. 28	W2NE, N2SE	160.000
6605 (1004.360)	T14S.,R91W.,Sec. 5	Lot 1	40.200
6615 (2145.610)	T15S., R92W.,Sec. 11	SESWNE, S2SENE, E2NWSE, NESWSE	60.000
<b>7 Parcels Incl. Private Lands</b>		<b>Total Acres of Private Lands</b>	<b>859.730</b>

The parcels proposed for leasing are located within the areas described below.

Legal Description:

Township 11 South	Range 90 West	Section 2
Township 12 South	Range 89 West	Sections 28, 33
Township 13 South	Range 89 West	Sections 2-6, 8-11
Township 13 South	Range 90 West	Sections 7, 31
Township 13 South	Range 91 West	Sections 13, 16, 19-22, 27-30, 32-36
Township 13 South	Range 92 West	Sections 31-35
Township 14 South	Range 90 West	Sections 6, 7
Township 14 South	Range 91 West	Sections 1-5, 9-12, 15, 21-22, 29-32
Township 14 South	Range 92 West	Sections 3-9, 17-18, 25-26, 28, 31-36
Township 15 South	Range 91 West	Sections 6, 7, 26, 29-31
Township 15 South	Range 92 West	Sections 1-6, 8, 10-12, 14-15, 18, 22-25, 31-32, 34

Figure 1.1 – General Area Map



### **1.1.3 Name and Location of Preparing Office**

Lead Office- Uncompahgre Field Office

### **1.1.4. Identify the subject function code, lease, serial, or case file number:**

DOI-BLM-CO-S050-2012-0009-EA

### **1.1.5 Applicant Name:**

Bureau of Land Management

## **1.2 Purpose and Need**

The purpose of the proposed action is to offer parcels for competitive oil and gas leasing to allow private individuals or companies to explore for and develop federal oil and gas resources for sale on public markets. The need for the action is to comply with the Mineral Leasing Act of 1920 while fulfilling the BLM's responsibility to balance resource protection and resource uses on the public lands in accordance with the Federal Land Policy and Management Act of 1976.

## **Decision to be Made**

The BLM UFO will recommend which parcels, if any, to offer for sale in the February 2013 competitive lease sale based on the analysis contained in this EA. The BLM may choose to: a) offer all of the nominated parcels for sale, b) offer a subset of the parcels for sale, or c) not offer any parcels at this time. The finding associated with this EA will not constitute the final approval for the proposed action. The final decision on which parcels will be sold will be made by the Colorado BLM State Director.

## **1.3. Scoping, Public Involvement and Issues:**

The proposed parcels were reviewed by an ID Team composed of resource specialists from the BLM UFO. This team identified resources in the parcel areas that might be affected by leasing and subsequent development, and considered potential impacts using current office records and geographic information system (GIS) data. They also conducted site visits.

On December 7, 2011, the BLM UFO issued a press release to the public regarding the Colorado August 2012 Federal Oil and Gas Lease Sale. The comment period was extended until February 9, 2012, as a result of public comments. The project information was also posted on the BLM UFO NEPA register, located online at:

[http://www.blm.gov/co/st/en/BLM\\_Information/nepa/ufo.html](http://www.blm.gov/co/st/en/BLM_Information/nepa/ufo.html)

The BLM Uncompahgre Basin Resource Area Land Use Plan (UBRA RMP) and associated documents are also available online at:

[http://www.blm.gov/co/st/en/fo/ufo/uncompahgre\\_rmp/ufo\\_rmps\\_amendments.html](http://www.blm.gov/co/st/en/fo/ufo/uncompahgre_rmp/ufo_rmps_amendments.html)

The BLM received 2,982 comment letters during the December 7, 2011, through February 9, 2012, public scoping period. Comment letters were received from 17 government agencies, 2,904 individuals, and 61 organizations. These letters presented a range of information, comments, and issues. The BLM carefully considered the substantive and timely comments received which informed the identification of possible resource issues, alternative development and analysis in the EA.

**As a result of public scoping, the following preliminary issues and concerns were identified:**

**Wildlife, Terrestrial**

- Impacts to threatened and endangered and sensitive wildlife species.
- Impacts to wildlife species through habitat fragmentation, displacement, and reduction of species.
- Disruption of migratory patterns of the Elk herds in the area.

**Noise**

- Excessive noise pollution.

**Recreation**

- Impacts to recreation values in the North Fork area, including hiking, biking, site-seeing, and hunting.

**Wild and Scenic Rivers**

- Impacts to Wild and Scenic Rivers

**Cultural Resources**

- Impacts to cultural resources and sacred ground.

**Socio-Economic**

- Impacts to property values and tourism, agri-tourism, agri-education.
- Impact to human health, public safety and emergency response.
- Close proximity to communities, schools, and private land / property.
- Impacts to real estate values.
- Impacts to agriculture including organic farms, wineries and vineyards, cattle ranches, apiary operations, and farms in the valley.
- Impacts to public safety and potential changes in current crime rates.
- Economic benefits of the proposed action to the communities.

**Water Resources**

- Effects of hydraulic fracturing on groundwater resources, whether harmful chemicals associated with hydraulic fracturing would affect groundwater resources, and the large quantities of water needed.
- Impacts to municipal water supplies.
- Impacts to domestic water wells as well as infrastructure, including pipelines and storage tanks.
- Impacts to groundwater and surface water sources, including springs, reservoirs, ditches and canals.
- Impacts to watersheds supporting the towns of Paonia, Hotchkiss, and Crawford.
- Impacts of toxic materials associated with drilling activities polluting the environment.

**Transportation**

- Concern regarding increased traffic and degradation to existing road quality in the valley.

**Access**

- Impacts to access.

**Air Quality**

- Impacts to air quality by increasing dust and other pollutants and impacts to climate of the area.
- Impacts to air quality in Wilderness Areas, State Parks, State Wildlife Areas and the Black Canyon of the Gunnison National Park.

**Soils**

- Impacts to threatened and endangered fish species by increasing the mobility of selenium.
- Impacts of development on erosion, runoff, and slope failures.
- Impacts of steep slopes and the ability for landscape to recover.

**Vegetation**

- Impacts to vegetation and the ability for rehabilitation.
- Impacts to riparian areas.

**Invasive, Non-native Species**

- Spread of noxious weeds in the valley.

**Geology and Minerals**

- Impact of development on both existing and previously coal mined areas
- Underground injection well control.
- Concern regarding potential association of oil and gas to local seismicity.

**Realty Authorizations**

- Impacts of development on existing facilities and ROWs (i.e. the Curecanti-Rifle Power Transmission Line and the Paonia Reservoir Dam structure.)

## 2.0 PROPOSED ACTION AND ALTERNATIVES

The purpose of this chapter is to provide information on the Proposed Action and Alternatives. Alternatives considered but not analyzed in detail are also discussed.

Figure 1.1 General Area Map, Table 2.1 below and Attachment A at the end of this EA include the acres and legal descriptions for the 22 parcels as nominated prior to field office review. The parcels as nominated are comprised of approximately 29890.818 acres of federal land and approximately 859.730 acres of split-estate land (see Table 1.2 Split Estate Lands).

**Table 2.1 – Proposed Action Parcel Listing**

Parcel ID	Acres	County	Parcel ID	Acres	County
6621	80.000	Delta	6617	2122.970	Delta & Gunnison
6624	2471.370	Delta	6606	2000.100	Delta & Gunnison
6616	800.000	Delta	<b>2 Parcels</b>		4123.070 Acres
6605	1004.360	Delta	Parcel ID	Acres	County
6609	2408.760	Delta	6619	456.320	Gunnison
6611	1294.560	Delta	6622	1618.970	Gunnison
6612	1363.400	Delta	6620	105.970	Gunnison
6625	2228.890	Delta	6618	299.500	Gunnison
6607	1913.000	Delta	6623	356.280	Gunnison
6608	1078.040	Delta	6604	830.668	Gunnison
6610	2360.000	Delta	<b>6 Parcels</b>		3667.708 Acres
6613	1720.000	Delta	<b>TOTAL</b>		
6614	1232.050	Delta			
6615	2145.610	Delta			
<b>14 Parcels</b>			22 parcels	<b>29890.818</b>	Acres

### 2.1 Description of the Proposed Action

The proposed action alternative recommends offering for sale 22 parcels with stipulations and lease notices as depicted in Figure 2.1 Proposed Action, described in Table 2.1 Proposed Action Parcel Listing, and in Attachment C. The field office review of this alternative has recommended deferral of approximately 383.820 acres associated with lease parcel 6622 as the lands involved include Bureau of Reclamation project lands described in Attachment B. Thus, this alternative would include 22 parcels, consisting of 28,647.268 acres of federal lands and approximately 859.730 acres of split estate lands for a total of 29,506.998 acres proposed to be made available for lease.



Each lease would be issued subject to stipulations identified in the 1989 UBRA RMP. Also, if situations or conditions are known to exist that could affect lease operations, the development of a lease notice may be necessary. Several lease notices were developed as a result of the proposed action and applied to the majority of parcels reviewed for this alternative. Available lease stipulations from the UBRA RMP and lease notices developed as a result of this alternative are identified in Attachment F, and if applied under the proposed action, are specified per parcel in Attachment C.

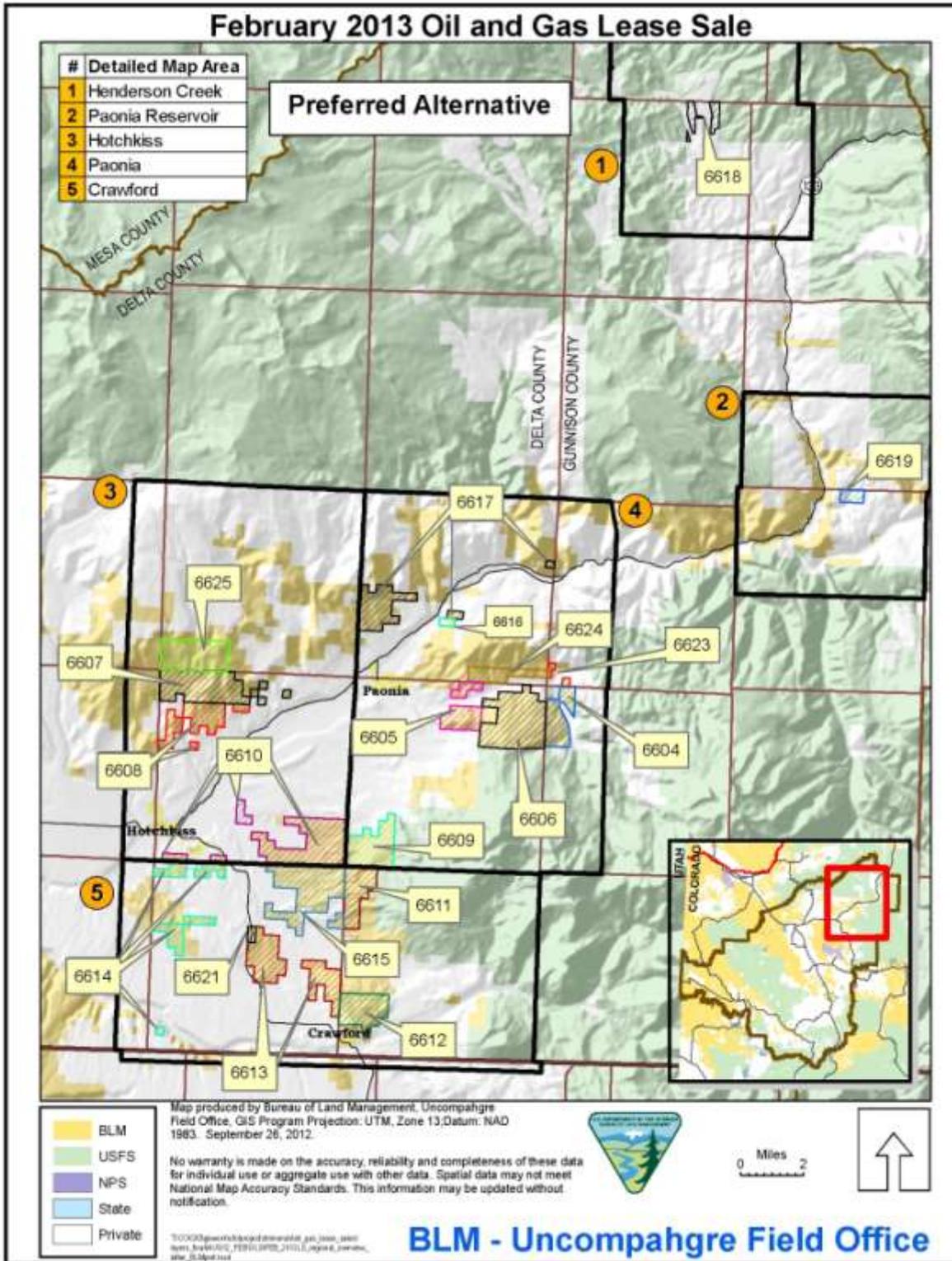
## **2.2 Description of Preferred Alternative**

The BLM Preferred Alternative utilized the information provided by Table 2.1 (Proposed Action Parcel Listing) and Attachment A to develop an additional alternative based on the following potential resource concerns within the proposed parcels:

1. Steep Slopes (those that express a slope of 40% or greater on 50% or more of the proposed parcel);
2. Delineated Public Water Supply Areas;
3. Proximity to School;
4. Scenic Byway;
5. Bureau of Reclamation Lands; and,
6. Proposed Jumbo Special Recreation Management Area

Each of the 22 parcels as nominated for the February 2013 Oil and Gas Lease Sale were reviewed for the above occurrences. The BLM Preferred Alternative recommends that all or portions of 20 of the original 22 proposed parcels be offered for sale and include appropriate stipulations and lease notices (Table 2.2 – Preferred Alternative Parcel Listing and Attachment E). The 20 parcels as proposed in the BLM Preferred Alternative are comprised of approximately 20,555.458 total acres. Approximately 19,811.068 acres are federal lands and approximately 744.390 acres are split-estate lands (see Figure 2.2).

Figure 2.2 – Preferred Alternative



**Table 2.2 - Preferred Alternative, Parcel Listing**

Parcel ID	Acres	County	Parcel ID	Acres	County
6621	80.000	Delta	6617	1163.660	Delta & Gunnison
6624	601.830	Delta	6606	2000.100	Delta & Gunnison
6616	80.000	Delta	<b>2 Parcels</b>		3163.760 Acres
6605	761.320	Delta	Parcel ID	Acres	County
6609	1208.760	Delta	6619	184.890	Gunnison
6611	934.560	Delta	6618	299.500	Gunnison
6612	962.880	Delta	6623	93.830	Gunnison
6625	1346.100	Delta	6604	830.668	Gunnison
6607	1713.120	Delta	<b>4 Parcels</b>		1408.888 Acres
6608	1078.040	Delta	<b>TOTAL</b>		
6610	2320.000	Delta			
6613	1720.000	Delta			
6614	1030.590	Delta			
6615	2145.610	Delta	20 parcels	<b>20555.458</b>	Acres
<b>14 Parcels</b>		15982.810 Acres			

**Table 2.3 - Preferred Alternative, Associated Private Surface Lands**

Parcel ID (Total Parcel Acres)	TWP/RNG/SEC	Qtr/Qtr/Aliq.	Split Estate Acres
6618 (299.500)	T11S.,R90W.,Sec. 2	Lot 1-5,7,8,11-14	299.500
6619 (184.890)	T13S.,R89W.,Sec. 3	Lot 5-12	184.890
6616 (80.00)	T13S.,R91W.,Sec. 28	NWNE	40.000
6610 (2320.000)	T14S.,R92W.,Sec. 28	W2NE, N2SE	160.000
6615 (2145.610)	T15S., R92W.,Sec. 11	SESWNE, S2SENE, E2NWSE, NESWSE	60.000
<b>7 Parcels Incl. Private Lands</b>		Total Acres of Private Lands	<b>744.390</b>

Each lease would be issued subject to stipulations identified in the 1989 UBRA RMP. Also, if situations or conditions are known to exist that could affect lease operations, the development of a lease notice may be necessary. Several lease notices were developed as a result of the proposed action and applied to the majority of parcels reviewed for this Preferred Alternative. This alternative concluded that approximately 9,335.360 acres of proposed lands available for lease be deferred from inclusion in the lease sale. Attachment D provides a listing of the rationale and legal descriptions of lands proposed for deferral under the preferred alternative. Available lease stipulations provided in the UBRA RMP and lease notices developed as a result of this alternative are identified in Attachment F and if applied under the preferred alternative, are specified per parcel in Attachment E.

### 2.3 Description of No Action Alternative

The BLM NEPA Handbook (H-1790-1) states that 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 an expression of interest to lease (parcel nomination) would be denied or rejected.

The No Action Alternative would withdraw the lease parcels from the February 2013 lease sale. The parcels would remain available for inclusion in future lease sales. Surface management would remain the same and ongoing oil and gas development could continue on surrounding private, State, and Federal leases.

No mitigation measures would be required as no new oil and gas development would occur on the unleased lands. No rental or royalty payments would be made to the Federal government. It is not expected that demand would decrease. It is likely that continuing demand would be addressed through production elsewhere.

#### **2.4 Alternatives Considered, but not Analyzed in Detail**

BLM considered making all parcels as proposed prior to analysis available for lease under standard terms and conditions, with UBRA leasing stipulations applied where necessary (Appendix A of UBRA RMP). This alternative was dismissed from detailed analysis because it is substantially similar to the Proposed Action although the Proposed Action does contain additional protections beyond those contained in the standard stipulations of the UBRA RMP to further balance resource protection with resource uses.

#### **2.5 Conformance with BLM Land Use Plan**

The EA is in conformance with the Uncompahgre Basin Resource Management Plan and Record of Decision, as amended (UBRA RMP).

**Date Approved:** July 26, 1989

The Proposed Action and alternatives described below conform with the UBRA RMP (BLM, 1989) because they are specifically provided for in the planning decisions. The planning decisions to lease federal mineral resources are determined within each management unit described in the UBRA RMP.

**Management Decisions** (UBRA RMP pages 9-10)

**Oil, Gas, and Geothermal Resources:** Federal oil, gas, and geothermal estate on both federal surface and split-estate lands will be open to leasing with standard lease terms. Other conditions for leasing such as no surface occupancy and seasonal stipulations (see Appendix A of UBRA RMP) are assigned in each management unit prescriptions; special stipulations and conditions also apply to federal surface and split-estate lands. Any special stipulations (i.e., seasonal closures) prescribed for a management unit will also apply to seismic and drilling activities.

Management decisions by unit can be found on the following pages of the UBRA RMP;

### **Management Unit 2 - page 14**

**Oil and Gas:** Federal oil and gas estate would be open to leasing. Within crucial deer and elk winter range (37,007 acres of federal surface and 8,850 acres of split-estate), seasonal stipulations on seismic and drilling activities would be in effect from December 1 through April 30 to reduce stress on wintering deer and elk. Variances to this seasonal stipulation may be granted on a case-by-case basis (see Appendix A of UBRA RMP).

### **Management Unit 3 - page 16**

**Oil and Gas:** Federal oil and gas estate would be open to leasing. A seasonal stipulation on seismic and drilling activities would be in effect on crucial deer and elk winter range (28,552 acres of federal surface and 25 acres of split-estate) from December 1 through April 30 if necessary to reduce stress on wintering deer and elk. Variances to this seasonal stipulation may be granted on a case-by-case basis (see Appendix A of UBRA RMP).

### **Management Unit 5 – page 18**

**Oil and Gas:** Federal oil and gas estate would be open to leasing. A seasonal stipulation on seismic and drilling activities would be in effect from March 1 through May 31 to protect erodible and saline soils on 24,177 acres of federal surface and 4,155 acres of split-estate. Variances to this seasonal stipulation may be granted on a case-by-case basis (see Appendix A of UBRA RMP).

### **Management Unit 7 – page 21**

**Oil and Gas:** Federal oil and gas estate would be open to leasing. A seasonal stipulation on seismic and drilling activities would be in effect from December 1 through April 30 on 1,730 acres (federal surface) of crucial deer and elk winter range, and on 1,637 acres of federal surface and 630 acres of split-estate lands used as hunting habitat by bald eagles. Variances in these seasonal stipulations may be granted on a case-by-case basis (see Appendix A of UBRA RMP).

### **Management Unit 9 – page 32**

**Oil and Gas:** Since there are no significant resource conflicts Management Units 8 and 9 are open to oil and gas leasing with only standard stipulations.

### **Management Unit 16 – page 28**

**Oil and Gas:** Federal oil and gas estate will be open to leasing. A seasonal stipulation of seismic and drilling activities will be in effect from December 1 through April 30 on 1,042 acres of federal surface along the Gunnison and North Fork of the Gunnison rivers that are used by balk eagles as hunting habitat. Variances to the seasonal stipulation may be granted (see Appendix A of UBRA RMP).

The Proposed Action is also consistent with the RMP decisions and corresponding goals and objectives related to the management of the following resources (including but not limited to):

air quality, cultural resources, recreation, riparian, soils, water, vegetation, fish & wildlife, BLM natural areas and Areas of Critical Environmental Concern (ACEC).

## **2.6 Relationship to Statutes, Regulations, or Other Plans**

- Federal Land Policy and Management Act (1976) as amended
- National Historic Preservation Act (1966) as amended
- Bald and Golden Eagle Protection Act (1962)
- Endangered Species Act (1973) as amended
- Migratory Bird Treaty Act (1918)
- Gunnison Sage-grouse Range-wide Conservation Plan, (Colorado Division of Wildlife Resources, 2005)
- Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds
- MOU between the USDI BLM and USFWS to Promote the Conservation and Management of Migratory Birds (April 2010)
- MOU Among the USDA, USDI and EPA Regarding Air Quality Analysis and Mitigation for Federal Oil and Gas Decisions Through the NEPA Process (2011)
- Oil and Gas Leasing Reform – Land Use Planning and Lease Parcel Reviews (BLM WO IM 2010-117)
- MOU between Colorado BLM and State of Colorado Oil and Gas Conservation Commission (COGCC) and USDI BLM concerning Oil and Gas permitting on BLM and NFS Lands in Colorado (BLM MOU CO-485) (July 2009)
- Interagency Agreement between the USDI Bureau of Reclamation (BOR) and the USDI BLM. Coordination of land use planning, land resource management, land conveyance and exchange, and cooperative services (1983)
- Standards for Public Land Health: In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. A finding for each standard will be made in the environmental analysis (Section 3 below).
- Code of Federal Regulations, Title 43, part 3101 section 1-2, Surface Use Rights.

These documents and their associated analysis and/or information are hereby incorporated by reference, based on their use and consideration by various authors of this EA.

### **3.0 AFFECTED ENVIRONMENT and ENVIRONMENTAL EFFECTS**

This chapter provides a description of the human and environmental resources that could be affected by the Proposed Action and presents comparative analyses of the direct, indirect and cumulative effects on the affected environment stemming from the implementation of the Proposed Action and other alternatives.

This analysis relies upon information compiled in the UBRA RMP (BLM 1989). Cumulative effects associated with oil and gas leasing in the area were analyzed in greater detail in the Proposed Uncompahgre Basin RMP Environmental Impact Statement (BLM, 1988).

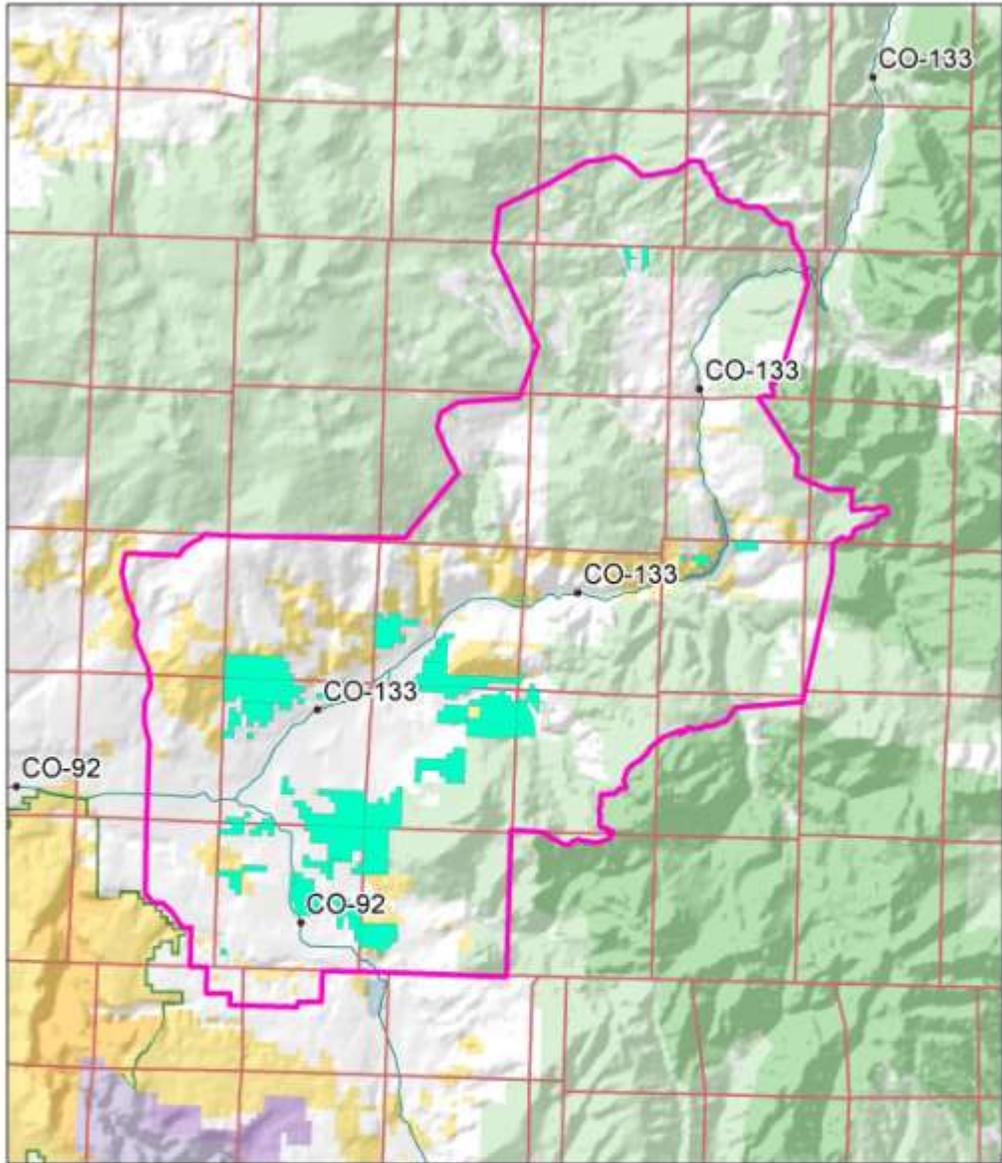
#### **3.1. Past, Present, Reasonably Foreseeable Future Actions**

To identify past, present, reasonably foreseeable future BLM related actions, information was obtained from the UBRA RMP (BLM 1989) and the UFO NEPA register.

([http://www.blm.gov/co/st/en/BLM\\_Information/nepa/ufo.html](http://www.blm.gov/co/st/en/BLM_Information/nepa/ufo.html))

Cumulative effects associated with oil and gas leasing in the area were analyzed in greater detail in the Proposed Uncompahgre Basin RMP Environmental Impact Statement (BLM, 1988). The area of influence includes 380,640 acres of land surface managed by USFS, BLM, State Parks, and private ownership. The geographic scope of the cumulative impacts assessment area includes the North Fork Valley and is shown in Figure 3.1 Area of Influence.

Figure 3.1 – Area of Influence



**February 2013 Lease Sale  
Cumulative Impacts Area of Influence**

Map prepared by Bureau of Land Management, Silverdale, WA, 2013. All Rights Reserved. 100% Scale. 100% Accuracy. 2013. No warranty is made for the accuracy, reliability, or completeness of information provided herein or any other information. All other rights reserved. Bureau of Land Management. The information is provided without warranty.



The following list includes all past, present and reasonably foreseeable actions known to the BLM that may occur within the affected area:

### **Past Actions**

The primary existing (past) disturbance within the proposed leasing areas is associated with coal mining, and oil and gas exploration and development.

#### **Coal Mining**

Historic coal mining activities over the past century include the following:

- Hawks Nest Mine;
- Oliver Mine No. 1 and No. 2;
- Bear Mine No. 1, No. 2, and No. 3;
- Edwards Mine;
- U.S.S. Steel Mine;
- Blue Ribbon Mine;
- King Mine;
- Farmers Mine;
- Oxbow Sanborn Creek; and
- Bowie No. 1 Mine (a.k.a. Orchard Valley Mine)

#### **Oil and Gas**

Past oil and gas activity within the region has included coal-bed methane wells and conventional gas wells. Active natural gas wells within the cumulative impacts area include:

- 45 active wells exist in the area. 18 are on private surface/private minerals; 12 are split-estate wells (private surface, federal minerals); 15 are on U.S. Forest Service surface; and no wells are on BLM surface.
- 20 wells are producing, 17 are capable of producing but are shut-in, and 8 are temporarily abandoned.
- Total disturbance includes:
  - Well pads - approximately 100 acres.
  - Pipelines - approximately 56 acres.
  - Roads - approximately 100 acres.
  - Facilities – approximately 48.1 acres.
- Total disturbance – 304.1 acres (average disturbance per well (pad, road and pipeline) – 6.0 acres).

### **Present Actions**

Present actions are focused on mining, oil and gas, livestock grazing, recreation and residential/agricultural development.

#### **Coal Mining**

Table 3.1 Raw Coal, below, contains recent production data for the three coal mines in the North Fork Valley. Currently, there are three active coal mines in the area. West Elk, Bowie No. 2, and Elk Creek, including:

- The West Elk Mine is a longwall operation located south and east of Somerset and is operated by Mountain Coal Company.

- Bowie No. 2 was opened in 1997 as a room-and-pillar mine but converted to a longwall system in late 1999. Bowie No. 2 hauls its coal to the Bowie No. 2 loadout northeast of Paonia.
- The Elk Creek Mine is a longwall operation north of Somerset, operated by Oxbow, with a loadout immediately north of Somerset.

**Table 3.1 - Raw Coal Production - North Fork Valley (NF) - BLM-UFO  
1 Yr Averages**

<b>Average based on:</b>	<b>Bowie</b>	<b>Elk Creek</b>	<b>West Elk</b>	<b>Totals (NF)</b>
5 Yr	2,808,556	4,378,814	5,721,944	12,909,314
1 Yr	1,873,357	3,495,575	6,499,048	11,867,980
Periods end Sept. 30, 2011				

NOTE: The total yearly production for the North Fork Valley is expected to remain about the same between 12 and 13 million tons.

The North Fork Branch of the Union Pacific Railroad operates exclusively to serve these coal mines. This line branches from the main line in Grand Junction and passes through Delta, Hotchkiss, Paonia, and Somerset.

**Oil and Gas Leasing**

There are approximately 259,200 total acres of federal oil and gas mineral estate within the cumulative impacts area. Overall, there are 124,078 acres currently leased. This includes 34,165 acres of inventoried roadless areas which were leased prior to implementation of the USFS roadless rule. If these pre-2001 leases expire and are subsequently leased again, they will have surface use restrictions consistent with any roadless rule that may be in place at that time. Approximately 135,122 acres of Federal oil and gas mineral estate remain available for nomination to be leased. Approximately 62,040 of the unleased acres are within inventoried roadless areas, and may be subject to surface use restrictions related to road building if ever nominated for leasing.

**Other actions in the area**

There are a number of water storage reservoirs and canals around the North Fork Valley to serve agriculture and domestic uses.

Historically, fruit orchards along the valley floor and low mesas have been important to the local Paonia economy. More recently, vineyards have replaced some orchards in the area.

WAPA operates the Curecanti-Rifle 230/345 kV transmission line that parallels Terror Creek. Sheep and cattle are grazed in pastureland around Paonia and also at higher elevations near the coal mining operations during the summer.

Forest treatments and timber sales have been limited in the area. Merchantable timber resource is very limited, and steep slopes and inaccessibility also limit harvest activities.

Residential developments in the area around the communities of Paonia, Hotchkiss, Crawford, and Delta have been growing in population, with many new houses being built. Most of this development has been down-valley from the coal mines and oil and gas developments in broader

portions of the North Fork Valley. This development has increased the traffic load and demand for maintenance on State Highway 133.

There is little developed recreation in the area; however, the area is widely used for dispersed recreational activities, such as hunting, four-wheeling, hiking, picnicking, horseback riding, snowmobiling, and sight-seeing.

## **Reasonably Foreseeable Future Actions**

### **Coal Mining Activity**

Underground coal mining is expected to continue in the North Fork Valley. In addition to current coal leases:

- Oxbow Mining, LLC (Elk Creek Mine) has been issued both a 786-acre lease by application with surface disturbance of approximately 5.63 acres and a 157-acre coal lease modification on the GMUG.
- Mountain Coal Company (West Elk Mine) applied for up to 159 E Seam methane drainage well (MDWs) sites that would support 171 individual MDWs, and use or construction of approximately 26.1 miles of roads within the GMUG. Also, two lease modifications adjacent to each other and to current leases to the south within the GMUG are being processed and are undergoing NEPA analysis. They would add approximately 1,700 acres to the West Elk Mine, of which an estimated 73 acres will be actively disturbed for the remaining life of the mine.
- Oxbow Mining, LLC (Oak Mesa Project – coal exploration license) - a proposal to drill 43 exploration drill holes on private and federal lands into federal subsurface holdings. The entire exploration area covers about 13,873 acres, and temporary surface disturbances from road and pad construction would occur on about 32.86 acres.
- Bowie Resources, LLC (Bowie No. 2 Mine) applied for two lease modifications adjacent to current leases to the north under private and public lands, which would add approximately 502 acres, and temporary surface disturbances from road and pad construction would occur on about 16.6 acres. The NEPA for this action was approved by BLM UFO in August 2012, although the issuance of these modifications is still in process.
- Additional actions including coal lease modifications and new coal lease applications could be expected in the North Fork Valley. These actions may affect how long mining would continue in this area; however, it is likely that mining would continue for another decade, if not more.

### **Pending Oil and Gas Activity:**

15 total permits (APDs) pending.

7 shale well permits

3 coal-bed methane wells and

5 coal mine methane wells capturing from coal mines.

Total estimated disturbance based on current permits – approximately 115 acres of disturbance anticipated (based on 6.8 acres of disturbance per well).

It is difficult to forecast future oil and gas development within the cumulative impact assessment region. The area is seeing an increase in development. Activity increases are due to changes in technology for the drilling and development of the conventional mancos shale wells and wells used to capture methane from coal mines. It is estimated that the area will average 20 new wells per year (assumes at least 2 wells per pad – 10 new pads per year). This will then create approximately 68 acres of new disturbance per year from oil and gas development.

#### **SG Interests 150 gas well Master Development Plan**

SG Interests I, Ltd (SG) has proposed a master development plan to develop mineral leases within the Bull Mountain Unit located in Gunnison County, Colorado. SG is proposing to drill and produce 150 wells from approximately 46 individual well pads and associated infrastructure. Approximately 50% of the wells would target coalbed methane production and the other 50% would be exploring other potentially productive natural gas zones encountered by drilling into other geologic zones in the area of the Bull Mountain Unit.

### 3.2 Resources/Concerns Considered

Potential effects to the following resources/concerns were evaluated to determine if detailed analysis is necessary. Consideration of some of these elements is to ensure compliance with laws, statutes or Executive Orders that impose certain requirements upon all Federal actions. Other items are relevant to the management of public lands in general, and to the BLM UFO in particular.

**Table 3.2 - Resources and Concerns Considered**

Resource/Concern	Not Applicable or Not Present	Present, But No Impact	Applicable & Present; Brought Forward for Analysis
Air Quality			X
ACEC	X		
Wilderness	X		
Wild and Scenic Rivers			X
Lands with Wilderness Characteristics	X		
Cultural Resources			X
Native American Religious Concerns			X
Farmlands, Prime/Unique			X
Soils			X
Vegetation			X
Invasive, Non-native Species			X
Threatened or Endangered Species			X
Migratory Birds			X
Wildlife, Terrestrial			X
Wildlife, Aquatic			X
Wetlands & Riparian Zones			X
Floodplains			X
Surface Water, and Ground Water			X
Wastes, Hazardous or Solid			X
Environmental Justice		X	
Access		X	
Transportation			X
Cadastral Survey	X		
Realty Authorizations		X	
Range Management			X
Forest Management	X		
Fire			X
Noise		X	
Recreation			X
Visual Resources			X
Geology and Minerals			X
Paleontology			X
Law Enforcement	X		
Socio-Economics			X

**Standards for Public Land Health:** In January 1997, Colorado BLM approved the Standards for Public Land Health. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. A finding for each standard will be made in the environmental analysis.

**Table 3.3 - Public Land Health Standards.**

<b>Standard</b>	<b>Definition/Statement</b>
#1 Upland Soils	Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes. Adequate soil infiltration and permeability allows for the accumulation of soil moisture necessary for optimal plant growth and vigor, and minimizes surface runoff.
#2 Riparian Systems	Riparian systems associated with both running and standing water, function properly and have the ability to recover from major surface disturbances such as fire, severe grazing, or 100-year floods. Riparian vegetation captures sediment, and provides forage, habitat and bio-diversity. Water quality is improved or maintained. Stable soils store and release water slowly.
#3 Plant and Animal Communities	Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat's potential. Plants and animals at both the community and population level are productive, resilient, diverse, vigorous, and able to reproduce and sustain natural fluctuations, and ecological processes.
#4 Threatened and Endangered Species	Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities.
#5 Water Quality	The water quality of all water bodies, including ground water where applicable, located on or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Colorado. Water Quality Standards for surface and ground waters include the designated beneficial uses, numeric criteria, narrative criteria, and anti-degradation requirements set forth under State law as found in (5 CCR 1002-8), as required by Section 303(c) of the Clean Water Act.

**Elements Not Brought Forward for Detailed Analysis**

The following issues were eliminated from analysis because they were not applicable to the lands considered (not present) in the proposed action.

**Areas of Critical Environmental Concern**

There are no Areas of Critical Environmental Concern within the proposed action area.

**Forest Management**

Merchantable timber resource is very limited. Steep slopes and inaccessibility also limit harvest activities. The proposed action is not anticipated to have a measurable impact to Forest Management.

**Wilderness and Wilderness Study Areas:**

There is no designated wilderness within or adjacent to the proposed area. There are no Wilderness Study Areas within or adjacent to the project area.

### **Lands with Wilderness Characteristics**

Consistent with its responsibilities under FLPMA, BLM maintains inventories of lands that possess wilderness characteristics. BLM Instructional Memorandum (IM) 2011-154 provides guidance on the inventory process. Generally, the characteristics BLM considers are:

- A) Size – generally 5,000 acres or greater that do not have mechanically constructed and maintained roads. Smaller areas that share a boundary with existing wilderness or wilderness study areas of 5,000 acres or greater may also be considered to have adequate size.
- B) Naturalness - lands must appear to have been affected primarily by the forces of nature, and people’s work must be substantially unnoticeable.
- C) Outstanding opportunities for solitude, or primitive and unconfined type of recreation
  - Solitude – visitors can feel alone, secluded and isolated from the sights and sounds of other people.
  - Primitive and unconfined recreation – the use of the area is primarily through non-motorized or non-mechanical means with no or minimal recreation facilities.
- D) Supplemental values – the area contains ecological, geological, or other features of scientific, educational, scenic, or historical value.

For an area to possess wilderness characteristics it must meet A, B and C, D is optional. The Uncompahgre Field Office inventory of lands with wilderness characteristics was updated in 2011. No lands within the project area were found to possess wilderness characteristics.

## **3.3 Resources for Analysis**

### **3.3.1 AIR RESOURCES**

#### ***3.3.1.1 AIR QUALITY***

##### **Affected Environment**

The U.S. Environmental Protection Agency (EPA) has established national ambient air quality standards (NAAQS) for criteria pollutants, including carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), sulfur dioxide (SO<sub>2</sub>), and lead (Pb). Exposure to air pollutant concentrations greater than the NAAQS has been shown to have a detrimental impact on human health and the environment. The EPA has delegated regulation of air quality under the federal Clean Air Act to the State of Colorado. The Colorado Department of Public Health and Environment (CDPHE), Air Pollution Control Division (APCD) administers Colorado’s air quality control programs and is responsible for issuing permits for emission sources. The State has established the Colorado Ambient Air Quality Standards (CAAQS), which can be more, but not less stringent than the NAAQS. In addition to the criteria pollutants, regulations also exist to control the release of hazardous air pollutants (HAPs). HAPs are chemicals that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects. EPA currently lists 188 identified compounds as hazardous air pollutants, some of which can be emitted from oil and gas development operations, such as benzene, toluene, and formaldehyde. Ambient air quality standards for HAPs do not exist; rather these emissions are regulated by the source type, or specific industrial sector responsible for the emissions.

Ambient air quality attainment in the affected environment is demonstrated by monitoring for ground level atmospheric air pollutant concentrations. In general, the ambient air measurements show that existing air quality in the region is good. Colorado maintains a network of monitors that track compliance with ambient air quality standards. Most of the monitors are located in the eastern half of the state, particularly along the more urban Front Range. Western Colorado, by comparison, is relatively sparsely populated, and there are no monitors in the immediate vicinity of the lease area. There are, however, monitors in some areas of western Colorado, particularly Grand Junction. Table 3.4 shows the maximum monitored values by county for selected locations in the western portion of the state for 2009-2011. Not every county has monitoring, and counties that do have monitors do not necessarily have monitoring for all criteria pollutants. While these monitors cannot provide information regarding air quality in the immediate vicinity of the lease area, they do provide insight into regional air quality conditions. The table indicates exceedances of the PM<sub>2.5</sub> 24-hour standard in Mesa County for 2009 and 2010, but the 3-year average value ending in 2011 indicates that the 24-hour standard was met. The Mesa County monitor is located in Grand Junction, approximately 61 miles from the lease area. No other exceedances of ambient air quality standards are noted in the table. An exceedance occurs whenever an individual measurement is recorded that is above the level of the standard, but as the standards are generally defined as an average of several values, an individual exceedance does not necessarily indicate a violation of an ambient air quality standard. None of the listed monitor results indicate a violation of any ambient air quality standard.

**TABLE 3.4 - Air Pollutant Monitoring Results for Selected Counties in Western Colorado**

County	CO 2nd Max 1- hr (ppm)	CO 2nd Max 8-hr (ppm)	NO <sub>2</sub> 98th Percentil e 1-hr (ppb)	Ozone 2nd Max 1-hr (ppm)	Ozone 4th Max 8-hr (ppm)	PM <sub>2.5</sub> 98th Percentil e 24-hr (µg/m <sup>3</sup> )	PM <sub>2.5</sub> Weighted Mean 24- hr (µg/m <sup>3</sup> )	PM <sub>10</sub> 2nd Max 24-hr (µg/m <sup>3</sup> )	PM <sub>10</sub> Mean 24-hr (µg/m <sup>3</sup> )
<b>2009</b>									
Delta	.	.	.	.	.	.	.	58	25
Gunnison	.	.	.	.	.	.	.	86	27
Mesa	2.3	2.2	.	0.07	0.064	41	9.6	122	31
<b>2010</b>									
Delta	.	.	.	.	.	.	.	115	23
Gunnison	.	.	.	.	.	.	.	92	24
Mesa	1.7	1.1	.	0.08	0.068	37	9	131	28
<b>2011</b>									
Delta	.	.	.	.	.	.	.	48	21
Gunnison	.	.	.	0.07	0.064	.	.	74	24
Mesa	1.8	1.1	.	0.08	0.068	22	7.1	54	25

(Source: [http://www.epa.gov/airdata/ad\\_rep\\_con.html](http://www.epa.gov/airdata/ad_rep_con.html))

**TABLE 3.5 - 2008 Air Pollutant Emissions (EPA NEI)**

County	Emissions (Tons Per Year)					
	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	VOC
Delta	10,347	1,491	2,156	813	52	1,197
Gunnison	18,565	1,310	2,739	1,202	80	3,109
Mesa	37,718	7,751	5,777	1,865	2,888	4,783

## Environmental Effects

### Proposed Action

The decision to offer the identified parcels for lease would not result in any direct emissions of air pollutants. While the act of leasing the parcels would produce no significant air quality impacts, potential future development of the leases could lead to increases in local area and regional emissions. Since it is unknown if the parcels would be developed, or the extent of the development, it is not possible to reasonably quantify potential air quality impacts through dispersion modeling or another applicable method at this time. Additional air impacts will be addressed in a subsequent analysis when lessees file an Application for Permit to Drill (APD) and submit a project-specific emissions inventory. Any proposed activities analyzed during APD review and approval including, but not limited to, exploratory drilling activities would be subject to applicable local, State, and Federal air quality laws and regulations.

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. Lease development at the APD stage may result in emissions of particulate matter, mainly dust, becoming airborne when drill rigs and other vehicles travel on existing dirt roads to drilling locations. Air quality would also be affected by engine exhaust emissions. Wells may be drilled during exploration. If the area is explored for natural gas development, gas may be flared and/or vented to evaluate the characteristics and potential of the resource available. The development stage is likely to include the installation of pipelines for transportation of raw product, as well as possible new gas processing facilities. During this period volatile organic compounds (VOCs) would be released from the reserve pit, water disposal facilities, and/or tanks and during completion activities.

Soil disturbance resulting from construction of pads and roads, pipeline construction, and drilling is expected to cause increases in fugitive dust and inhalable particulate matter (specifically PM<sub>10</sub> and PM<sub>2.5</sub>) in the project area and immediate vicinity. In addition, engines used for drilling, transportation, gas processing, compression, and other uses would contribute to increases in the following criteria pollutants: particulate matter, carbon monoxide, volatile organic compounds, nitrogen dioxide, sulfur dioxide, and ozone. Ozone is not emitted directly from sources, but is chemically formed in the atmosphere via interactions of oxides of nitrogen (NO<sub>x</sub>) and volatile organic compounds (VOCs) in the presence of sunlight and under certain meteorological conditions (NO<sub>x</sub> and VOCs are Ozone precursors). Ozone formation and prediction is complex, generally results from a combination of significant quantities of VOCs and NO<sub>x</sub> emissions from various sources within a region, and has the potential to be transported across long ranges. Non-criteria pollutants such as carbon dioxide, methane and nitrous oxide (greenhouse gases), air toxics (e.g., benzene), total suspended particulates (TSP), increased impacts to visibility, and

atmospheric deposition may also increase as a result of exploration and development (no national ambient air quality standards have been set for non-criteria pollutants).

In order to reasonably quantify emissions associated with well exploration and production activities, certain types of information is needed. Such information includes a combination of activity data such as the types of equipment needed if a well were to be completed successfully (e.g. compressor, separator, dehydrator), the technologies which may be employed by a given company for drilling any new wells, area of disturbance for each type of activity (e.g. roads, pads, electric lines, compressor station), number of days to complete each kind of construction, number of days for each phase of drilling process, type(s), size, number of heavy equipment used for each type of construction (backhoe, dozer, etc.), number of wells of all types (shallow, deep, exploratory, etc.), compression per well (sales, field booster), or average horsepower for each type of compressor. The degree of impact will also vary according to the characteristics of the geologic formations from which production occurs. Currently, it is not feasible to directly quantify emissions; however, what can be said is that future approved exploration and production activities could contribute to incremental decreases in area air quality as a result of contemporaneous increases in emissions associated with these oil and gas activities.

### **Cumulative Effects**

At the time of approved lease development, when combined with the past, present and reasonably foreseeable actions (including increased traffic and the need for water disposal facilities) will elevate potential for the deterioration of air quality in the North Fork Valley. Increased development of fluid minerals will result in a cumulative increase in surface and subsurface disturbances as well as increase emissions during drilling and completion activities. The type of impacts will be the same as described under environmental impacts associated with the proposed action. However, the severity of the impacts will be elevated with increased contemporaneous development in the area.

Based on regional level air emissions analysis conducted by BLM, an analysis of recent air quality trends, and the likeliness of future O & G developments as identified in several Draft RMPs (which includes projected oil and gas authorizations for BLM and Non-BLM jurisdictions), the BLM has identified a need to initiate a Western Colorado Air Resources Management Modeling Study (West-CARMMS) to aid in implementing a programmatic approach to air resource management. In brief the programmatic approach to managing air quality has essentially four elements for effective adaptive management. The elements include an iterative regional modeling assessment (West-CARMMS), project specific modeling if appropriate, project specific air quality monitoring if appropriate, and emissions inventory collection and development. The emissions inventory will serve as a tracking mechanism for contemporaneous development and comparison to the regional modeling inputs to determine annual project significance levels and the need to re-initiate regional modeling based on the changing landscape of oil and gas development.

### **Mitigation**

Impacts resulting from future lease development will be determined at the time of APD submittal. Conditions of approval (COAs) may be added at the APD permitting stage based on the review of site specific proposals, other applicable analysis of future exploration/development

activities, or if new information becomes available and the mitigation proposed is supported by concise site specific NEPA analysis. COAs cannot take away lease rights or prevent development, however they can provide defensible assurances that air quality violations, and unacceptable impacts to Air Quality Related Values (AQRVs) will not occur. All proposed activities including, but not limited to, exploration drilling activities would be subject to local, State, Tribal, and Federal air quality laws and regulations. The BLM will work collaboratively with other local, state, federal, and tribal agencies involved in the authorization of oil and gas development and the management of air resources to develop a comprehensive strategy to manage air quality impacts from oil and gas development in western Colorado.

### **Potential mitigation requirements that may become Conditions of Approval for leased parcels.**

To mitigate any potential impact that oil and gas development emissions may have on regional air quality, Best Management Practice (BMPs) may be required for any development project.

Examples of COA or required BMPs include the following:

- Tier II or better drilling engines
- Stationary internal combustion engine standard of 2g NOx/bhp-hr for engines <300HP and 1 g NOx/bhp-hr for engines >300HP
- Low bleed or no bleed pneumatic pump valves
- Dehydrator VOC emission controls to +95% efficiency
- Tank VOC emission controls to +95% efficiency
- Conduct pre and/or post project air monitoring
- Site specific project modeling to determine mitigation requirements and effectiveness

### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on air quality would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on air quality would be similar to those described under the Proposed Action.

### **Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

### **No Action Alternative**

There would be no impacts to air quality from the No Action Alternative.

### ***3.3.1.2 CLIMATE***

#### **Affected Environment**

The proposed lease areas are located in a high plateau continental region of mesas, mountains, and high desert. The climate is characterized by dry, sunny days and clear nights with extreme daily temperature changes. Table 3.6 Climate Summary from Station Near the Leasing Areas, provides a summary of weather records from the three closest National Cooperative Observer Network weather stations in the planning area compiled by the Western Regional Climatic Center.

<b>Table 3.6 Climate Summary From Station Near the Leasing Areas</b>													
	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Annual</b>
<b>MONTROSE 2, COLORADO (Elevation: 5,690 Feet) Period of Record: 10/1895-12/2007</b>													
Avg Max Temp (° F)	37.8	43.9	53.0	62.4	72.5	83.2	88.5	85.7	77.9	65.7	50.3	39.2	<b>63.3</b>
Avg Min Temp (° F)	13.5	19.7	26.6	34.0	42.2	49.7	55.6	53.9	45.7	35.0	23.9	15.2	<b>34.6</b>
Avg Total Inches Precip.	.57	.53	.72	.86	.87	.53	.86	1.25	1.12	1.04	.66	.65	<b>9.67</b>
Avg Total Snow Fall in Inches	6.6	4.5	3.8	1.9	0.1	0.0	0.0	0.0	0.0	0.7	2.8	6.9	<b>27.4</b>
Avg Snow Depth in Inches	1.0	0	0	0	0	0	0	0	0	0	0	0	<b>1.0</b>
<b>NORWOOD, COLORADO (Elevation: 7,020 Feet) Period of Record: 4/1924-12/2007</b>													
Avg Max Temp (° F)	37.4	41.5	48.6	58.0	68.2	78.7	83.8	80.7	73.4	62.1	48.0	38.7	<b>59.9</b>
Avg Min Temp (° F)	9.6	14.6	21.8	28.3	35.9	43.7	50.0	48.9	41.8	31.9	20.5	11.9	<b>29.9</b>
Avg Total Inches Precip.	0.95	0.93	1.15	1.23	1.13	0.79	1.87	1.99	1.77	1.59	1.11	0.97	<b>15.47</b>
Avg Total Snow Fall in Inches	12.7	10.5	9.9	5.4	0.7	0.0	0.0	0.0	0.1	2.3	7.7	10.9	<b>60.3</b>
Avg Snow Depth in Inches	4.0	3.0	1.0	0	0	0	0	0	0	0	1.0	2.0	<b>1.0</b>
<b>PAONIA 1 SW, COLORADO (Elevation: 5,580 Feet) Period of Record: 1/1893-12/2007</b>													
Avg Max Temp (° F)	38.6	45.0	53.7	63.0	73.1	83.6	89.2	86.4	77.9	66.6	52.3	40.3	<b>64.1</b>
Avg Min Temp (° F)	13.8	20.4	27.5	33.9	41.6	49.2	56.0	54.6	46.7	36.5	26.0	16.2	<b>35.2</b>
Avg Total Inches Precip.	1.22	1.19	1.49	1.37	1.37	.77	1.08	1.31	1.52	1.63	1.28	1.32	<b>15.56</b>
Avg Total Snow Fall in Inches	12.1	9.0	6.4	2.3	0.2	0.0	0.0	0.0	0.1	0.7	4.7	11.7	<b>47.2</b>
Avg Snow Depth in Inches	4.0	2.0	0	0	0	0	0	0	0	0	0	2.0	<b>1.0</b>

Throughout much of the Uncompahgre Planning Area, average daily winter temperatures range from a low of around 10° Fahrenheit (F) to a high of nearly 40° F. In summer, average daily temperatures range from around 50° F up to 90° F. Higher elevation locations are cooler, with extreme minimum temperatures approaching -40° F, while lower locations are warmer, with extreme maximum temperatures near 110° F.

Monthly precipitation is relatively uniform, with minimum precipitation typically occurring during June, followed by a period of maximum precipitation caused by summer convective thunderstorms. Higher elevation monthly precipitation is more uniform, but contains less moisture in mid-winter snow. Snowfall typically occurs from November through April (and October through May at higher elevations), with light accumulation. However, mountain snowpack can become quite deep, and remain well into spring. In general, total accumulated precipitation throughout the planning area was low in 2000, 2002, and 2003 (which were among the ten driest years on record), with 2006 and 2007 among the ten wettest years on record.

## **Environmental Effects**

### **Proposed Action**

The assessment of GHG emissions, their relationship to global climatic patterns, and the resulting impacts is an ongoing scientific process. It is currently not feasible to know with certainty the net impacts from the proposed action on climate—that is, while BLM actions may contribute to the climate change phenomenon, the specific effects of those actions on global climate are speculative given the current state of the science. The BLM does not have the ability to associate a BLM action's contribution to climate change with impacts in any particular area. The science to be able to do so is not yet available. 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 and determining the significance of any discrete amount of GHG emissions is beyond the limits of existing science. When further information on the impacts to climate change is known, such information would be incorporated into the BLM's planning and NEPA documents as appropriate. Leasing the subject tracts would have no direct impacts to climate change as a result of GHG emissions. Any potential effects to air quality from sale of the lease parcel would occur at such time that the lease was developed.

### **Cumulative Effects**

This section incorporates an analysis of the contributions of the proposed action to GHG emissions and a general discussion of potential impacts to climate.

The EPA's Inventory of US Greenhouse Gas Emissions and Sinks found that in 2009, total U.S. GHG emissions were almost 7 billion (6,639.7 million) metric tons and that total U.S. GHG emissions have increased by 7.4% from 1990 to 2009 (EPA, 2011). Emissions declined from 2008 to 2009 by 6.0% (422.2 million metric tons CO<sub>2</sub>e). The primary causes of this decrease were the reduced energy consumption during the economic downturn and increased use of natural gas relative to coal for electricity generation (EPA, 2011).

On-going scientific research has identified the potential effects of anthropogenic GHG emissions such as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O) and several trace gasses; changes in biological carbon sequestration; and other changes due to land management activities on global climate. Through complex interactions on a global scale, GHG emissions cause a net warming effect of the atmosphere, primarily by decreasing the amount of heat energy radiated by the earth back into space. Although natural GHG atmospheric concentration levels have varied for millennia (along with corresponding variations in climatic conditions), industrialization and burning of fossil carbon sources have caused GHG concentrations to increase.

This incremental contribution to global GHG gases cannot be translated into effects on climate change globally or in the area of this site-specific action. As oil and gas production technology continues to improve, and because of the potential development of future regulation or legislation, one assumption is that reductions in the rate or total quantity of GHG emissions associated with oil and gas production are likely. As stated in the direct/indirect effects section under climate change, the assessment of GHG emissions and the resulting impacts on climate is an ongoing scientific process. It is currently not feasible to know with certainty the net impacts from the proposed action on global or regional climate—that is, while BLM actions may contribute to the climate change phenomenon, the specific effects of those actions on global climate are speculative given the current state of the science. Therefore, the BLM does not have the ability to associate an action's contribution in a localized area to impacts on global climate change. Further, an IPCC assessment states that difficulties remain in attributing observed temperature changes at smaller than continental scales. 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.

Currently, global climate models are inadequate to forecast local or regional effects on resources (IPCC, 2007; CCSP, 2008). However, there are general projections regarding potential impacts to natural resources and plant and animal species that may be attributed to climate change from GHG emissions over time; however these effects are likely to be varied, including those in the southwestern United States (Karl et al., 2009). For example, if global climate change results in a warmer and drier climate, increased particulate matter impacts could occur due to increased windblown dust from drier and less stable soils. Cool season plant species' spatial ranges are predicted to move north and to higher elevations, and extinction of endemic threatened/endangered plants may be accelerated. Due to loss of habitat or competition from other species whose ranges may shift northward, the population of some animal species may be reduced or increased. Less snow at lower elevations would likely impact the timing and quantity of snowmelt, which, in turn, could impact water resources and species dependant on historic water conditions (Karl et al., 2009).

The *Final Colorado Greenhouse Gas Inventory and Reference Case Projections 1990-2020* estimates that approximately 6.5 million metric tons of GHGs from the natural gas industry and .18 million metric tons of GHGs from the oil industry are projected in 2010 as a result of oil and natural gas production, processing, transmission and distribution (CCS, 2007).

When compared to the total GHG emission estimates from the total number of oil and gas wells in the State, the average number of oil and gas wells drilled annually in the Field Office and

associated GHG emission levels, represent an incremental contribution to the total regional and global GHG emission levels. The number of oil and gas wells that would eventually result from the proposed action would therefore likely represent an even smaller incremental contribution to GHGs emissions on a global scale.

The impact of climate change on BLM resources depends upon the location of the affected resource, its vulnerability and resiliency to change, and its relationship to the human environment. There will be positive and negative impacts of climate change, even within a single region. For example, warmer temperatures may bring longer growing seasons in some regions, benefiting farmers who can adapt to new conditions, but potentially harming native plant and animal species. In general, the larger and faster the changes in climate are, the more difficult it will be for human and natural systems to adapt.

According to the Colorado Water Conservation Board, temperatures in Colorado increased by approximately 2° F between 1977 and 2006. As reported in the 2007 Colorado Climate Action Plan developed by the state of Colorado, climate change effects within Colorado have included:

- shorter and warmer winters with a thinner snowpack and earlier spring runoff;
- less precipitation overall with more falling as rain;
- longer periods of drought;
- more and larger wildfires;
- widespread beetle infestations;
- rapid spread of West Nile virus due to higher summer temperatures.

In relation to a 1950-1999 baseline, climate models project that Colorado will warm 2.5° F by 2025, and 4° F by 2050. The 2050 projection indicates that summers will warm by +5° F, and winters by 3° F (Colorado Water Conservation Board 2008). Future predicted climate change impacts on Colorado include:

- more frequent and longer lasting heat extremes that stress electrical utility demands
- longer and more intense wildfire seasons
- midwinter thawing and earlier melting of snowpack
- lower river flows in summer months
- water shortages for irrigated agriculture
- slower recharge of groundwater aquifers
- migration of plant and animal species to higher elevations
- more insect infestation in forests.

### **Mitigation**

Oil and or gas may be developed and produced subsequent to the proposed lease sale and ultimately be utilized to produce energy. The BLM will evaluate potential emissions of regulated air pollutants (including GHGs) associated with the development of the oil and gas resources in a subsequent analysis at the APD stage of the lease life cycle.

Conditions of approval (COAs) may be added at the permitting stage based on the review of site specific proposals, other applicable analysis of future exploration/development activities, or if new information becomes available and the mitigation proposed is supported by concise site specific NEPA analysis. COAs cannot take away lease rights or prevent development. All

proposed activities including, but not limited to, exploration drilling activities would be subject to local, State, Tribal, and Federal air quality laws and regulations.

Project specific emissions can generally be quantified and compared to overall sector, regional, or global (GHGs) estimates, as well as current air quality monitoring data and trends to provide some measures/context of the level and significance of any potential impacts. The BLM will continue to evaluate climatic variability and change in the future, and apply appropriate management techniques and policy to address changing conditions as developments occur.

### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on climate change would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on climate change would be similar to those described under the Proposed Action.

### **Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

### **No Action Alternative**

There would be no impacts to climate change from the No Action Alternative.

## **3.3.2 WILD AND SCENIC RIVERS**

### **Affected Environment**

Congress enacted the Wild and Scenic Rivers Act (WSRA) (Public Law 90-542; 16 U.S.C. 1271 et seq.) on October 2, 1968 to address the need for a national system of river protection. The legislation was the outgrowth of a nationwide conservation movement that took place during the 1950s and 1960s, as well as a response to the numerous diversion projects and dams constructed along American waterways during the 1930s through 1960s. The WSRA stipulates that the free-flowing condition, water quality, and outstandingly remarkable values (ORVs) of selected waterways should be preserved and protected for the benefit and enjoyment of present and future generations.

As part of the revision of the Uncompahgre Resource Management Plan (ongoing), BLM is required by WSRA to inventory its rivers and streams to determine their eligibility for inclusion in the NWSRS. The study and designation of watercourses under the WSRA consists of a multi-step process: eligibility determination → suitability determination (in the RMP) → recommendation to Secretary of the Interior → congressional action. In order to be determined as eligible, watercourses must be free-flowing and possess one or more ORV.

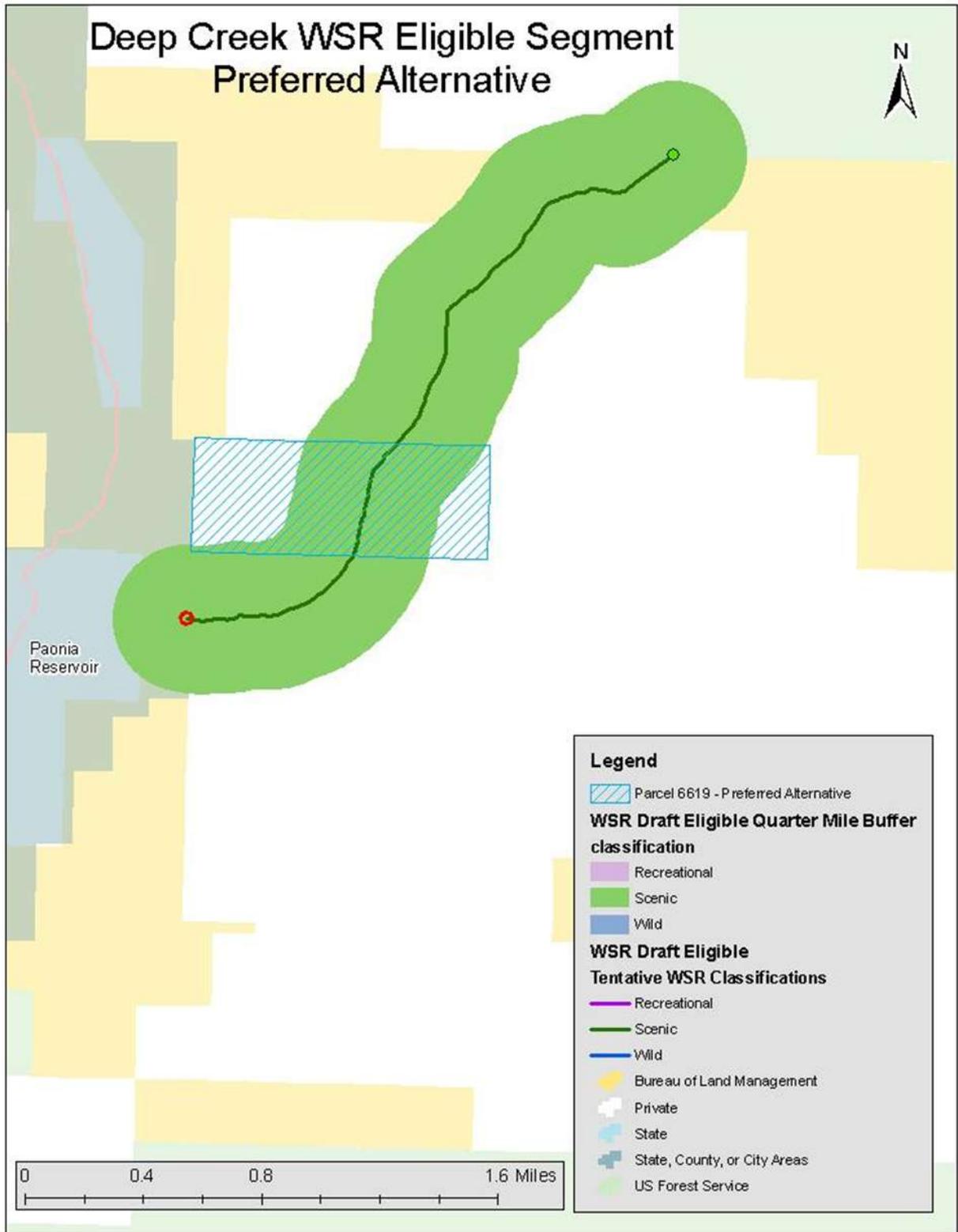
In June 2010 the Final Wild and Scenic Eligibility Report for the Uncompahgre Planning Area was released. One segment, Deep Creek, determined to be eligible for inclusion in the National Wild and Scenic River System (NWSRS), crosses lease sale parcel 6619 in both the proposed action and the preferred alternative (see figure 3.2). The Deep Creek segment is free-flowing as defined by the act, and possesses a fish ORV.

The next phase of the Wild and Scenic River study process is the *suitability* determination. The final suitability determinations for the streams in the Uncompahgre planning area will be included in the Record of Decision for the Uncompahgre Field Office Resource Management Plan Revision. Until the determination is finalized, BLM will manage eligible segments under interim protections. Specifically for mineral leasing, interim protections include protection of the free-flow of the stream, water quality and the ORV so as to prevent the segment from losing its eligibility, and to keep the “scenic” classification from degrading to “recreational.”

If the Deep Creek segment is determined to be suitable, interim protection will continue until Congress or the Secretary of Interior act to either designate the segment as a Wild and Scenic River or release it from further study. If it is determined to be not suitable, management of the segment reverts to other resource management plan prescriptions. Interim protection under WSRA will no longer apply.

For more information on the eligibility determination for Deep Creek, see the Final Wild and Scenic River Eligibility Report. The report is available at:  
[http://www.blm.gov/co/st/en/fo/ufo/wild\\_and\\_scenic\\_river.html](http://www.blm.gov/co/st/en/fo/ufo/wild_and_scenic_river.html) .

**Figure 3.2 – Deep Creek Wild and Scenic River Eligible Segment**



## **Environmental Effects**

### **Proposed Action**

The lease sale itself creates no on-the-ground changes, and therefore would have no effect on the free-flow of the segment, its water quality, or its ORV. Nothing in this action would cause the tentative classification of “scenic” to change.

### **Cumulative Effects**

There will be no cumulative effects to Wild and Scenic Rivers from the proposed action of leasing the parcels under consideration.

### **Mitigation**

The segment has a tentative classification of “scenic” due to the relatively natural and undeveloped nature of the study area corridor. If the lease were to be purchased and subsequently developed, protection of the stream segment’s free flow, water quality, and fish ORV would be required. And lease notice UFO-LN-12, Wild and Scenic Rivers is proposed to assist in mitigating impacts from oil and gas development activities specifically upon parcel 6619 in the ½ mile wide study area corridor of the segment of Deep Creek determined as “eligible” for inclusion in the National Wild and Scenic River System.

All development and related activities would be required to take place more than ¼ mile from the river segment. Measures must be taken to ensure that the free-flow of the stream and its water quality are not negatively affected. Measures must also be taken to ensure that the fish Outstandingly Remarkable Value is protected.

The relatively natural and undeveloped character of the segment’s study area (1/2 mile wide corridor) would also have to be preserved in order to keep the segment’s preliminary classification of “scenic” from degrading to “recreational.”The study area may not be altered to the point where it is no longer natural and undeveloped, necessitating reclassification to “recreational.”

### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on wild and scenic rivers would be similar to those described under the Proposed Action.

### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on wild and scenic rivers would be similar to those described under the Proposed Action.

### **Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

### **No Action Alternative**

There would be no effect on this segment.

## **3.3.3 CULTURAL RESOURCES**

### **Affected Environment**

Complete Class III Cultural Resource Inventories (100% pedestrian survey) of the proposed lease parcels have not been completed. Of the ca. 30,000 acres proposed in these lease sales, some 6,000 acres (20%) within those leases have been inventoried at a Class III level. Recorded cultural resource properties in the proposed lease area are dominated by historic period sites with only one recorded prehistoric site having been evaluated as eligible for National Register nomination.

The proposed leases are mostly within the higher elevation cultural zone of uplands and foothills. Vegetation in the area is dominated by scrub oak benchlands and some higher elevation steppe and aspen forest. The entire area is situated within the low probability zone for cultural resource presence.

The area evaluated for cultural resources during the Class I (records search) for this lease sale included all lands within a section proposed for lease, even though some or most of the acreage within those section is not proposed for lease. This is to ensure that all cultural properties in the area may be evaluated and trends established.

Cultural properties may also be discovered during future APD oriented inventories. Any or all of these sites may be tested for National Register eligibility, and a recommendation will be made as to the potential for secondary impacts. BLM's preferred alternative calls for site avoidance in order to protect and preserve cultural resource values. Sites may also be susceptible to secondary impacts arising from increased accessibility. In those cases where site avoidance is impractical or undesirable, BLM will implement the appropriate mitigation measures after consultation with SHPO and Ute Tribal authorities.

### **Environmental Consequences**

#### **Proposed Action**

Within the sections evaluated for the propose action, there are 104 recorded cultural properties. Of these sites, 31 are Isolated Finds which are considered ineligible for National Register nomination. There are 73 recorded properties, of which seven sites have been evaluated as eligible for nomination – six historic period sites and one pre-historic open camp or lithic scatter. Of the remaining properties, there are 31 ineligible and 5 unevaluated historic period sites; 9 ineligible and 15 unevaluated prehistoric sites. There are also five properties listed on the National or State Registers of Historic Places, all are historic period buildings, and all are located outside the proposed lease parcels.

104 Recorded properties  
 31 Isolates  
 73 Recorded sites  
     Eligible sites:           6 Historic, 1 Pre-historic  
     Ineligible sites:         31 Historic, 9 Pre-historic  
 Unevaluated:           5 Historic, 15 Pre-historic  
     Listed (National or State)   5 Historic

The act of leasing oil and gas parcels has no direct potential for surface disturbance, and no effect to any known properties is anticipated from this action. Exploration and development activities that might be proposed as a result of a lease includes those which could physically disturb cultural resource sites (e.g., building well pads, access roads, installation of pipelines, etc.). The size of well pads would depend on the number of wells and the type of drilling that is being done. Access roads, pipelines and other infrastructure would be developed during both exploration and development activities.

The BLM is required by law and regulation to ensure that BLM initiated or BLM authorized actions do not inadvertently harm or destroy cultural resource values. Because most cultural resources are unidentified, irreplaceable, and highly sensitive to ground disturbance, it is necessary that the resources are properly identified, evaluated, and reported prior to any future activity that may affect their integrity or condition.

Before any APDs are approved for exploration or drilling, a Class III cultural resource survey would be undertaken to comply with Section 106 of the National Historic Preservation Act (NHPA). Both parcels would be subject to Exhibit CO-39 to protect cultural resources. The UFO requires a minimum 10 to 40-acre inventory block around proposed well locations, per its current standards and practices. This buffer typically allows for the relocation of proposed well pads more than 100 meters away from newly discovered sites potentially eligible for listing in the National Register of Historic Places (NRHP). Proposed construction or operation activities associated with development of these lease parcels would be relocated to avoid potentially-eligible sites by at least 100 meters, or that any related undertaking's Area of Potential Effect (APE) could be situated to avoid such sites.

**Cumulative Effects**

Longer term cumulative effects are similar to those addressed above. In addition, the cumulative effects of development of a particular lease may include secondary impacts to cultural sites arising from increased visitation to the area, better access to previously inaccessible sites, increased erosion of surface properties from road and pad construction and the increased potential for inadvertent and/or deliberate vandalism of historic properties. The potential for and severity of these secondary impacts cannot be analyzed at the lease stage, only when an APD or plan of development is submitted. Lessees must comply with existing laws and regulations, and any potential cumulative and secondary effects to cultural resources will be addressed when development plans are submitted for BLM approval.

### **Mitigation Measures**

If cultural resources are discovered during required Class III cultural resource inventories or during later construction or other operations, UFO archaeologists would consider the potential of the proposed activity to affect the site type(s) present and the NRHP eligibility determinations of each site potentially affected to formulate mitigations. Where resource conflicts are discovered, mitigations would likely include the relocation of the proposed well pad(s) or infrastructure to avoid potentially Eligible sites by more than 100 meters, or relocation such that the APE for the activity does not affect potentially-Eligible sites. Mitigations would be developed during the NEPA review of individual ground disturbing activities.

All lands offered for lease are subject to existing federal, state and local laws and regulations and to Exhibit CO-39 to protect cultural resources.

### **Preferred Alternative**

Within the sections evaluated for the BLM preferred alternative, there are 77 recorded cultural properties 26 of which are within the areas of proposed lease parcels. Of these sites, 19 are Isolated Finds which are considered ineligible for National Register nomination. Of the remaining 56 recorded properties, only 7 sites have been evaluated as eligible for nomination – six historic period sites and one pre-historic open camp or lithic scatter. Of the remaining 49 properties, there are 28 ineligible and 5 unevaluated historic period sites. There are also four properties listed on the National or State Registers of Historic Places, all are historic period buildings, and all are located outside the proposed lease parcels.

77 Recorded properties

19 Isolates

56 Recorded sites

Eligible sites: 6 Historic, 1 Pre-historic

Ineligible sites: 28 Historic, 5 Pre-historic

Unevaluated: 5 Historic, 7 Pre-historic

Listed (National or State) 4 Historic

The direct and indirect effects of the Preferred Alternative on cultural resources would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on cultural resources would be similar to those described under the Proposed Action.

### **Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

### **No Action Alternative**

There would be no impacts to cultural resources.

### **3.3.4 NATIVE AMERICAN RELIGIOUS CONCERNS**

#### **Affected Environment**

Historically, the North Fork Valley was home to Ute people ancestral to modern day people who may have a historic spiritual or religious connection to the lands. Sacred sites and Traditional Cultural Properties may be found in occupation areas or may be associated with favored landscapes and land forms.

#### **Environmental Consequences**

#### **Proposed Action**

As with cultural resources, there is some potential that any of the nominated parcels may contain cultural properties which may be found to be of Religious Concern by containing Native American Sacred sites, and Properties of Cultural and Religious Concern to one or more of the Native American tribes which historically inhabited the area.

Exploration and development activities that might be proposed as a result of a lease includes those which could physically disturb Native American religious sites (e.g., building well pads, access roads, installation of pipelines, etc.). While leasing in itself does not threaten potential Native American religious sites and values found within the area, previous cases suggest that consultation with the involved tribes should be accomplished before the lease sale in order to determine Native American concerns. BLM has sent informational letters to officials of the Northern Ute Tribe, Southern Ute Tribe and Ute Mountain Ute Tribe requesting their input, concerns and inviting those tribes to enter a consultation process if they so desire. The UFO has not yet received responses from the tribes to these consultation efforts and will not consider the Native American consultation process complete until all affected tribes have had an opportunity to comment.

#### **Cumulative Effects**

Analysis of cumulative effects to Native American religious concerns cannot be addressed until the nature of both the development actions and the concerns are known. Since there are no known concerns for this area it is unlikely that any cumulative impacts may occur. If, however, future consultations or investigations reveal the presence of such concerns, said concerns must be mitigated in consultation with the appropriate tribal, state and federal entities. Cumulative impacts to Native American Religious Concerns may include visual degradation of a landscape important in traditional religious practice, interruption of accessibility to a particular site and a change or alteration in the character of a site, place or landscape important to traditional beliefs and practices.

#### **Mitigation Measures**

All lands are subject to Exhibit CO-39 to protect resources of cultural and religious significance. Mitigation of Native American Religious Concerns will be developed in consultation with the affected tribal entities and the appropriate state and federal agencies.

### Preferred Alternative

The direct and indirect effects of the Preferred Alternative on Native American religious concerns would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

### Cumulative Effects

The cumulative effects of the Preferred Alternative on Native American religious concerns would be similar to those described under the Proposed Action.

### Mitigation

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

### No Action Alternative

There would be no effect to any known or anticipated Native American Religious Concerns.

## 3.3.5 FARMLANDS PRIME/UNIQUE

### Affected Environment

Farmland classification is conducted by the Natural Resources Conservation Service (NRCS) for the purposes of identifying the location and extent of the most suitable land for producing food, feed, fiber, forage and oil seed crops (National Soil Survey Handbook, 622.03(b)). Tables 3.7a and 3.7b below show the NRCS soil classifications within the lease parcel area.

**Table 3.7a NRCS Farmland Classification**

**Acres(approximate)**

Farmland of statewide importance	1325
Farmland of unique importance	1993
Not prime farmland	26354
Prime farmland if irrigated	411
Prime farmland if irrigated and drained	36
Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season	6

**Table 3.7b NRCS Farmland Classification-Private Only**

**Acres(approximate)**

Farmland of statewide importance	50
Farmland of unique importance	25
Not prime farmland	755
Prime farmland if irrigated	37

In a review of a 2011 aerial photo (NAIP, 2011), there are portions of the approximately 112 acres on private property within proposed lease parcels that are farmlands classified as **Prime**, **Unique** or of **Statewide Importance** and are irrigated.

### Environmental Consequences

### Proposed Action

The soils classified by the NRCS as **Prime, Unique** or of **Statewide Importance** that occur on BLM lands are generally situated above the existing irrigation system in the valley or are not irrigated. When these soils exist in areas with a developed irrigation water supply, only those soils that are irrigated are considered **Prime, Unique** or of **Statewide Importance** (National Soil Survey Handbook, 622.04(a)(3)).

On the 112 acres classified by the NRCS as **Prime, Unique** or of **Statewide Importance**, that occur on private property and are irrigated, the potential impacts would be similar to those described in 3.3.6 Soils/Environmental Consequences.

### Cumulative Effects

This lease sale, when combined with the past, present and reasonably foreseeable actions, could elevate the potential for deterioration of soil health and specifically soils classified by the NRCS as **Prime, Unique** or of **Statewide Importance**. Surface disturbance associated with oil and gas activities could magnify other impacts from activities on private and federal lands in the watershed. Other activities causing impacts to soils on BLM and Forest Service lands in the watershed include: coal mining, grazing, rights of ways, recreation and travel infrastructure. Impacts to soils also result from activities associated with private property in the watershed, including: cultivation, irrigation, livestock production, residential and commercial land development, coal mining, and oil and gas development. The types of impacts expected from other actions in the watershed would be similar to those described for the proposed action. The cumulative effect of all the impacts in the watershed could contribute to decreased soil health.

### Mitigation Measures

The same mitigation measures as described in 3.3.6 Soils/Mitigation would be applied to soils classified by the NRCS as **Prime, Unique** or of **Statewide Importance**. This would include a move of the well bore location up to 200 meters to avoid soils classified by the NRCS as **Prime, Unique** or of **Statewide Importance** when irrigated.

### Preferred Alternative

Tables 3.8a and 3.8b below show the NRCS soil classifications within the lease parcel area.

<b>Table 3.8a NRCS Farmland Classification</b>	<b>Acres(approximate)</b>
Farmland of statewide importance	1104
Farmland of unique importance	1760
Not prime farmland	16767
Prime farmland if irrigated	346
Prime farmland if irrigated and drained	15
Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season	6

<b>Table 3.8b NRCS Farmland Classification-Private Only</b>	<b>Acres(approximate)</b>
Farmland of statewide importance	50
Farmland of unique importance	23
Not prime farmland	641
Prime farmland if irrigated	35

In a review of a 2011 aerial photo (NAIP, 2011), there are portions of the approximately 107 acres on private property that are farmlands classified as **Prime, Unique** or of **Statewide Importance** and are irrigated. The impacts on the 107 acres that occur on private property and are irrigated, would be similar to those described in 3.3.6 Soils/Environmental Consequences.

#### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on Farmlands, Prime/Unique would be similar to those described under the Proposed Action.

#### **Mitigation**

Under the Preferred Alternative, the mitigation would be the same as those described under the Proposed Action.

#### **No Action Alternative**

There would be no impacts to Farmlands, Prime/Unique under the No Action Alternative.

### **3.3.6 SOILS**

#### **Affected Environment**

##### ***Soil Formations***

Soils within the lease parcel area are largely a product of the local geologic parent material, climatic conditions, and topographic position on the landscape. The dominant geologic formation is Mancos Shale, which weathers to produce fine-textured, silty clay loam soils. Mancos Shale is a sedimentary marine evaporite, naturally high in dissolved salts and selenium.



Figure 3.3 - Highly erodible Mancos Shale dominates the local landscape of the Adobes.

Figure 3.3 Mancos Shale shows typical Mancos Shale topography in an area known locally as “the Adobes.” The highly erodible nature of the shale is evidenced in the photograph by the natural rilling, gullying, and mass wasting. Steep slopes and sparse vegetation contribute to making the adobe hills vulnerable to elevated rates of erosion during summer months when monsoonal thunderstorm events occur.

Biological soil crusts are an important component of Mancos Shale soils, helping to stabilize the soil and inhibit wind and water erosion. A complex mosaic of cyanobacteria, green algae, lichens, mosses, microfungi, and other bacteria, the crusts also serve a critical role in nutrient cycling, water infiltration, and seedling germination (USDI 2001). Figure 3.4 depicts biological soil crust with a high level of development on soils derived from Mancos Shale.



Figure 3.4 - Biological Soil Crusts are a critical component of Mancos Shale.

In other areas within the lease sale area where adobes aren't present, deep soils with little rock content exist on mesa top interiors and alluvial valleys. Shallow rocky soils are commonly found on mesa rims and along the side slopes of canyons. Soils found at these higher elevations are typically classified as *Alfisols* (with a high level of subsoil development) and *Mollisols* (with a darkened organic matter-enriched surface). Soils found in lower adobe formations of the lease sale area have little organic matter throughout their vertical profile and are predominantly classified as *Aridisols* (found in dry climate regimes) and *Entisols* (with a limited profile development).

### ***Saline/Selenium Soils***

Selenium is a naturally-occurring soluble non-metal commonly found in marine sediments such as Mancos Shale. Easily mobilized salts are also a typical component of this formation. Selenium and salts can be mobilized by irrigation water application or surface-disturbing activities, and transported to nearby waterways through irrigation return, groundwater, or overland flows. Soils derived from Mancos Shale can have varying selenium and salt concentrations depending on the geologic parent material and soil member. Table 3.9 below was compiled from unpublished data collected in 2007 by the Colorado State Geological Survey (Morgan and Noe) in the nearby Gunnison Gorge National Conservation Area.

**Table 3.9 Stratigraphy and Chemical Characteristics of the Mancos Shale Formation in the Gunnison Gorge National Conservation Area**

Geologic Formation	Formation Member	Chemistry*		
<b>Mancos Shale</b>	Prairie Canyon	No data available		
	Smoky Hill	Moderate carbonate carbon, low sulfur, moderate selenium		
	Fort Hayes			
	Montezuma Valley	Highest carbonate carbon	Highest selenium	Soils developed on these members have higher salinity and selenium than other members
	Juana Lopez	Highest Sulfur		
	Blue Hill	Highest sodium		
	Fair Port			
	Bridge Creek	Low to moderate in all measured constituents		
	Green Horn	No data available		
	Graneros	No data available		
<b>Dakota Sandstone</b>				

\*The high, moderate, and low descriptors for the chemistry constituents are based on comparisons of the concentrations between the geologic members.

In addition to the variability of Selenium concentrations depending on the formation member, the solubility or ability to be transported can vary by location. The Colorado River Conservation District and Natural Resources Conservation Service prepared a GIS model depicting the potential solubility of various soils in the Mancos soil formation (CRWCD, 2010). The model uses soil chemistry, precipitation data (PRISM), and topography to rank the potential selenium solubility. Figure 3.5 depicts the areas with a higher rank or higher potential for transport.

Selenium presents a problem once soil formations with high solubility become saturated. Upon saturation, selenium is leached into nearby waterways. In the larger rivers, it becomes concentrated and accumulates in low to zero velocity habitats such as backwaters and enters the food chain. Agricultural practices in particular have resulted in both the Gunnison and Colorado rivers having higher than desired levels of selenium. Selenium concentrations of 4.9-7.0 µg/g dry weight in whole body fish from the Colorado River basin have been among the highest in the nation (Hamilton et al. 2002). Selenium bioaccumulates in fish tissue primarily via the consumption of food resources that contain elevated levels of the element. Colorado pikeminnow are especially at risk given their piscivorous (fish eating) nature. Research has shown that high selenium levels may adversely affect reproduction and recruitment of these fishes (Hamilton and Wiedmeyer 1990; Stephens et al. 1992; Hamilton and Waddell 1994; Hamilton et al. 1996; Stephens and Waddell 1998; Osmundson et al. 2000).

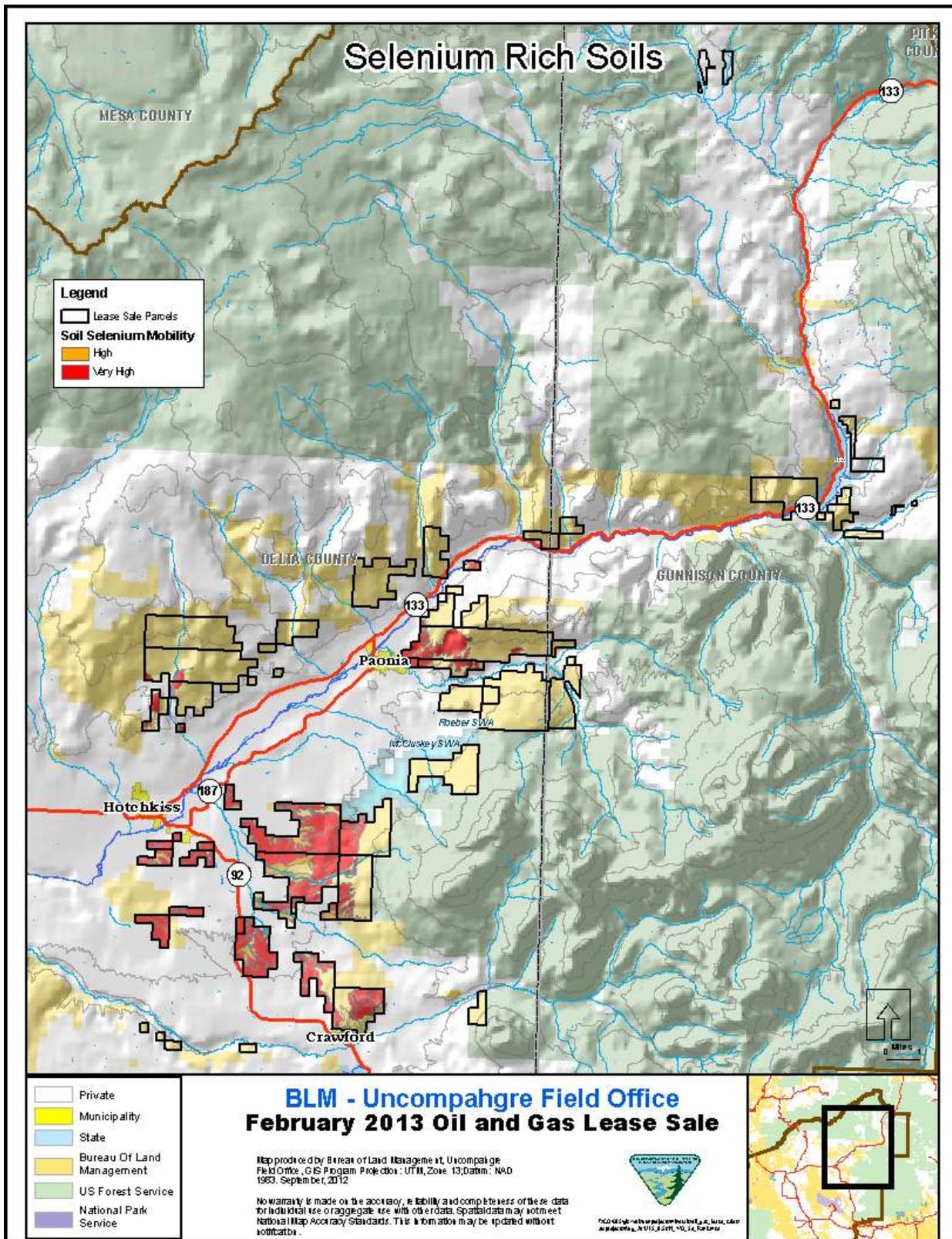


Figure 3.5 Selenium Mobility

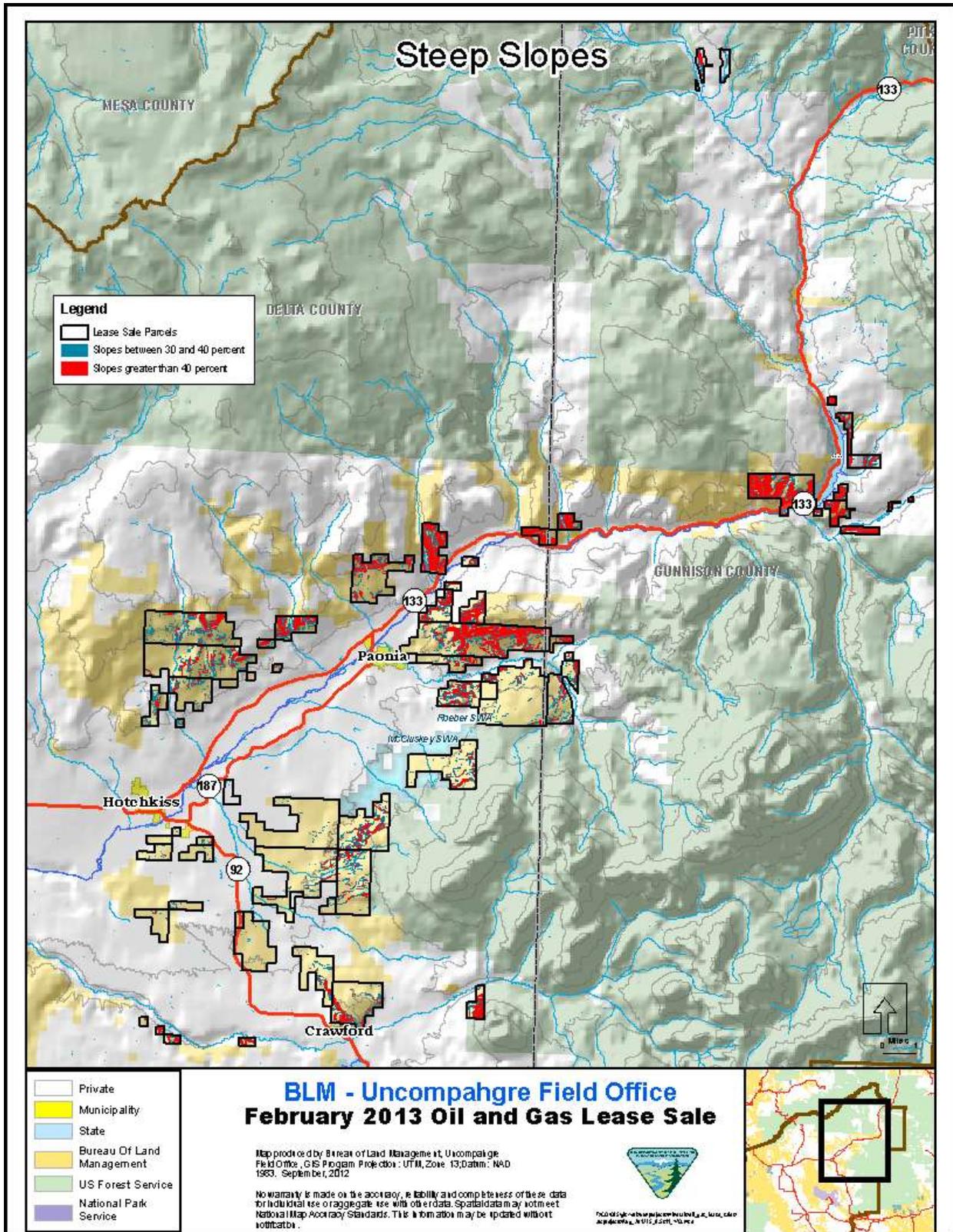


Figure 3.6 Steep Slopes

### ***Steep Slopes***

Slopes of greater than 30 percent pose concerns for reclamation and long-term soil health and productivity. As shown in Figure 3.6, 3,770 acres within the lease parcel area consist of terrain with slopes of between 30 and 40 percent and 5,903 acres have slopes of greater than 40 percent. Slopes in this range are prone to accelerated erosion and require additional protection measures to ensure that site productivity is restored and surface runoff is prevented.

### **Environmental Effects**

#### **Proposed Action**

While the act of leasing the parcels would produce no impacts, subsequent development of the leases would lead to surface disturbance from the construction of well pads, access roads, and pipelines. The scope and extent of the impacts from exploration and development would be analyzed in accordance with NEPA when proposed in an Application for Permit to Drill (APD). Some of the known potential impacts associated with oil and gas activities that could occur on these lease parcels include:

- Disturbance of the soil profile, resulting in the mixing of soil horizons and compaction.
- Removal of vegetation, exposing the soil to wind and water erosion.
- Increased sediment transport, through erosion processes such as sheet, gully, rill erosion, and mass movement.
- Disturbance on steep slopes, requiring cut and fill.
- Soil contamination with drilling and production fluids.
- Difficulty in reclamation associated with loss of soil productivity.

Development on Mancos Shale could increase the intensity of many of the impacts above due to the erosive nature of soils. Any activities associated with BLM management that would disturb identified Mancos shale soils and make them available for transport via erosion or sedimentation into water would likely increase selenium levels in nearby streams and rivers. The increase in selenium concentrations could impact downstream resources including endangered fish. In addition, reclamation on this soil formation is likely to be very difficult due to lack of moisture, steep slopes and disturbance of the biological soil crust.

#### **Cumulative Effects**

(See also Sections 3.3.9 Threatened, Endangered, and Sensitive Species and 3.3.12 Wildlife, Aquatic sections.) This lease sale, when combined with the past, present and reasonably foreseeable actions, could elevate the potential for deterioration of soil health. Surface disturbance associated with oil and gas activities could magnify other impacts from activities on private and federal lands in the watershed. Other activities causing impacts to soils on BLM and Forest Service lands in the watershed include: coal mining, grazing, rights of ways, recreation and travel infrastructure. Impacts to soils also result from activities associated with private property in the watershed, including: cultivation, irrigation, livestock production, residential and commercial land development, coal mining, and oil and gas development. The types of impacts expected from other actions in the watershed would be similar to those described for the proposed action. The cumulative effect of all the impacts in the watershed could contribute to decreased soil health.

## **Mitigation**

All or portions of parcels (6609, 6611, 6610, and 6615) if offered for lease would be subject to Exhibit UB-01 to protect Highly erodible and/or saline soil areas.

To reduce the potential environmental effects of transport of selenium into water populated by Threatened or Endangered fish species if development was to occur, lease stipulation Exhibit CO-34 would be applied to the following parcels; 6623, 6624, 6625, 6604, 6605, 6606, 6607, 6608, 6609, 6610, 6611, 6612, 6613, 6614, 6615, 6616, 6617, 6621.

The full text of CO-34 is located in Attachment F. If analysis of development proposals shows that activities in areas with high selenium concentrations would cause transport of selenium to surface waters containing Threatened or Endangered fish species consistent with the stipulation, the 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 its habitat. For example, BLM may require operators to submit for approval surface use plans that include measures to limit runoff or mobilization of saline/selenium soils. BLM may require measures to prevent the deep percolation of groundwater within saline/selenium soils, such as engineered leak prevention of drilling system pits containing fluids such as flowback and stimulation fluids, produced water, and cuttings. Surface discharge of produced water and mechanical evaporation may be prohibited.

To reduce the potential environmental effects of sediment transport described above if development were to occur, the following lease notice would be applied to all proposed parcels:

### **Steep Slopes UFO-LN-11**

Avoid surface occupancy on slopes of or greater than 40 percent, including slumps, landslides, and highly erosive soils (susceptible to wind and water erosion).

Apply the following protective measures on slopes of 30 to 39 percent, including slumps, landslides, and highly erosive soils (susceptible to wind and water erosion). Prior to surface disturbance on slopes of 30 to 39 percent, approval of a reclamation plan may be required by the BLM Authorized Officer. Such plans would require protective measures to accomplish the following:

- Restoration of Site productivity.
- Control of surface runoff .
- Protection of off-site areas from accelerated erosion such as rilling, gullyng, piping, and mass wasting.
- During extended wet periods, surface-disturbing activities may not be conducted.

In addition to the mitigation recommended above, protective measures may need to be considered when high levels of biological soil crust development is found during on-site field investigations. The level of crust development will be determined using the best available techniques and protective measures may include:

- A move of the well bore location up to 200 meters to areas with lower slopes, more vegetative cover and where less disturbance is likely to occur.

Additional regulations applying to oil and gas activities:

- Colorado Oil and Gas Conservation Commission Rules
- BLM Onshore Oil and Gas Regulations at 43 CFR Part 3160
- BLM Onshore Orders

**Finding on Public Land Health Standard 1 (Upland Soils)**

A complete Land Health Assessment was conducted in 2006 and 2007. The vast majority of the lease parcels “meet” Land Health Standard 1. Some areas were found to be “meeting with problems.” Those problems included, low plant cover and high amounts of bare soil. Small areas of the lease parcels were found to be “not meeting” the standard. Leasing these parcels would not alter this finding. Development of these lease parcels would increase surface disturbance, increasing the potential for deterioration of soil and vegetative health. Standard 1 would continue to be identified as met until further assessed.

**Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on soils would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

***Steep Slopes***

Slopes of greater than 30 percent pose concerns for reclamation and long-term soil health and productivity. As shown in Figure 3.7 Steep Slopes below, 2,903 acres within the lease parcel area consist of terrain with slopes of between 30 and 40 percent and 2,530 acres have slopes of greater than 40 percent. Slopes in this range are prone to accelerated erosion and require additional protection measures to ensure that site productivity is restored and surface runoff is prevented.

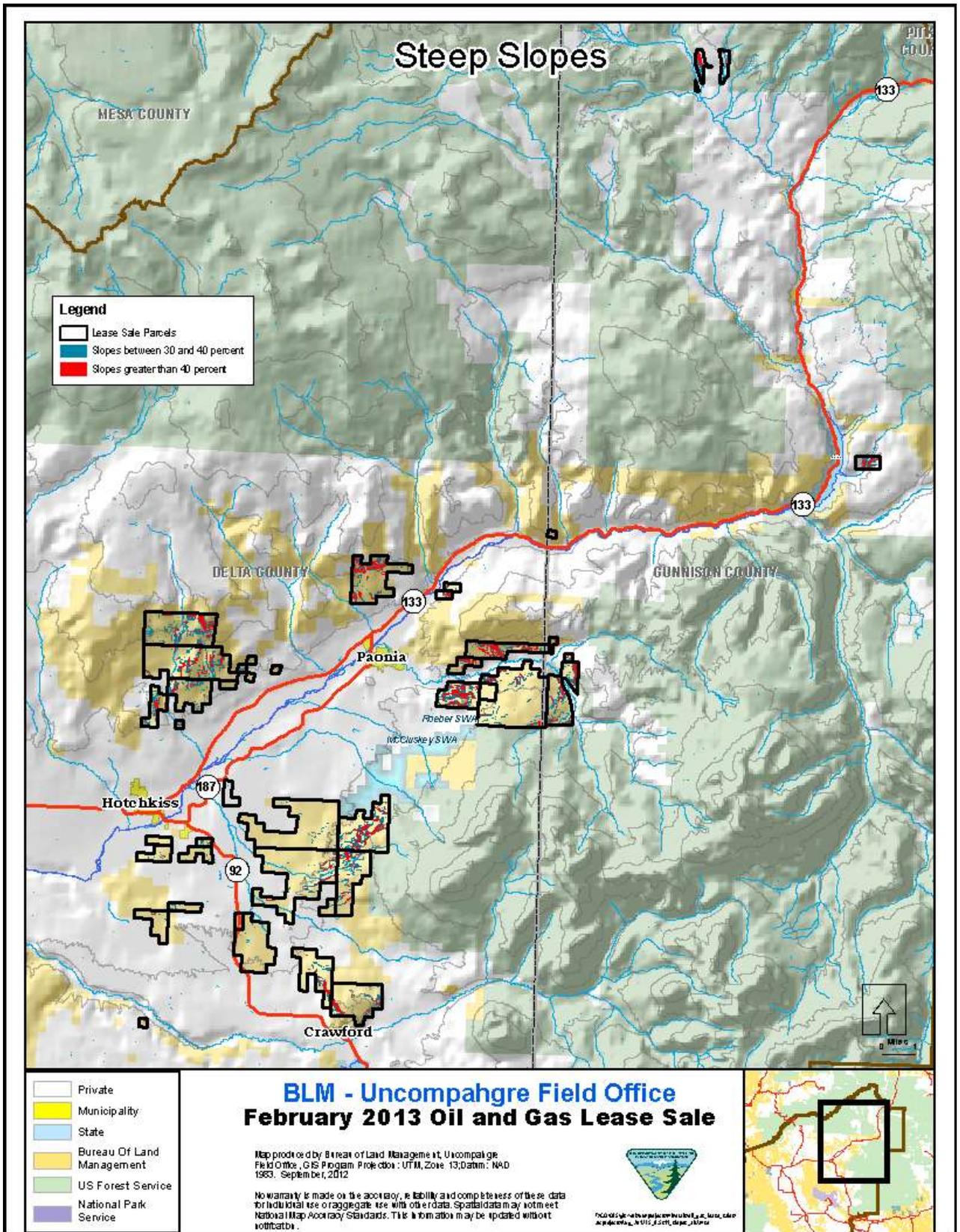


Figure 3.7 Steep Slopes – Preferred Alternative

### Cumulative Effects

The cumulative effects of the Preferred Alternative on soils would be similar to those described under the Proposed Action.

### Mitigation

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

### No Action Alternative

There would be no impacts to soils under the No Action Alternative.

## 3.3.7 VEGETATION

### Affected Environment

The parcels occur across a variety of vegetation types, as shown in Table 3.10a Major Upland Vegetation Types (BLM surface only) below. Acreages are estimated from a satellite-derived vegetation classification made from 2009 data. A complete description of the vegetation types can be found in the North Fork Land Health Assessment (BLM 2007).

**Table 3.10a Major Upland Vegetation Types and Acreages by Parcel (BLM surface only)\*.**

Parcel ID	Mountain Shrub	Greasewood/badland	Grass-Forb	Aspen-Doug fir	Pinyon-juniper	Pinyon-juniper /mountain shrub	Pinyon-juniper /sagebrush	Sagebrush	Saltbush
6623	25		188	6	14	87			
6624	128	536	833		310	196	389	5	
6625	89	62	615	17	64	947	340		6
6604	69	33	376	19	24	255	42		
6605		208	203		129	342	116		
6606	626	38	516	38	19	777	37		
6607		93	669			664	495		
6608		56	203		15	207	554		
6609	303	221	488	111	279	736	202	30	6
6610		201	319		256		241	261	927
6611		168	278		356	87	206	106	
6612	108	123	185	108	491	135	202	17	
6613		448	167		252	15	293	154	372
6614		206	124		199	82	73	15	491
6615		686	405		301	17	155	168	183
6616	105	53	24	152	51	338	23		
6622	526	15	237	582	26	142			

Parcel ID	Mountain Shrub	Greasewood/badland	Grass-Forb	Aspen-Doug fir	Pinyon-juniper	Pinyon-juniper /mountain shrub	Pinyon-juniper /sagebrush	Sagebrush	Saltbush
6617	116	108	497	10	137	847	318		
6618	265			21					
6619	164		31	153		80			
6620	5			88		9			
6621		42	6				17	6	

\*Only the major native vegetation types that occupy more than 5 acres within a parcel are identified.

Existing vegetation conditions vary across the unit. Approximately 25% of the public lands in the lease sale area support vegetation in reasonably good condition with few problems. Another 33% of the total lease parcel area has vegetation issues that are sufficient to cause concern that problems could spread and become more serious. An additional 33% of the area has problems so serious that the function, production, and habitat quality of the vegetation is very compromised. Conditions on the remainder of the area (<10%) have not been evaluated through the land health assessment process. Vegetation problems in the area are listed in order of decreasing prevalence: exotic plants, low cool season grass cover, low perennial forb cover, low shrub vigor, low vegetation diversity, heavy hedging on browse shrubs, noxious weeds, and excessive distance between plants.

## Environmental Effects

### Proposed Action

While the act of leasing the parcels would produce no impacts, subsequent development of the lease would lead to surface disturbance and vegetation removal from the construction of well pads, access roads, and pipelines. The scope and extent of the impacts would be analyzed at the time of exploration and development and would be proposed in an Application for Permit to Drill (APD). Some of the known potential impacts associated with oil and gas activities that could occur on these lease parcels include:

- Destruction and removal of native vegetation
- Damage to vegetation adjacent to disturbed sites through dust and sediment deposition, and erosion from altered site hydrology
- Increased vulnerability to weed infestation
- Altered wildlife use patterns and the secondary impacts to vegetation
- Increased amounts of young age class vegetation and introduction of reclamation species and genetics from non-local populations
- Impacts from weed control on non-target plants

These impacts occur in an amount commensurate with the level of oil and gas development. With appropriate COAs, all developed land ultimately will undergo reclamation, albeit in some

instances up to 30 years after initial disturbance. Success of reclamation varies depending on many factors including soil type, slope, vegetation type, weather patterns, and seed availability. Generally, reclamation is more successful at higher, wetter locations and on sites with deeper, more organic soils. Deferral of 384 acres of parcel 6622 will reduce the amount of mountain shrub potentially impacted in this parcel by 105 acres, grass-forb by 80 acres, aspen-Douglas fir by 114 acres, and pinyon-juniper/mountain shrub by 51 acres.

### **Cumulative Effects**

This lease sale, when combined with the past, present and reasonably foreseeable actions will elevate the potential for deterioration of vegetation health in the region through incremental reductions in quality and continuity of native plant communities. If these leases are developed, vegetation disturbance associated with oil and gas activities could magnify other impacts in the watershed that are taking place on private and federal lands. Additional impacts to vegetation on BLM and Forest Service lands in the watershed include those associated with wildfire, vegetation treatments, coal mining, livestock grazing, rights of ways, recreation and travel infrastructure. Impacts to vegetation which result from activities on private property in the watershed include: cultivation, irrigation, livestock production, residential and commercial land development, coal mining, and oil and gas development.

### **Mitigation**

Conditions of Approval (COAs), including reclamation and revegetation procedures, are developed at the well permitting stage and are followed throughout the life of the development. These COAs generally include plans for interim reclamation, re-seeding, re-contouring, soil stabilization on the site, and long term reclamation.

### **Finding on Public Land Health Standard 3 (Plant and Animal Communities)**

A complete Land Health Assessment was conducted in 2006 and 2007. Approximately 25% of lands within the proposed lease sale area were found to meet Standard 3 for vegetation health, 33% meet Standard 3 but with some problems, and another 33% were found to not meet Standard 3. Leasing these parcels would not alter the current status. Development of the lease parcels would increase surface and vegetation disturbance, and exacerbate existing land health problems. In heavily developed areas, it is likely that overall conditions would decline enough to reduce the Land Health status beyond current ratings.

### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on vegetation would be similar to those described under the Proposed Action. Table 3.10b Major Upland Vegetation Types and Acreages by Parcel shows the vegetation types in the parcels proposed for leasing under this alternative. Approximately 14% of the public lands having BLM surface in the lease sale area under this alternative support vegetation in reasonably good condition, another 49% of the area has vegetation issues that are sufficient to cause concern, and an additional 37% of the area has substantially compromised vegetation function, production, and habitat quality. The remaining 7% has not been evaluated. It is assumed that less development would occur under the Preferred Alternative than under the Proposed Action and therefore impacts would be proportionately reduced.

**Table 3.10b Major Upland Vegetation Types and Acreages by Parcel.**

<b>Parcel ID</b>	<b>Mountain Shrub</b>	<b>Greasewood/badland</b>	<b>Grass-Forb</b>	<b>Aspen-Doug fir</b>	<b>Pinyon-juniper</b>	<b>Pinyon-juniper /mountain shrub</b>	<b>Pinyon-juniper /sagebrush</b>	<b>Sagebrush</b>	<b>Saltbush</b>
6623	12	3	50	5	2	15	2		
6624		109	154		92	47	159		
6625	84	27	138	20	5	872	162		6
6604	71	33	354	18	23	257	42	1	
6605		128	80	1	107	336	83	1	
6606	619	40	501	38	19	782	37	3	
6607	1	81	540		5	662	443		
6608		54	199		15	208	554		1
6609	8	179	278		147	276	125	41	6
6610		200	320		247		240	260	902
6611		127	212		216	52	198	58	3
6612		104	151		400	112	181	17	
6613		445	170		245	15	297	154	373
6614		206	98		141	4	46	18	490
6615		686	367		302	17	154	168	190
6616		17	1		12	20	1		
6617	89	41	211		53	507	229		
6618	265			22		1			
6619	96		2	59		23			
6621		42	7				17	6	4

**Cumulative Effects**

The cumulative effects of the Preferred Alternative on vegetation would be similar to those described under the Proposed Action.

**Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

**No Action Alternative**

There would be no impacts to vegetation under the No Action Alternative.

### 3.3.8 INVASIVE/NON-NATIVE SPECIES

#### **Affected Environment**

State A and B listed noxious weeds known to occur in the area of the proposed lease sale are sulfur cinquefoil (*Potentilla recta*), musk thistle (*Carduus nutans*), bull thistle (*Cirsium vulgare*), oxeye daisy (*Chrysanthemum leucanthemum*), yellow toadflax (*Lineria vulgaris*), perennial pepperweed (*Lepidium latifolium*), scentless chamomile (*Matricaria perforate*), yellow starthistle (*Centaurea solstitialis*), hounds tongue (*Cynoglossum officinale*), Russian knapweed (*Acroptilon repens*), hoary cress (*Cardaria draba*), and jointed goatgrass (*Aegilops cylindrica*). State C listed weeds known to occur in the proposed lease sale area include common burdock (*Arctium minus*), field bindweed (*Convolvulus arvensis*), Halogeton (*Haolgeton glomeratus*), cheatgrass (*Bromus tectorum*), and common mullein (*Verbascum thapsus*). Spotted knapweed (*Centaurea maculosa*), is in the vicinity but not directly on any of the proposed lease parcels.

#### **Environmental Effects**

##### **Proposed Action**

The act of leasing oil and gas parcels has no direct potential for the introduction of new noxious weeds into the area or the spreading of noxious weeds within the area. However, exploration and development activities that might be proposed as a result of leasing include activities which could physically disturb the soil thus increasing the prospect of introducing and establishing noxious weeds into areas of disturbance or along roadways (e.g., building well pads, access roads, installation of pipelines, etc.).

##### **Cumulative Effects**

The lease sale associated with the future potential APDs could introduce new noxious weeds into the area and continue to spread noxious weeds throughout the lease sale area. These actions when combined with the disturbances of the past, present and reasonably foreseeable future could contribute to the introduction and spread of noxious weeds across the proposed lease sale area. However, conditions of approval at the development phase are expected to minimize these impacts.

##### **Mitigation**

Upon submission and approval of an APD, Conditions of Approval would be attached to the permit on a case-by-case basis to ensure new noxious weeds are not introduced into the area or existing noxious weeds are not spread across the landscape. BMPs, such as pre-inventory and treatment of noxious weeds prior to ground disturbing activities, or required power washing of vehicles before entering the lease would be applied when necessary.

##### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on invasive/non-native species would be similar to those described under the Proposed Action. It is assumed that less development would occur under the Preferred Alternative than under the Proposed Action and therefore impacts would be proportionately reduced.

### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on invasive/non-native species would be similar to those described under the Proposed Action.

### **Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

### **No Action Alternative**

There would be no impacts to Invasive/Non-native species under the No Action Alternative.

## **3.3.9 THREATENED, ENDANGERED, AND SENSITIVE SPECIES**

### **Affected Environment**

Federally listed threatened, endangered or candidate species that potentially could occur or have potential habitat in the vicinity of lease parcels include Canada lynx, greenback cutthroat trout, Colorado hookless cactus, and Gunnison sage grouse (Table 3.11, TES1 below). The following species are currently not expected within the planning area: Mexican spotted owl (*Strix occidentalis lucida*), yellow-billed cuckoo (*Coccyzus americanus*), black-footed ferret (*Mustela nigripes*), Gunnison's prairie dog (*Cynomys gunnisoni*), North American wolverine (*Gulo gulo luscus*), humpback chub (*Gila cypha*), Colorado pikeminnow (*Ptychocheilus lucius*), razorback sucker (*Xyrauchen texanus*), bonytail chub (*Gila elegans*), and clay-loving wild buckwheat (*Eriogonum pelinophilum*). No further discussion of these species will follow.

Greenback cutthroat trout (GBCT) are were thought to be in Anthracite, Deep and Terror Creeks. Anthracite Creek (parcel 6622) is classified by Colorado Parks and Wildlife (CPW) as “Greenback Cutthroat Trout, present; Non-Natives are Present; Non-Native Stocking.” The Deep Creek reach within parcel 6619 has no Greenback status as classified by CPW. The Terror Creek reach within parcel 6617 is classified as “Greenback Cutthroat Trout, present; Non-Natives not Present.” New genetic research has brought to light new information on the distribution of native cutthroat trout species across Colorado. Metcalf et al. (2012) appears to indicate that the Uncompahgre Field Office does not contain any populations of pure Greenback cutthroat trout. The status of native cutthroat trout within the area of this lease sale is at this time uncertain, but are most likely to be considered Colorado cutthroat trout (BLM Sensitive Species). Existing stipulations will provide for protections for these populations as the species’ status is evaluated by USFWS and the scientific community.

Habitat for several BLM sensitive species could potentially occur in the vicinity of lease parcels, including potential habitat for roundtail chub, bluehead sucker, flannelmouth sucker, canyon tree frog, northern leopard frog, Colorado desert-parsley, spotted bat, Townsend’s big-eared bat, fringed myotis, white-tailed prairie dog, northern goshawk, Ferruginous hawk, Brewer’s sparrow, midget-faded rattlesnake, and milk snake. The lease parcels also contain known breeding territories for golden eagle (parcel 6623, 6624 and 6615) and peregrine falcon (parcel 6612). Any activities within this area could also affect connected habitats for populations of BLM sensitive roundtail chub, bluehead sucker, and flannelmouth sucker.

Colorado river cutthroat trout (CRCT) are known to be in Deep, Henderson and Terror Creek. Deep creek contains a CRCT core population approximately 2 miles upstream from parcel 6619. Terror creek contains a CRCT core population approximately 1.3 miles upstream from parcel 6617. Henderson creek contains a CRCT core population approximately 1 mile downstream of parcel 6618. All parcels are covered under the Colorado River Cutthroat Trout Conservation Agreement (CRCT Conservation Team 2006). This agreement sets goals and objects for the various signatories to work together to assure the long-term viability of CRCT throughout their historic range by implementing where possible management actions detailed in the CRCT Conservation Strategy (CRCT Conservation Team 2006b). The project area is within the Gunnison Geographic Management Unit, and predominantly in the North Fork Gunnison second level hydrologic unit. Portions of parcels 6612 and 6614 are within the Upper Gunnison River second level hydrologic unit.

**Table 3.11 TES1. Potential Special Status Species by Proposed Parcel.**

Parcel IDs	6623	6624	6625	6604	6605	6606	6607	6608	6609	6610	6611	6612	6613	6614	6615	6616	6622	6617	6618	6619	6620	6621
<b>Aquatic TES Species</b>																						
Aquatic Habitat Recov. and Conserv. Waters													X	X			X					
High Selenium Concentrations		X <sup>2</sup>		X	X	X	X	X	X	X	X	X <sup>2</sup>	X	X <sup>2</sup>	X			X <sup>2</sup>				X
<b>Federally Listed Species</b>																						
Lynx Analysis Unit									X			X					X <sup>2</sup>	X				
Lynx Denning/Winter Habitat												X										
Lynx Potential Habitat																	X	X				
Lynx Winter Habitat																	X <sup>2</sup>	X				
Greenback cutthroat trout																	X	X		X		
Plant Potential rare plant species ( <i>Sclerocactus glaucus</i> )	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Gunnison Sage Grouse Historic Habitat	X <sup>2</sup>	X <sup>2</sup>	X	X	X	X	X	X	X	X	X	X <sup>2</sup>				X <sup>2</sup>		X <sup>2</sup>				
Gunnison Sage Grouse Potential													X	X <sup>2</sup>	X							X
<b>Special Status Species (BLM, Migratory Birds)</b>																						
Potential habitat for roundtail chub, bluehead sucker, flannelmouth sucker	X		X	X		X	X	X	X		X	X	X	X	X		X	X	X	X		
Roundtail Chub Restricted Waters																X		X				
Colorado River cutthroat trout																		X <sup>2</sup>		X <sup>2</sup>		
Colorado River cutthroat trout expansion habitat	X	X	X	X	X	X			X	X		X					X	X	X	X		
Potential habitat for canyon tree frog, northern leopard frog	X		X	X		X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	
Bald eagle winter foraging area	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X	X	X	X	X	X	X	X	X <sup>2</sup>	X	X <sup>2</sup>	X	X <sup>2</sup>						
Bald eagle winter concentration	X <sup>2</sup>	X			X					X				X		X	X <sup>2</sup>	X <sup>2</sup>				
Bald eagle roost site										X												
Peregrine falcon nesting territory													X <sup>2</sup>									
Potential northern goshawk habitat																						
Potential Ferruginous hawk habitat	X	X		X	X	X	X	X	X	X	X	X <sup>2</sup>	X	X <sup>2</sup>	X	X	X	X <sup>2</sup>				X
Potential Brewer's sparrow habitat	X <sup>2</sup>			X	X	X			X	X	X	X <sup>2</sup>	X	X	X		X <sup>2</sup>					X
Known sensitive plant locations ( <i>Lomatium concinnum</i> )		X			X				X				X	X	X	X						X

<b>Parcel IDs</b>	<b>6623</b>	<b>6624</b>	<b>6625</b>	<b>6604</b>	<b>6605</b>	<b>6606</b>	<b>6607</b>	<b>6608</b>	<b>6609</b>	<b>6610</b>	<b>6611</b>	<b>6612</b>	<b>6613</b>	<b>6614</b>	<b>6615</b>	<b>6616</b>	<b>6622</b>	<b>6617</b>	<b>6618</b>	<b>6619</b>	<b>6620</b>	<b>6621</b>
Potential rare plant species ( <i>Lomatium concinnum</i> )	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X	X	X	X	X	X	X	X	X <sup>2</sup>	X	X <sup>2</sup>	X	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X	X <sup>2</sup>	X <sup>2</sup>	X
Potential habitat for spotted bat			X <sup>2</sup>				X	X		X		X <sup>2</sup>	X	X <sup>2</sup>	X			X <sup>2</sup>			X <sup>2</sup>	X
Potential habitat for Townsend's big-eared bat, fringed myotis	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X	X	X	X	X	X	X	X	X <sup>2</sup>	X	X <sup>2</sup>	X	X <sup>2</sup>		X <sup>2</sup>	X	X <sup>2</sup>	X <sup>2</sup>	X
Known white-tailed prairie dog towns		X			X				X	X	X		X	X	X	X						X
Potential white-tailed prairie dog habitat		X	X		X		X	X	X	X	X	X <sup>2</sup>	X	X <sup>2</sup>	X	X		X				
Golden eagle active nest sites	X	X			X																	

<sup>2</sup>Acres of impact reduced in Alternative B due to deferral

## **Environmental Effects**

### **Proposed Action**

The proposed action of leasing the proposed parcels has No Effect to any Federally listed species or critical habitat, and No Impact to BLM sensitive or migratory bird species. However, potential future development of the parcels may impact these species (Table 3.11 TES1). Since it is unknown if the parcels would be developed or the extent of the development, it is difficult to assess potential impacts to specific species. Site-specific analysis would be conducted at the APD stage to determine and to mitigate potential impacts to Special Status Species. At that time species specific Recovery Plans and Conservation Agreements would be reviewed for the species with potential impacts. Impacts could potentially include (but not be limited to) displacement into less suitable habitat, habitat fragmentation and habitat degradation. Noise and increased human activity could also disrupt breeding and nesting activities. Site-specific biological resource surveys would be required at the APD stage, and depending on the location and nature of the proposed development and results of the surveys, Endangered Species Act Section 7 consultation with USFWS would be required if development would impact Federally listed species.

Potential development of parcels in areas of high selenium concentrations with connection to surface waters could cause increased selenium levels in nearby streams and rivers. This has the potential to increase bioaccumulation of selenium in special status fish species adversely affecting reproduction and recruitment.

In 2009, the Fish and Wildlife Service issued a Programmatic Biological Opinion (PBO) under the Endangered Species Act to address the recovery of endangered fish species in the Gunnison River Basin. The PBO addresses the Bureau of Reclamation's Aspinall Unit operations as well as all other public and private uses in the Gunnison Basin. The primary requirements of the PBO are the reoperation of the Aspinall Unit and the implementation of a Selenium Management Program. The BLM is a signatory to a Memorandum of Understanding with the Bureau of Reclamation, State of Colorado, and local irrigation companies, to assist in the development and implementation of a long-range plan. In the MOU, the BLM agreed to, "Evaluate options to conform to a goal of no net new selenium loading from land exchanges, sales, and other actions involving public lands." At the APD stage through the NEPA process, proposed activities will be evaluated in terms of selenium loading and effects to endangered fish.

The mitigations below would reduce the potential impacts discussed above by modifying those actions in which analysis shows the potential to impact the Threatened or Endangered Species.

### **Cumulative Effects**

See Cumulative Effects sections of Soils, Vegetation, Invasive, Non-native species, Wetlands and Riparian and Water Quality sections for potential cumulative effects to TES species habitats. Threatened, Endangered and BLM Sensitive species are wildlife, fish and rare plant species for which there are concerns for their populations. The future effects from this lease sale as leases are developed, when combined with the past, present and reasonably foreseeable actions could increase effects from habitat fragmentation in the region through incremental increases in surface

disturbing activities, resulting in cumulative impacts to sensitive species and their habitats which may increase negative population trends in some species associated with the North Fork area.

Current levels of Selenium within the rare fish habitats in this region are already considered by USFWS and CPW to be impacting rare fish populations. The future effects from this lease sale as leases are developed, when combined with the past, present and reasonably foreseeable actions could elevate the Selenium concentrations in the region through incremental increases in surface disturbing activities, resulting in cumulative impacts to the recovery of rare fish species and their critical habitat.

**Mitigation**

If development of the lease were to occur, potential mitigation could include: timing limitations to protect sensitive species during critical time periods; completing threatened, endangered, and sensitive species presence and habitat surveys prior to construction, if potential habitat is determined to be present; completing surveys using BLM survey protocols; developing site-specific mitigation plans for any impacted threatened or endangered species.

To provide direction for mitigation should development occur, the following stipulations are included in the leases.

**Table 3.12. TES2 -Parcels with Stipulations and Lease Notices for TES species.**

Parcel IDs	6623	6624	6625	6604	6605	6606	6607	6608	6609	6610	6611	6612	6613	6614	6615	6616	6622	6617	6618	6619	6620	6621
CO-34 TES Species	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
UB-03 Bald Eagle	X	X			X					X				X		X	X	X				
LN-14 Bald Eagle Winter Roost										X												
LN-04 Raptor Nests	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LN-16 Wildlife, Aquatic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
LN-20 Surface Water Bodies	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

All parcels would be subject to Exhibit CO-34 to alert the lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal. Additionally, all parcels would be subject to recommendations and Conditions of Approval (COAs) at the time an APD to develop a well is under review by BLM to utilize remote telemetry equipment and related production equipment to reduce impacts from vehicular traffic.

To reduce the potential environmental effects to bald eagles if development were to occur, stipulation UB-03 (a no surface use seasonal timing limitation from December 1 through April 30 for bald eagle winter concentration areas) would be applied to parcels (6623, 6624, 6605, 6610, 6614, 6616, 6622, 6617):

To reduce the potential environmental effects described above if development were to occur, the following Lease Notice UB-LN-14 for bald eagle winter roost sites should be applied to proposed parcel 6610.

Development activities may be modified to prevent impacts to bald eagles protected by the Migratory Bird Treaty Act of 1918 (16 U.S. code, Sec. 703-712, as amended), and the Bald and Golden Eagle Protection Act (16 U.S. Code, Sec. 668-668d, 1940 as amended). In order to avoid violation of these statutes, the lessee should contact the BLM Authorized Officer prior to surveying or other surface activities on the lease tract.

To reduce the potential impact to special status fish species if development were to occur, stipulation CO-34 should be applied to all parcels. The full text of CO-34 is located in Attachment F. The BLM will rely on CO-34 to fulfill its obligations under the Endangered Species Act with respect to all listed species. Additionally, UFO-LN-16 (Aquatic Wildlife, Riparian Zones and Wetlands) and UFO-LN-20 (Surface Water Bodies), would apply to all parcels (except 6620 for UFO LN-16). The full text of these lease notices is located in Attachment F. The CRCT Conservation Agreement recommends that impacts outside the riparian zone should be considered as part of CRCT management and that Land Management agencies should work to mitigate adverse impacts of watershed activities on water quality, instream habitat, channel morphology, riparian areas, and population stability (CRCT Conservation Team 2006, pg 18). UFO-LN-16 and UFO-LN-20 will help to provide protections for CRCT as well as other special status aquatic species.

Should future NEPA analysis show that activities in areas with high selenium concentrations would cause transport of selenium to surface waters containing Threatened or Endangered fish species, utilization of Lease Stipulation CO-34 may implement modifications and/or COAs to the proposed activities to reduce those impacts. Consistent with Lease Stipulation CO-34, 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 its habitat. For example, BLM may require surface use plans to be approved by the Authorized Officer, which would include measures to limit runoff or mobilization on saline/selenium soils. BLM may require measures to prevent the deep percolation of groundwater within saline/selenium soils. Required measures may include engineered leak prevention of drilling system pits containing fluids such as flowback and stimulation fluids, produced water, and cuttings. Surface discharge of produced water and mechanical evaporation may be prohibited.

To reduce the potential impact to raptor species if development were to occur, Lease Notice LN UFO-04 should be applied to all parcels to notify lessees that raptor nests may exist on portions of the lease tracts. Completion of raptor surveys may be required using BLM approved methods prior to any ground disturbing activities. If raptor nests are present, COAs may be developed

using currently accepted buffer distances and/or seasonal constraints in the location of drilling operations to prevent impacts to golden eagles or other raptors protected by the Migratory Bird Treaty Act of 1918 (16 U.S. code, Sec. 703-712, as amended), or the Bald and Golden Eagle Protection Act (16 U.S. Code, Sec. 668-668d, 1940 as amended). In order to avoid violation of these statutes, the lessee should contact the BLM Authorized Officer prior to surveying or other surface activities on the lease tract.

#### **Finding on the Public Land Health Standard 4 (Threatened & Endangered Species)**

A complete Land Health Assessment was conducted in 2006 and 2007. Approximately 84% of lands within the proposed lease sale area were found to meet Standard 4 for T&E species health, 6% meet Standard 4 but with some problems, and another 10% were found to not meet Standard 4. Leasing these parcels would not alter the current status. Development of the lease parcels would increase surface and vegetation disturbance, may increase weed spread, decrease habitat suitability and cause additional areas to either not meet or show problems meeting land health standards. In heavily developed areas, it is likely that overall conditions would decline enough to reduce the Land Health status beyond current ratings. Site-specific analysis would be conducted at the APD stage to determine and to mitigate potential impacts.

#### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on T&E species would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced. Area of potential impact for Bald Eagle winter concentration habitat would be 1011.97 acres less under the preferred alternative (999.66.63 acres vs. 2011.63 acres under proposed action). Additionally, through deferral of parcels or portions of parcels for steep slope concerns, impacts to some species would be reduced (Table 3.11, TES1 above, footnote 2).

#### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on T&E species would be similar to those described under the Proposed Action, but reduced for some species through proposed deferrals (see Table 3.13).

#### **Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action. Acres covered under some stipulations are decreased due to areas of concern being deferred for steep slopes (Table 3.13, TES3).

**Table 3.13 TES3 -Parcels with TES species Stipulations and Lease Notices.**

Parcel IDs	6623	6624	6625	6604	6605	6606	6607	6608	6609	6610	6611	6612	6613	6614	6615	6616	6622	6617	6618	6619	6621
CO-34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
UB-03 Bald Eagle	D	X			X					X				X		X	D	X <sup>2</sup>			
LN-14 Bald Eagle Winter Roost										X											
LN-04 Raptor Nest Sites	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LN-16 Wildlife, Aquatic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
LN-20 Surface Water Bodies	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

<sup>2</sup>Acres of impact reduced in Alternative B due to deferral

D – Portion of parcel with this issue is deferred

**Finding on the Public Land Health Standard 4 (Threatened & Endangered Species)**

Under the Preferred Alternative the Finding on the Public Land Health Standard 4 would be the same as described under the proposed action.

**No Action Alternative**

There would be no impacts to special status species or their habitat from the No Action Alternative.

**3.3.10 MIGRATORY BIRDS**

**Affected Environment**

BLM Instruction Memorandum No. 2008-050 provides guidance towards meeting BLM’s responsibilities under the Migratory Bird Treaty Act (MBTA) and Executive Order (EO) 13186. The guidance emphasizes management of habitat for Species of Conservation Concern by avoiding or minimizing negative impacts, and restoring and enhancing habitat quality.

Various migratory bird habitats exist on the proposed parcels. A variety of migratory birds may utilize these vegetation communities during the nesting period (May through July) or during spring and fall migrations. The parcels provide potential habitat for several species on the USFWS’s Birds of Conservation Concern (BCC) List, the Colorado BLM State Director’s Sensitive Species List, and the Birds of Conservation Concern on the UFO List. These include potential habitat for bald eagle, ferruginous hawk, golden eagle, peregrine falcon, prairie falcon, burrowing owl, Lewis’ woodpecker, willow flycatcher, pinyon jay, juniper titmouse, veery, chestnut-collared longspur, black rosy-finch and Cassin’s finch. They also contain known breeding territories for golden eagle (parcel 6623, 6624 and 6615) and peregrine falcon (parcel 6612). The golden eagle is protected under the Bald and Golden Eagle Protection Act (16 U.S.C. sec. 668-668c).

## **Environmental Effects**

### **Proposed Action**

The proposed action of leasing would not impact any migratory bird species or their habitat, however, potential future development of the proposed leased parcel could impact migratory birds. Site-specific analysis would be conducted at the APD stage to determine and to mitigate potential impacts. If within appropriate habitats future activities occur, those activities could have the potential to affect nesting raptor and migratory bird species through habitat degradation and/or displacement of individual birds. Impacts to breeding birds would vary depending on needs for roosting, nesting, or foraging; the duration, intensity, daily, and seasonal timing; type of disturbance; and species-specific sensitivity to disturbance.

There is an established body of evidence that human activities and habitat alteration in close proximity to raptor nest sites, including golden eagle nest sites, may adversely impact nest success (Oxley et al. 1974, Bortolotti et al. 1984, Scott 1985, Knight and Skagen 1988, Watson and Langslow 1989, Holmes et al. 1993, Schomburg 2003, Fuller 2010). Golden eagles typically return to the same nest locations year-after-year, making the annual breeding success of this species sensitive to direct and inadvertent human disturbance and habitat alteration at existing nest sites (Megown et al. 2007). Protecting existing nest sites and the reproductive activities at those sites is critical for managing long-term golden eagle population trends in Colorado because the breeding success at these sites determines the number of juveniles entering the population each year.

Spatial buffers from development and other human activities are a proven management tool to address impacts on breeding activities at raptor nest sites (Richardson and Miller 1997, Romin and Muck 1999, Demarchi and Bentley 2005, BLM 2006, Fuller 2010). CPW has established Recommended Buffer Zones and Seasonal Restrictions for Raptors in Colorado (Klute 2009).

Habitat for other migratory birds could be lost as a result of potential future activities through surface disturbances. Habitat fragmentation could also occur, reducing the amount of suitable habitat. Due to the limited size of long-term surface disturbance resulting from potential activities, impacts to songbird habitat within the project area should be low. Noise produced by potential construction, drilling, and operational activities could deter birds from roosting, foraging, or nesting in the area. The specific intensity, duration, and frequency of noise will not be known until the BLM receives a development proposal. Impacts would vary over the life of any project, but would be most intense during construction activities which could last approximately one month per well.

### **Mitigation**

To reduce the potential effects to Migratory Birds or Special Status Raptor nest sites, the following mitigation measures on potential future development could be applied as conditions of approval at the time of development:

- Covering the entire surface of the reserve pit with bird netting that meets a minimum requirement of 1.5-inch mesh to exclude passerines and other small-sized birds;

- Maintaining bird netting for as long as there are liquids in the reserve pit;
- Limiting, if feasible, surface disturbing activities during the core breeding period for migratory birds (May 15 through July 15);
- Completing surveys within at least a 0.5-mile radius around all types of surface disturbance activity in potential habitat for the presence of nesting raptors;
- Project activities shall retain and avoid modifying identified cavity trees, snags, and perches in the project area;
- Hospital mufflers shall be used on pump-jacks, where applicable;
- Stacks and exhaust pipes to the dehydrators, separators, heaters, and production tanks and similar features shall be excluded from bird entry with appropriate durable, cone-shaped screening material;
- Operators shall keep all hatches/ doors closed to the production tanks when not in use;
- A preventative, containment system (e.g., a sturdy bucket) shall be placed under the take-out pipes of the condensate tanks to prevent fluid leakages onto the soil surface;
- Powerlines and transmission facilities design shall comply with guidelines in the publication, *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (<http://www.aplic.org/>).

To reduce the potential environmental effects described above for raptor species if development was to occur, Raptor Nest Site lease notice (UB-LN-04) should be applied to all parcels (see description above in TES section).

**Cumulative Effects**

See Cumulative Effects sections of Soils, Vegetation, Invasive, Non-native species, Wetlands and Riparian and Water Quality sections for potential cumulative effects to migratory bird species habitats. From the USGS Patuxent Wildlife Research Center (Sauer et al. 2011), the estimated trends for migratory birds for the Southern Rockies/Colorado Plateau region (S16) indicates that 16% of migratory birds species show significant negative trend estimates, while 21% of species show significant positive trend estimates, with a majority of species (58%) having generally positive trend estimates. For the Birds of Conservation Concern, the estimated trend for 4 of the 5 species is negative, with the 5<sup>th</sup> species having no estimate due to lack of data as shown in Table 3.14 below. The future effects from this lease sale as leases are developed, when combined with the past, present and reasonably foreseeable actions would increase effects from habitat fragmentation in the region through incremental increases in surface disturbing activities, resulting in cumulative impacts to migratory bird species and their habitat which may increase negative population trends in some species associated with the North Fork area.

**Table 3.14. Estimated Population Trends for selected migratory bird species for the Southern Rockies/Colorado Plateau Region (S16).**

<b>Species</b>	<b>Estimated Population Trend</b>
<b>American Bittern</b>	No Data
<b>Brewer’s Sparrow</b>	-1.95
<b>Golden Eagle</b>	-1.29
<b>Lewis’ Woodpecker</b>	-1.56
<b>Willow Flycatcher</b>	-2.37

**Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on migratory birds would be similar to those described under the Proposed Action. It is assumed that less development would occur under the Preferred Alternative than under the Proposed Action and therefore impacts would be proportionately reduced due to reduced to deferral of parcels or portions of parcels related to steep slope concerns.

**Cumulative Effects**

The cumulative effects of the Preferred Alternative on migratory birds would be similar to those described under the Proposed Action, but proportionately reduced by proposed deferrals.

**Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

**No Action Alternative**

There would be no impacts to migratory bird species or their habitat from the No Action Alternative.

**3.3.11 WILDLIFE, TERRESTRIAL (includes a finding on Standard 3)**

**Affected Environment**

A variety of wildlife habitats and their associated species occur within the proposed parcels. All species are important members of native communities and ecosystems. Unlike those species discussed in the previous two sections (3.3.8 and 3.3.98), species discussed in this section are generally more common and have wide distributions within the state, region and field office. Each habitat type provides food, cover and shelter for a variety of mammal, bird, and reptile species common to southwest Colorado. Large ungulates in the area include mule deer, elk and moose. Both elk and mule deer have crucial winter habitat within the project area -- Table 3.15 W1 below. Large predators include mountain lion and black bear. Coyotes, bobcats, jackrabbits, cottontail rabbits and a variety of small rodents, reptiles and birds likely inhabit the general area. Parcels 6606, 6609 and 6623 are adjacent to, but do not contain any portions of the Roeber and McCluskey State Wildlife Areas.

**Table 3.15 W1. Big Game Crucial Winter Habitat by Parcel.**

	6623	6624	6625	6604	6605	6606	6607	6608	6609	6610	6611	6612	6613	6614	6615	6616	6622	6617	6618	6619	6620	6621
Elk Winter Concentration Area		X	X <sup>2</sup>		X		X	X	X	X	X	X	X		X	X	X <sup>2</sup>	X <sup>2</sup>			X <sup>2</sup>	X <sup>2</sup>
Mule Deer Critical Winter Range	X	X	X		X	X	X	X	X	X	X	X <sup>2</sup>	X	X <sup>2</sup>	X	X <sup>2</sup>		X <sup>2</sup>			X <sup>2</sup>	

<sup>2</sup>Acres of impact reduced in Preferred Alternative due to deferral.

## **Environmental Effects**

### **Proposed Action**

Effects to general wildlife would be similar to those described in the two sections above (3.3.8 and 3.3.9). Although the proposed action of leasing itself has no direct effects on wildlife in the area, future potential drilling could impact wildlife species and their habitat. At the time an exploration or development proposal is presented to the BLM for these lease parcels, additional NEPA analysis will take place to assess the effects of that proposal and BLM may recommend modifications or disapprove proposed activities that would have significant affects to wildlife species. Also at that time, effects to Roeber and McCluckey State Wildlife Areas would be assessed. Additionally, UB-LN-04 protects non-special status raptors as well as special status raptors. Any impacts to specific species would be addressed at the APD stage and appropriate mitigation would be developed. Noise and human presence associated with potential development could temporarily displace wildlife from the area around the wells and roads during drilling and construction activities. Most displaced wildlife would be expected to return to the area after drilling is completed. After reclamation, direct impacts to wildlife would be minimal, except for periodic disturbance by personnel if wells are productive.

While the proposed action of leasing has no direct effects on wildlife in the area, future development of leases may have impacts on wildlife. Documented ungulate displacement distance and avoidance buffers from well pads and roads (Hebblewhite 2008, Sawyer 2006, 2009) indicate that residual unavoidable adverse impacts to ungulates increases dramatically when well pad densities exceed one pad/mile<sup>2</sup> (corresponding with a road density of approximately ½ mile of road/mile<sup>2</sup>) (Wilbert et al. 2008). These residual adverse impacts occur from reduced habitat effectiveness regardless of the use of Timing Limitation Stipulations on drilling activities or other site specific Best Management Practices designed to reduce impacts (Sawyer 2006, 2009, Wyoming Game and Fish Department 2008). Impacts to big game populations are considered extreme when well pad densities exceed four pads/mile<sup>2</sup> (Wyoming Game and Fish Department 2008, Lutz et al. 2011).

### **Cumulative Impacts**

See Cumulative Effects sections of Soils, Vegetation, Invasive, Non-native species, Wetlands and Riparian and Water Quality sections for potential cumulative effects to terrestrial species habitats.

### **Mitigation**

Mitigation measures on potential future development include applying stipulation UB-04, seasonal timing stipulations for no surface use to protect crucial big game habitats. This stipulation applies to construction and drilling phases and does not apply to operation and maintenance of production facilities.

**Table 3.16 Parcels with Wildlife Stipulations or Lease Notice:**

Parcel IDs	6623	6624	6625	6604	6605	6606	6607	6608	6609	6610	6611	6612	6613	6614	6615	6616	6622	6617	6618	6619	6620	6621
UB-04 Big Game	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X
LN-15 Big Game	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X

The following additional mitigation is recommended in the form of a lease notice to reduce the potential environmental effects described above if development were to occur:

**Big Game Crucial Winter Habitats UB-LN-15**

The lessee/operator is given notice that where new mineral development results in excessive surface disturbance on BLM lands in big game crucial winter ranges, the operator may be asked to improve habitat on other BLM lands to in order to support existing big game populations (compensatory mitigation).

**Finding on the Public Land Health Standard for plant and animal communities**

(Partial finding, also see Vegetation; Invasive, Non-native Species; and Wildlife, Aquatic)

A complete Land Health Assessment was conducted in 2006 and 2007. Approximately 25% of lands within the proposed lease sale area were found to meet Standard 3 for vegetation health, 33% meet Standard 3 but with some problems, and another 33% were found to not meet Standard 3. Leasing these parcels would not alter the current status. Development of the lease parcels would increase surface and vegetation disturbance, may increase weed spread, decrease habitat suitability and cause additional areas to either not meet or show problems meeting land health standards. In heavily developed areas, it is likely that overall conditions would decline enough to reduce the Land Health status beyond current ratings. Site-specific analysis would be conducted at the APD stage to determine and to mitigate potential impacts.

**Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on terrestrial wildlife would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced due to deferral of parcels or portions of parcels related to steep slope concerns. Area of potential impact for Big Game winter habitat would be 4442.43 acres less under the preferred alternative (19,470.77 acres vs. 23,943.2 acres under proposed action).

**Cumulative Effects**

The cumulative effects of the Preferred Alternative on terrestrial wildlife would be similar to those described under the Proposed Action, but reduced for some species through proposed deferrals. For big game, see Table 3.17. Reduced impacts to other wildlife species will vary depending on whether present in proposed deferrals.

**Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action, but acres covered under stipulations and lease notices are decreased for some parcels due to areas of concern being deferred for steep slope concerns (Table 3.17 below).

**Table 3.17 Parcels with Wildlife Stipulations or Lease Notice**

Parcel IDs	6623	6624	6625	6604	6605	6606	6607	6608	6609	6610	6611	6612	6613	6614	6615	6616	6622	6617	6618	6619	6620
UB-04 Big Game	X	X	X <sup>2</sup>		X	X	X	X	X	X	X	X <sup>2</sup>	X <sup>2</sup>	X	X	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>		X <sup>2</sup>	X
LN-15 Big Game	X	X	X <sup>2</sup>		X	X	X	X	X	X	X	X <sup>2</sup>	X <sup>2</sup>	X	X	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>		X <sup>2</sup>	X

<sup>2</sup>Acres of impact reduced in Preferred Alternative due to deferral

**Finding on the Public Land Health Standard 4 (Threatened & Endangered Species)**

Under the Preferred Alternative the Finding on the Public Land Health Standard 3 would be the same as described under the proposed action.

**No Action Alternative**

There would be no impacts to wildlife species or their habitat from the No Action Alternative.

**3.3.12 WILDLIFE, AQUATIC (includes a finding on Standard 3)**

**Affected Environment**

Several parcels are adjacent to or contain perennial streams which would provide potential habitat for aquatic wildlife (Table 3.18 AW1 below). Additionally, these aquatic habitats provide food, cover and shelter for a variety of mammal, bird, amphibian and reptile species common to southwest Colorado. Although all of the species are important members of native communities and ecosystems, most are common and have wide distributions within the state, region and field office (See Threatened, Endangered and Sensitive Species section for aquatic TES species).

**Table 3.18 AW1. Presence of aquatic habitat by parcel.**

Parcel IDs	6623	6624	6625	6604	6605	6606	6607	6608	6609	6610	6611	6612	6613	6614	6615	6616	6622	6617	6618	6619	6620	6621
Potential habitat for aquatic wildlife	X <sup>2</sup>		X <sup>2</sup>	X		X	X	X	X		X	X <sup>2</sup>	X	X <sup>2</sup>	X		X <sup>2</sup>	X <sup>2</sup>	X	X <sup>2</sup>		

<sup>2</sup>Acres of impact reduced in Preferred Alternative due to deferral

**Environmental Effects**

**Proposed Action**

Although the proposed action of leasing itself has no direct effects on aquatic wildlife in the area, future potential drilling could impact associated wildlife species and their habitat. Any impacts

to specific species would be addressed at the APD stage and appropriate mitigation would be developed. Potential future activities could have impacts to connected, downstream habitats for aquatic wildlife (See Threatened, Endangered and Sensitive Species section for aquatic TES species). After reclamation, direct impacts to wildlife would be minimal, except for periodic disturbance by personnel if wells are productive.

### **Cumulative Impacts**

See Cumulative Effects sections of Soils, Vegetation, Invasive, Non-native species, Wetlands and Riparian and Water Quality sections for potential cumulative effects to aquatic wildlife species habitats.

### **Mitigation**

Mitigation measures on potential future development could include requiring appropriate BMPs for sediment and erosion control such as seeding, water bars, silt fencing, ditches, and reclamation measures (See Wetland and Riparian and Water Quality sections). Erosion control measures would be placed on well pads, roads and pipelines to divert precipitation runoff from entering stream channels and riparian areas. The lessee and operator would be required to comply with the Clean Water Act, the State of Colorado Stormwater Regulations, and all other applicable laws pertaining to oil and gas operations in wetland and riparian areas.

To reduce the potential environmental effects described above if development were to occur, the following lease notice should be applied to parcels 6623, 6625, 6604, 6606, 6607, 6608, 6609, 6611, 6612, 6613, 6614, 6615, 6622, 6617, 6618, 6619 (all parcels with potential habitat for aquatic wildlife):

### **Aquatic Wildlife, Wetlands and Riparian Zones UFO-LN-16**

The lessee/operator is given notice that the location of proposed development may require moving surface-disturbing oil and gas exploration and development activities up to 200 meters from the ordinary high water mark or riparian/wetland. These activities may require special engineering design, construction and implementation measures to protect water resources of the aquatic habitat.

### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on aquatic wildlife would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced due to reduced acres related to deferral of parcels or portions of parcels from steep slope concerns.

### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on aquatic wildlife would be similar to those described under the Proposed Action.

## Mitigation

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action, but acres covered under stipulations are decreased for some due to areas of concern being deferred for steep slope concerns.

## No Action Alternative

There would be no impacts to aquatic wildlife species or their habitat from the No Action Alternative.

### 3.3.13 WETLANDS & RIPARIAN ZONES

#### Affected Environment

Some of the parcels contain riparian areas as shown in Table 3.19a below. Ephemeral streams do not support continuous wetland vegetation, but may contain small patches of wetland along the drainage bottom. Ditches may also support wetland vegetation, but are not considered as riparian zones for the purpose of analysis.

**Table 3.19a Riparian Resources per Parcel**

Parcel ID	Stream Name	Miles
6623	Bear Cr	0.6
	Slide Cr	0.3
	Pond Cr	0.1
6625	Jay Cr	1.1
	Foote Ditch	0.9
	Roatcap Cr	0.7
6604	Sams Cr	0.8
	Lake Fork Minnesota Cr	0.2
	Minnesota Cr	0.2
	Lion Gulch	0.03
6606	Sams Cr	0.1
	Minnesota Cr	0.03
6607	Love Gulch	1.2
	Jay Cr	1.1
	Short Draw (ephemeral)	0.9
6608	Jay Cr	0.7
	Short Draw (ephemeral)	0.6
6609	McDonald Cr	0.7
	Reynolds Cr	0.5
	Lucas Cr	0.5
6611	McDonald Cr	1.1
6612	Smith Fork	0.04
6614	Smith Fork	0.08
6615	McDonald Cr	2.6
	Cottonwood Cr	1.1
6622	North Fk Gunnison River	1.0
	Cottonwood Cr	0.8

Parcel ID	Stream Name	Miles
	Thompson Cr (ephemeral)	0.8
	Anthracite Cr	0.3
6617	Terror Cr	0.9
	Coal Gulch	0.3
	North Fk Gunnison River	0.2
6619	Williams Cr	0.2

A complete description of the predominant riparian communities that occur along these streams is included in the North Fork Land Health Assessment (BLM 2007).

The majority of streams are in satisfactory to good condition, with most meeting BLM’s Proper Functioning criteria and Standard 2 for riparian health. McDonald Creek, Jay Creek and Sams Creek are the exception to this, with problems described in the North Fork Land Health Assessment.

There are no comprehensive lentic wetland inventories or documented lentic wetlands on the parcels. However, it is likely that small areas of lentic wetlands exist on some of the parcels. Many lentic wetlands in this region are associated with small natural or manmade ponds, which have been mapped through analysis of aerial photography, and are listed by parcel in Table 3.20a. Vegetation on these ponds would likely be similar to that described for the riparian areas, but with willows and herbaceous wetland species such as sedges, rushes, cattails, and bulrush more dominant.

**Table 3.20a Natural or Man-made Ponds per Parcel.**

Parcel IDs	6624	6606	6608	6609	6612	6613	6614	6615	6616	6622
Number of Ponds	1	3	1	2	2	2	2	2	1	2

### Environmental Effects

#### Proposed Action

While the act of leasing the parcels would produce no impacts, subsequent development of the lease could impact riparian areas. Infrastructure from oil and gas development such as access roads and pipeline routes may follow corridors where riparian zones may be present. Such impacts are likely to involve surface disturbance, altered hydrology and vegetation removal in a small proportion of riparian areas. The scope and extent of the impacts would be analyzed at the time of exploration and development and would be proposed in an Application for Permit to Drill (APD). The known potential impacts associated with oil and gas activities that could occur on these lease parcels include:

- Sediment deposition onto riparian vegetation and into stream channels;
- Damage to riparian vegetation adjacent to disturbed sites resulting from dust and sediment deposition, and erosion from altered site hydrology;

- Bank damage from altered drainage patterns, from increased runoff from disturbed uplands, and from culvert or road crossings;
- Altered wildlife use patterns and the secondary impacts to vegetation;
- Direct removal or damage to riparian vegetation;
- Impacts from weed control on non-target plants.

These impacts would occur in an amount commensurate with the level of oil and gas development. Because stream and wetland areas are limited to small areas of the proposed lease parcels, avoidance of most areas and impacts is likely. With appropriate COAs, all developed land ultimately will undergo reclamation, albeit in some instances up to 30 years after initial disturbance. Success of reclamation varies depending on many factors including soil type, slope, vegetation type, weather patterns, and seed availability.

### **Cumulative Effects**

This lease sale, when combined with the past, present and reasonably foreseeable actions will slightly elevate the potential for deterioration of riparian health in the region. This will occur through incremental reductions in quality of riparian communities and channel form and function. If these leases are developed, surface and vegetation disturbance associated with oil and gas activities could magnify other impacts in the watershed that are taking place on private and federal lands. Additional activities and associated impacts to riparian and wetland areas on BLM and Forest Service lands in the watershed include: water depletion, flow alterations, the spread of invasive weeds, wildfire, coal mining and associated subsidence, livestock grazing and wildlife use, rights of ways, recreation and travel infrastructure. Additional impacts arise from activities on private property in the watershed including: cultivation, irrigation, livestock production, residential and commercial land development and oil and gas development.

### **Mitigation**

Mitigation measures to limit riparian and wetland impacts are included as Conditions of Approval (COAs) which include reclamation and revegetation procedures. These are developed at the well permitting stage and are followed throughout the life of the development. These COAs generally include plans for storm water management, erosion control, stream crossings, re-contouring and soil stabilization, weed control, and long term revegetation. In addition, the following lease notice is recommended for parcels 6623, 6625, 6604, 6606, 6607, 6608, 6609, 6611, 6612, 6613, 6614, 6615, 6616, 6622, 6617, 6619 to reduce the potential environmental effects described above.

### **Aquatic Wildlife, Wetlands and Riparian Areas UFO-LN-16**

The lessee/operator is given notice that the location of proposed development may require moving surface-disturbing oil and gas exploration and development activities up to 200 meters from the ordinary high water mark or riparian/wetland. These activities may require special engineering design, construction and implementation measures to protect water resources of the aquatic habitat.

### **Finding on Public Land Health Standard 2**

A complete Land Health Assessment was conducted in 2006 and 2007. All perennial and intermittent streams with the exception of McDonald, Jay and Sams Creek were found to meet

Standard 2. Jay, Sams, and the upper 1.8 miles of McDonald Creek were found to meet Standard 2 with problems, while the lower 2.6 miles of McDonald Creek did not meet Standard 2. Leasing these parcels would not alter the current status. Development of the lease parcels would likely result in minor increases in surface and vegetation disturbance in and around wetland and riparian areas. With existing stipulations, even in heavily developed areas, it is unlikely that overall conditions would decline enough to reduce the Land Health status beyond current ratings.

**Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on wetlands/riparian zones would be similar to those described under the Proposed Action. Deferral of the entirety of parcel 6622 (as recommended in the preferred alternative) will reduce the amount riparian area subject to lease by 384 acres in 0.1 mile along the North Fork of the Gunnison River, 0.3 miles along Cottonwood Creek, and 0.1 mile along Anthracite Creek. There would also be one less water body (Paonia Reservoir) subject to lease as a result of deferring this parcel. Table 3.19b Riparian Resources per Parcel, shows the riparian areas in the parcels proposed for leasing under this alternative. Table 3.20 b Natural or Man-made Ponds per Parcel, shows the documented wetland areas.

It is assumed that less development would occur under the Preferred Alternative than under the Proposed Action and therefore impacts would be proportionately reduced.

**Table 3.19b Riparian Resources per Parcel**

Parcel ID	Stream Name	Miles
6623	Slide Gulch	0.2
6625	Jay Cr	1.1
6604	Sams Cr	0.8
	Lake Fork Minnesota Cr	0.2
	Minnesota Cr	0.2
	Lion Gulch	0.03
6606	Sams Cr	0.1
	Minnesota Cr	0.03
6607	Love Gulch	0.6
	Jay Cr	1.1
	Short Draw (ephemeral)	0.9
6608	Jay Cr	0.7
	Short Draw (ephemeral)	0.6
6609	McDonald Cr	0.7
6611	McDonald Cr	1.2
6615	McDonald Cr	2.7
	Cottonwood Cr	1.1
6617	Coal Gulch	0.3

**Table 3.20b Natural or Man-made Ponds per Parcel.**

<b>Parcel IDs</b>	<b>6606</b>	<b>6608</b>	<b>6613</b>	<b>6614</b>	<b>6615</b>
Number of Ponds	3	1	2	2	2

**Cumulative Effects**

The cumulative effects of the Preferred Alternative on wetlands/riparian zones would be similar to those described under the Proposed Action.

**Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

**No Action Alternative**

There would be no impacts to riparian or wetland areas under the No Action Alternative.

**3.3.14 FLOODPLAINS**

**Affected Environment**

Floodplain areas are associated with streams that occur on the proposed lease parcels. The BLM is required to meet the objectives of federal floodplain policy. Executive Order 11988 (21), as amended, established this policy and directs agencies to “avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practical alternative.” The objectives of avoiding development and modification of floodplains are to 1) reduce the hazard and the risk of flood loss, 2) minimize the impact of floods on human safety, health, and welfare, and 3) restore and preserve the natural and beneficial floodplain values.

**Environmental Effects**

**Proposed Action**

While the act of leasing the parcels would produce no impacts, subsequent development of the lease would lead to surface disturbance from the construction of well pads, reserve pits, access roads, pipelines, and the drilling of exploration and development wells. The scope and extent of the impacts would be analyzed in accordance with NEPA at the time of exploration and development and would be proposed in an Application for Permit to Drill (APD). Some of the known potential impacts associated with oil and gas activities that could occur on these lease parcels include:

- Alteration of floodplains at road and pipeline crossings.
- Changes to downstream channel morphology with increased flow and sediment.

The intensity of the impacts above would vary by each location and would be dependent on specific channel characteristics including width, depth and floodplain development.

### **Cumulative Effects**

This lease sale, when combined with the past, present and reasonably foreseeable actions could decrease the ability of the floodplain to dissipate flooding events. Oil and gas activities could magnify other impacts in the watershed on private and federal lands due to the increased surface disturbance in floodplains. Additional activities on BLM and Forest Service lands in the watershed include: coal mining, grazing, rights of ways, recreation and travel infrastructure. Impacts associated with private property in the watershed include; cultivation, irrigation, livestock production, residential and commercial land development, urban runoff, coal mining, and oil and gas development.

The types of impacts expected from all of the cumulative actions in the watershed would be similar to those described for the proposed action. The cumulative effect of all the impacts in the watershed could contribute to decreased ability of the floodplain to dissipate flooding events.

### **Mitigation**

See Soils, Surface Water, wetlands and riparian zones. These mitigation measures would minimize development in the floodplain and prevent degradation of the floodplain.

### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on floodplains would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on floodplains would be similar to those described under the Proposed Action.

### **Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

### **No Action Alternative**

There would be no impacts to floodplains under the No Action Alternative.

## **3.3.15 GROUNDWATER**

### **Affected Environment**

#### *Standards and Classifications*

The State of Colorado regulates groundwater quality under the Colorado Water Quality Control Act. The Water Quality Control Commission is tasked with classifying and establishing standards for the protection of groundwater quality through regulation 5 CCR 1002-41. Those regulations establish the four types of standards below, and in part read:

- A. Narrative Standards – Groundwater shall be free from pollutants that are in concentrations shown to be:
  - Carcinogenic, mutagenic, teratogenic, or toxic to human beings and/or,
  - A danger to the public health, safety, or welfare;
  
- B. Numeric Standards – Classified by the commission within a specific area:
  - Domestic Use - Quality (37 parameters)
  - Agricultural Use - Quality (21 parameters)
  - Surface Water Quality Protection
  - Potentially Usable Quality
  - Limited Use and Quality;
  
- C. Statewide Standards;
- D. Radioactive material standards (7 parameters);
- E. Interim organic pollutant standards (145 parameters);
- F. Site-specific radioactive materials and organic pollutant standards;

Standards A and C above apply statewide. Standard B above, Numeric Standards, only apply to specific areas the commission specifies, and can be found in 5 CCR 1002-42. In addition to the areas specified by the commission, Standard B Domestic Use or Agricultural Use standards also apply to groundwater wells that are permitted or decreed in the state engineer's well records or by applicable court decrees.

The lease parcel area does not contain, nor is located near any of the areas specified by the commission where specific numeric standards apply. However, when there is an activity that affects or has the potential to affect groundwater quality, this information can be submitted by the owner/operator of the activity to the commission for determination of the affected area and potential classification.

***Public Water Supplies*** (See Surface Water.)

***Groundwater wells***

The lease parcel area in the North Fork valley lies along the southern edge of the Piceance Basin, a structural depression associated with the uplift of the Rocky Mountains. The Northern portion of the lease parcels are dominated by the Mesaverde Formation and the Wasatch Formation with the marine sediments of the Mancos Shale underlying. The Mesaverde formation consists of 4,600' to 6,500' of discontinuous sandstone, mudstone, coal and shale lenses (Tremain, 1983).

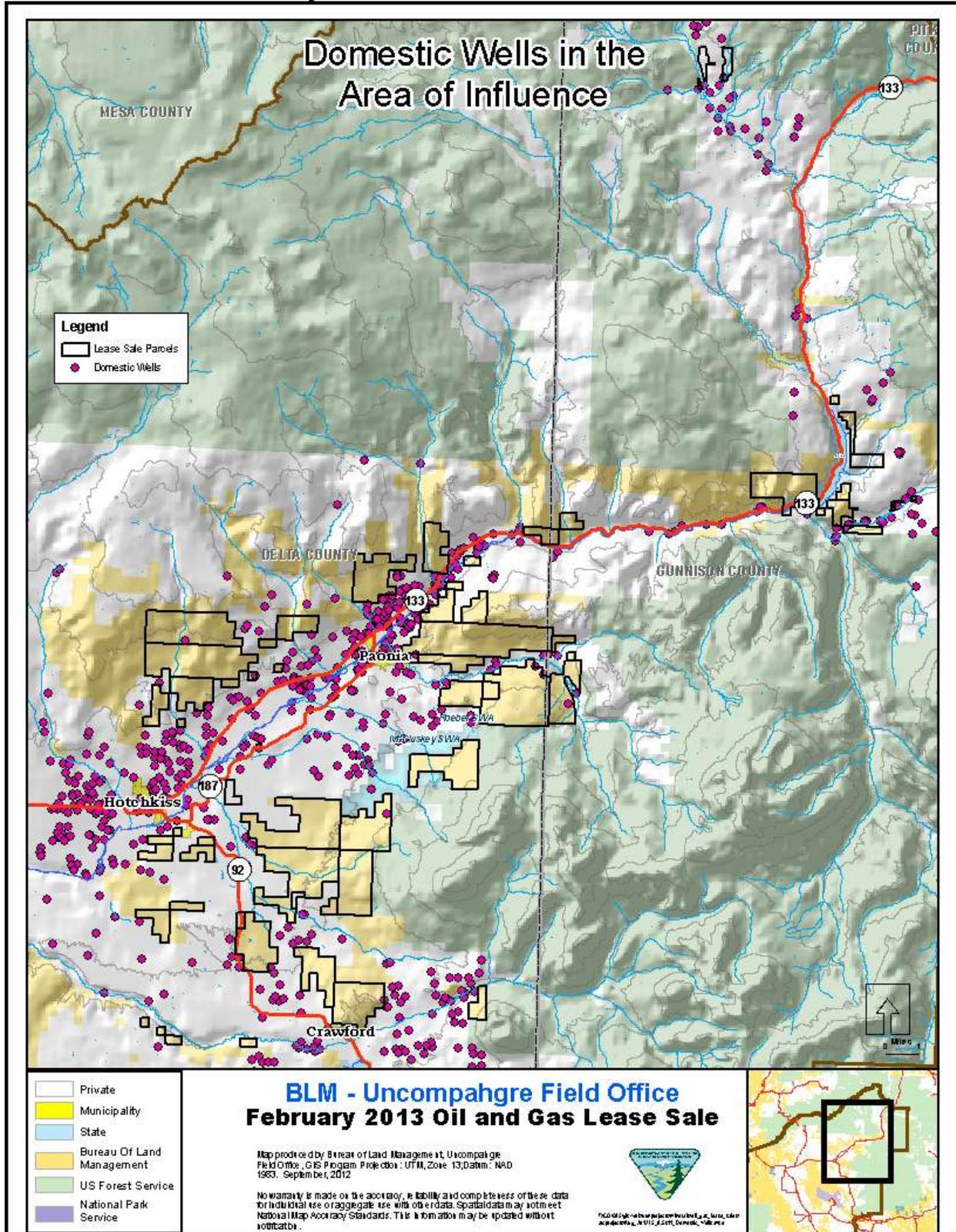
In the Southern portion of the lease parcels the Mancos Shale is unconfined and exposed at the ground surface. Thickness of the Mancos Shale varies through the valley but generally decreases in the southern, higher elevation portion of the lease sale area where uplift of the metamorphic bedrock associated with the Gunnison Gorge and erosional processes have exposed the underlying Dakota formation.

Groundwater quality is excellent in the shallow alluvial aquifer located near the North Fork of the Gunnison River and this aquifer provides the source for many domestic drinking water wells

in the area. Deeper wells drilled into the Mancos Shale in association with oil and gas activities in the area, have measured total dissolved solid (TDS) concentrations in the range of 10,000-30,000 ppm.

In a review of the Colorado Division of Water Resources well permit database, there are approximately 124 domestic wells located on private property within 1000' of the Lease Parcels. Well depth records indicate most of the wells are completed in the shallow unconfined alluvium between 30' and 500' deep. Many of the wells are located down gradient of the Lease Parcels.

Figure 3.8 Depicts the wells within the Area of Influence in the CDWR database listed as “domestic wells” with issued permits.



### ***Groundwater quality Data***

The BLM does not actively monitor groundwater quality in the lease parcel area. Limited groundwater quality monitoring has been conducted associated with oil and gas activities on private property in the area. Gunnison Energy Corporation drilled 4 exploratory gas wells between Oak Mesa and the Cedaredge area and hired Wright Water Engineers to prepare the report, "Characterization and Assessment of Water Resources on the Southeastern Flank of the Grand Mesa," in 2003. This report specifically targeted water quality in the Mesaverde formation. The report reviewed water quality data from five wells varying in depth from 74' to 810'. TDS concentrations ranged from 303 ppm to 556 ppm and the dominant cations/anions were calcium-magnesium-bicarbonate.

In the Bull Mountain area, baseline groundwater monitoring was conducted on three domestic wells prior to the drilling of 16 exploratory gas wells by Gunnison Energy Corporation. Results found TDS ranging from 135-540 ppm. An organic and metals analysis found one of the wells exceeded the domestic use standard for iron. The remainder of the parameters were below drinking water standards.

The NFRIA-WSERC Conservation Center conducted water quality monitoring on 3 springs located near the Lease Parcels in 2011. The monitoring was designed to serve as a baseline prior to oil and gas exploration and development. A comprehensive suite of 42 volatile organic compounds and 65 semi-volatile organic compounds were analyzed. No detections were found except one semi-volatile organic compound, bis(2Ethylhexyl)phthalate or DEHP, at two sites. Because of the low concentration, and occurrence at two sites, it was determined to be likely a sample contaminant from plastic collection materials (ERO, 2011).

### **Environmental Effects**

#### **Proposed Action**

While the act of leasing the parcels would produce no impacts, subsequent development of the lease would lead to the construction of well pads, reserve pits, and the drilling of exploration and development wells. The scope and extent of the impacts would be analyzed in accordance with NEPA at the time of exploration and development and would be proposed in an application for Permit to Drill (APD). Some of the known impacts to groundwater associated with oil and gas activities that could occur on these lease parcels are:

- Loss of drilling fluids to groundwater during drilling operations.
- Cross contamination of aquifers across geologic formations from poorly sealed well bores.
- Contamination of unintended aquifers from hydraulic fracturing.
- Deep aquifer contamination from injection wells.
- Contamination of the shallow alluvial aquifer from spills of chemicals collected or stored on the well pad or in transit to the well pad.
- Seepage of produced water, stimulation fluids or cuttings stored in reserve pits into shallow aquifers.

If contamination of aquifers from oil and gas development occurs, changes in groundwater quality could impact downstream users diverting water from groundwater sources such as municipal and public wells, domestic wells, springs, and surface water diversions that communicate with groundwater. The extent of potential contamination would depend on the point of contamination and volume of the contaminant.

### **Cumulative Effects**

This lease sale, when combined with the past, present and reasonably foreseeable actions will elevate the potential for deterioration of groundwater quality. Surface disturbance associated with oil and gas activities could magnify other impacts from activities on private and federal lands in the watershed. Additional impacts on BLM and Forest Service lands in the watershed include those from coal mining, grazing, rights of ways, recreation and travel infrastructure. Impacts associated with private property in the watershed result from cultivation, irrigation, livestock production, residential and commercial land development, coal mining, and oil and gas development.

The types of impacts expected from all of the cumulative actions in the watershed would be similar to those described for the proposed action. The cumulative effect of all the impacts in the watershed could contribute to decreased groundwater quality.

### **Mitigation**

To reduce the potential environmental effects to groundwater described above if development was to occur, the following lease notice should be applied:

#### **Lease Notice UFO-LN-18, Surface And Ground Water**

For the purposes of protecting: Surface and/or Ground Water: Municipal Watersheds and Public Water Supplies

The lessee/operator may be required ensure protection of Municipal Watersheds and Public Water Supplies in the following manner:

- Avoid surface occupancy within 1,000 horizontal feet of either side of a classified surface water supply stream segment (as measured from the average high-water mark of a water body) for a distance of 5 miles upstream of a public water supply intake with the classification “Water Supply” by the State of Colorado; or a designated watershed with a protection plan providing domestic water.
- Avoid surface occupancy within a 1,000-foot horizontal buffer of all Public Water Supplies using a groundwater well or spring or a designated watershed with a protection plan providing domestic water.
- Apply the following protective measures within a distance greater than 1,000 horizontal feet but less than 2,640 horizontal feet of a classified “Water Supply” using a groundwater well ,spring or surface water supply stream segment (as measured from the

average high water mark of a water body) for a distance of 5 miles upstream of a public water supply intake with the classification “Water Supply” by the State of Colorado:

- Use of pitless drilling systems.
  - Flowback and stimulation fluids contained within tanks that are placed on a well pad or in an area with down-gradient berming.
  - Follow COGCC rules for fracking operations and disclosure.
  - Notification of potentially impacted Public Water Systems 15 miles downstream.
- The use of evaporation ponds for means of disposing of produced water shall not be permitted on BLM administered lands or split estate within the municipal watershed.
  - Collection of baseline water quality data (surface and/or groundwater) consisting of a pre-drilling sample collected beginning within a 100 feet of well pad, or where sufficient water exists to collect a sample per EPA or USGS collection methods. Additional sampling must be conducted during drilling operations and immediately following well completion. Each sample should analyze at a minimum: pH, alkalinity, specific conductance, major cations, major anions, total dissolved solids, BTEX/GRO/DRO, TPH, PAH’s (including benzo[a] pyrene and metals [arsenic, barium, calcium, iron, magnesium, manganese, lead, and selenium]). For municipal watersheds, a coordinated water resources monitoring plan may need to be developed with the BLM and municipality. Each office will determine the sampling sites, intensity, and need for groundwater sampling, depending on site specific geology and risk. Results must be submitted to BLM within 3 months of data collection per Section 317B of the Colorado Oil and Gas Conservation Commission regulations.

In addition to the lease notice mentioned above, BLM will review each APD to ensure:

- Sufficient surface casing is extended through all fresh water domestic aquifer zones and should be drilled with fresh water mud;
- Cementing would comply with all Federal and State requirements to ensure aquifer integrity;
- Municipal and domestic springs are not degraded in volume or quality. Hydrologic studies may be recommended for this purpose.

Additional regulations applying to oil and gas activities:  
Colorado Oil and Gas Conservation Commission Rules  
BLM Onshore Oil and Gas Regulations at 43 CFR Part 3160  
BLM Onshore Orders

### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on ground water would be similar to those described under the Proposed Action. It is assumed that development under the Preferred

Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

#### ***Groundwater wells***

In a review of the Colorado Division of Water Resources well permit database, there are approximately 73 domestic wells located on private property within 1000' of the Lease Parcels.

#### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on ground water would be similar to those described under the Proposed Action.

#### **Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

#### **No Action Alternative**

There would be no impacts to Groundwater under the No Action Alternative.

### **3.3.16 SURFACE WATER**

#### **Affected Environment**

##### ***Hydrology***

Annual precipitation varies from about 8 inches at the lower elevations in the valley bottoms to more than 24 inches at the higher elevations. From 25 to 50% of the annual precipitation falls as snow during the colder months, depending on elevation. Most of the precipitation outside of the mid to late summer season occurs from frontal type storm systems, affecting the entire region. Precipitation from frontal events occurs over a relatively long duration but at low intensity rates. In contrast, summer precipitation is commonly associated with the southwest monsoon air flow pattern producing short duration, high intensity precipitation events.

The major waterways in the lease sale area include: the North Fork of the Gunnison, the Muddy Creeks, Anthracite Creek, Minnesota Creek, Hubbard Creek and Leroux Creek. Major drainages in the landscape unit experience high flows from both snowmelt and rainfall events. Snowmelt is typically generated from the high elevation headwater areas. Short duration flood flows occur from high intensity monsoon events in mid to late summer. These summer floods are typically localized and have the greatest impact on intermittent and ephemeral channels.

##### ***Standards and Classifications***

The Clean Water Act of 1972 gives the Environmental Protection Agency (EPA), the authority to set effluent limits on discharges of pollutants into waters of the United States and regulate water quality standards for surface waters. The Clean Water Act also gives the EPA the ability to authorize state governments to administer the program while retaining oversight.

The State of Colorado passed the Colorado Water Quality Control Act grants the Colorado Water Quality Control Commission authority to classify and assign numeric standards to state waters. State waters are classified according to present beneficial uses, or beneficial uses that may be

reasonably expected in the future. Beneficial use classifications include aquatic life, recreation, agriculture, and water supplies for various purposes. Numeric standards are assigned in order to define allowable concentrations of various parameters under the following categories: physical and biological, inorganic and metals. Water quality classifications and numeric standards for surface and downstream receiving waters in the planning area are contained in the Commission’s 5 CCR 1002-31, Regulation No. 35, Classifications and Numeric Standards for Gunnison and Lower Dolores River Basins (Colorado Water Quality Control Commission 2012).

It is BLM policy that agency projects should meet or exceed water quality standards established by the State of Colorado for all water bodies located on or influenced by BLM-administered lands.

Table 3.21 Water Quality Classifications below lists the water quality classifications for the surface waters influenced by the Lease parcels:

**Table 3.21 Water Quality Classifications**

4 <sup>th</sup> Level Watershed	Stream Segment	Stream Classification <sup>1-5</sup>
	All tributaries to the North Fork of the Gunnison River including all lakes, reservoirs, and wetlands from the source of Muddy Creek to a point immediately below the confluence with Coal Creek; all tributaries to the North Fork of the Gunnison including all lakes, reservoirs, and wetlands.	Aq Life Cold 1 Recreation E Water Supply Agriculture
14020004 North Fork Gunnison River	Paonia Reservoir.	Aq Life Cold 1 Recreation E Water Supply Agriculture
	Mainstem of North Fork of the Gunnison River from the confluence of Muddy Creek and Coal Creek to the Black Bridge (41.75 Drive) above Paonia.	Aq Life Cold 1 Recreation E Water Supply Agriculture
	Mainstems of Hubbard Creek, Terror Creek, Minnesota Creek, and Leroux Creek from their boundary with national forest land to their confluences with the North Fork of the Gunnison River; mainstem of Jay Creek from its source to its confluence with the North Fork of the Gunnison River; mainstem of Roatcap Creek including all tributaries, wetlands, lakes and reservoirs, from its source to its confluence with the North Fork of the Gunnison.	Aq Life Cold 1 Recreation P Water Supply Agriculture

	Mainstem of North Fork of the Gunnison River from the Black Bridge (41.75 Drive) above Paonia to the confluence with the Gunnison River.	Aq Life Cold 1 Agriculture Oct. 1 to March 31 Recreation N April 1 to Sept. 30 Recreation E
	Mainstem and all tributaries to Bear Creek, Reynolds Creek, Bell Creek, McDonald Creek, Cottonwood Creek, Love Gulch, Cow Creek, Dever Creek, German Creek, Miller Creek, Stevens Gulch, Big Gulch, Stingley Gulch and Alum Gulch including lakes, reservoirs, and wetlands which are not on national forest lands from their source to the North Fork of the Gunnison River	Aq Life Warm 2  Recreation P  Water Supply  Agriculture

1. Waters are designated either warm or cold based on water temperature regime. Class 1 water's are capable of sustaining a wide variety of cold or warm water biota, while class 2 waters are not.
2. Recreation Class E - Existing Primary Contact Use. These surface waters are used for primary contact recreation or have been used for such activities since November 28, 1975.
3. Recreation Class P - Potential Primary Contact Use. These surface waters have the potential to be used for primary contact recreation.
4. Recreation Class N - Not Primary Contact Use
5. Waters that are suitable for irrigating crops usually grown in Colorado.
6. Waters that are suitable or intended to become suitable for potable water supplies.

Compliance with section 303(d) of the Clean Water Act requires Colorado to identify water where effluent limitations are not strong enough to attain water quality standards. These waters are placed on the 303(d) list. Each water body on the list must have a Total Maximum Daily Load Assessment (TMDL) prepared. The TMDL calculates the maximum quantity of a pollutant that may be added to a water body from all sources, including point sources, nonpoint sources, and natural background sources, without exceeding the applicable water quality criteria for that pollutant. The assessment also quantifies how much the pollutant would need to be reduced to meet the criteria.

Table 3.22 Impaired Surface Waters, shows the surface waters in the area that are on Colorado's impaired waters, 303(d) or Monitoring and Evaluation list (CDPHE, Water Quality Control Commission, 5 CCR 1002-93).

**Table 3.22 Impaired Surface Waters in the Area.**

Segment Description	Portion	Colorado's Monitoring & Evaluation Parameter(s)	Clean Water Act Section 303(d) Impairment	303(d) Priority
North Fork of the Gunnison from Black Bridge above Paonia to the confluence within the Gunnison	all		Se	H
Hubbard, Terror, Minnesota and Leroux Creeks from USFS boundary to N. Fork. Mainstem of Jay Creek and mainstem and tribs of Roatcap Creek to the N. Fork	Leroux Creek, Jay Creek,		Se*	H
Tributaries to N. Fork of Gunnison River not on USFS property	Unnamed tributary to North Fork Gunnison River near Hotchkiss	Se		
Tributaries to the North Fork of the Gunnison not on USFS lands	Coal Gulch, Hawksnest Creek, Gribble Gulch	Fe(Trec)		
Bear Creek, Reynolds Creek, Bell Creek, McDonald Creek, Cottonwood Creek, Love Gulch, Cow Creek, Dever Creek, German Creek, Miller Creek, Stevens Gulch, Big Gulch, Stingley Gulch and Alum Gulch not on national forest lands from the source to the North Fork of the Gunnison River	Cottonwood Creek	Fe(Trec), Mn(WS), SO4		
Bear Creek, Reynolds Creek, Bell Creek, McDonald Creek, Cottonwood Creek, Love Gulch, Cow Creek, Dever Creek, German Creek, Miller Creek, Stevens Gulch, Big Gulch, Stingley Gulch and Alum Gulch not on national forest lands from the source to the North Fork of the Gunnison River	Alum Gulch	Fe(Trec)	SO4	M

In addition to the state's water quality classifications and numeric standards, all surface waters of the State are subject to the Basic Standards (Colorado Department of Public Health and Environment, Water Quality Control Commission, Regulation NO. 31), which in part reads: state surface waters shall be free from substances attributable to human-caused point or nonpoint source discharge in amounts, concentrations or combinations that:

- Can settle to form bottom deposits detrimental to the beneficial uses. Depositions are stream bottom buildup of materials which include but are not limited to anaerobic sludges, mine slurry or tailings, silt, or mud; or,
- form floating debris, scum, or other surface materials sufficient to harm existing beneficial uses; or,
- produce color, odor, or other conditions in such a degree as to create a nuisance or harm existing beneficial uses or impart any undesirable taste to significant edible aquatic species or to the water; or,
- are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life; or,
- produce a predominance of undesirable aquatic life; or,
- cause a film on the surface or produce a deposit on shorelines.

### ***Selenium***

Selenium is a naturally occurring soluble non-metal found in the marine sediments of the Mancos Shale. Selenium can be easily mobilized by applying irrigation water to soils derived from Mancos Shale or from surface disturbing activities on Mancos Shale, and delivered to nearby waterways by irrigation return flow, groundwater, or overland flow. Once in the waterways, selenium can move through the aquatic environment, bio-accumulate in organisms and potentially reach toxic levels (Lemly, 2002).

In 1997, the Colorado State Water Control Commission revised the chronic aquatic-life criterion for dissolved selenium from 17 µg/L to 4.6 µg/L. The Selenium Task Force was created soon after to address selenium issues. The group is comprised of private, local, state, and federal agencies including the BLM.

As required by the Clean Water Act and the 303(d) listing, the Colorado Water Quality Control Division released the TMDL Assessment in 2009 for the Gunnison River and tributaries and the Uncompahgre River and tributaries. Remediation strategies are implemented in part by the Selenium Task Force.

Also in 2009, the Fish and Wildlife Service issued a Programmatic Biological Opinion (PBO) under the Endangered Species Act to address the recovery of endangered fish species. The PBO addresses the Bureau of Reclamation's Aspinall Unit operations as well as all other public and private uses in the Gunnison Basin. The primary requirements of the PBO are the reoperation of the Aspinall Unit and the implementation of a Selenium Management Program. The BLM is a signatory to a Memorandum of Understanding with the Bureau of Reclamation, State of Colorado, and local irrigation companies, to assist in the development and implementation of a long-range plan. In the MOU, the BLM agreed to, "Evaluate options to conform to a goal of no net new selenium loading from land exchanges, sales, and other actions involving public lands."

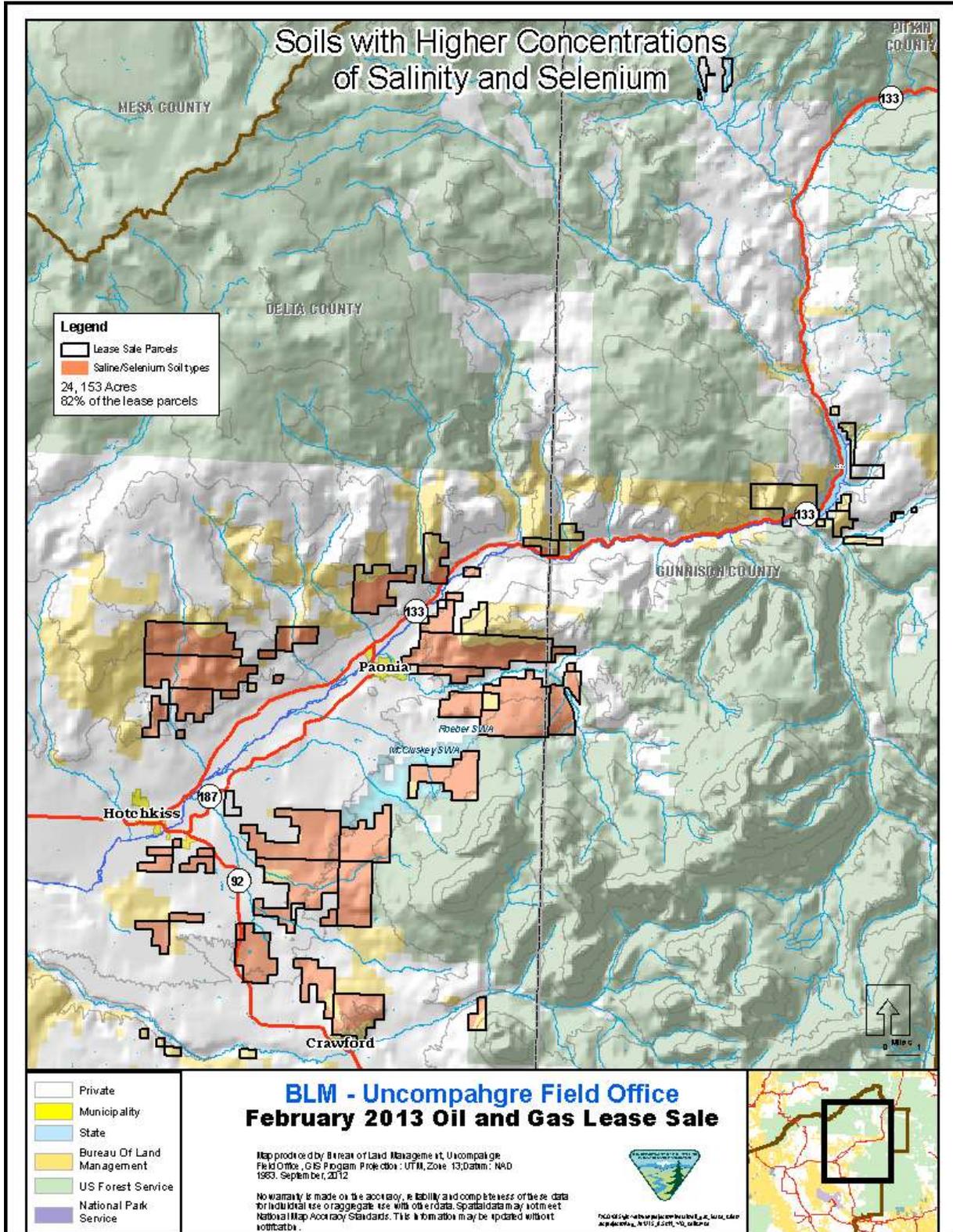
In order to meet this goal, the BLM will evaluate proposed activities in the NEPA process and in this case, the APD stage, to prevent selenium loading and effects to endangered fish.

***Salinity***

Salts are another naturally occurring component of the Mancos Shale and are easily mobilized. The soluble mineral content of the Mancos Shale can be as high as 20% but is typically more like 6%, and the major mineral is typically gypsum (Schumm and Gregory, 1986). The Bureau of Reclamation has estimated that half of the present salt concentration in the Colorado River system is due to natural sources while the remainder is human induced by sources such as agriculture. The annual salt loading above imperial dam to the Colorado River is estimated to be 10 million tons and the Gunnison River basin contributes roughly 1.1 million tons (Leib,2008).

The Colorado River Basin Salinity Control Act passed in 1974 and amended in 1984, directs the BLM to minimize salt contributions to the Colorado River system from BLM administered lands.

**Figure 3.9 Lease parcel area and those portions of the parcels with soil types derived from Mancos Shale.**



### ***Public Water Supplies***

The BLM is required to comply with the Safe Drinking Water Act for managing public water supplies or source water areas. In 1996, the Safe Drinking Water Act was amended to include requirements that each state develop a Source Water Assessment and Protection Program to ensure safe public drinking water supplies. The Colorado Department of Public Health and Environment (CDPHE), the BLM, and other agencies and citizen groups, developed the program.

The Source Water Assessment and Protection (SWAP) program is a two phased process designed to assist public water systems in preventing accidental contamination of their untreated drinking water supplies (CDPHE, 2004). The first phase of the plan is to assess all public water supplies to identify existing and potential pollution sources. This phase is conducted by CDPHE and is complete for the entire state of Colorado for over 1700 public water systems. The second phase consists of developing a protection plan. This is developed by the individual communities and public water systems by involving stakeholders to address the risks identified in the SWAP. The protection plan should be designed to reduce the risk of accidental contamination of drinking water sources and will require monitoring to ensure effectiveness. As Protection Plans are completed for public water supply areas on public lands in the planning area, it is anticipated that agreements will be prepared between the BLM and water providers to ensure that BLM management activities provide adequate protection of public water supplies (BLM AMS, 2010).

Three source water assessment reports were prepared for the communities of Paonia, Crawford, and Hotchkiss by CDPHE in 2004, within the lease parcel area. Each of the reports identify the type of source water used by the municipality, delineate its area, and list a contaminant source inventory. The reports also quantify each water source's susceptibility to contamination from both discrete and dispersed contaminate sources. Those rankings based on the contaminant source inventory in 2004 are shown in Table 3.23 Source Water Rankings below.

**Table 3.23 Source Water Rankings**

	Number of water sources	Susceptibility rating of contamination from both discrete and dispersed sources
Crawford	1 Groundwater Source	Moderately Low
Paonia	36 Groundwater Sources	Moderately Low to Moderate
Hotchkiss	2 Surface Water Sources	Moderately Low

The Town of Paonia began work on a protection plan in 2009 and completed the plan in 2010. In addition, the Town passed a Watershed Ordinance in 2003 to protect the Town's waterworks from injury and the Town's water supply from pollution. The Town of Hotchkiss is in the early development stages of a protection plan with an anticipated completion date of Spring 2013. The Town of Crawford is also in the process of developing a plan.

In addition to the municipalities, there are numerous small water providers in the area, some regulated by the State of Colorado if they serve more than 25 individuals, and some that serve fewer than 25 individuals. Several of these Public Water Systems have source water assessments completed by the State, but none have completed protection plans. These public water systems

serve customers in outlying areas of the valley beyond the reach of the municipal supplies. Their water sources are typically low flow springs that may follow local fault lines or shallow alluvial aquifers. These rare springs provide potable water in areas where groundwater wells typically contain constituents that exceed drinking water standards. Table 3.24 SW1 reflects the Public Water Systems that submitted comments to the BLM, and the parcels that could affect their water supply.

**Table 3.24 SW1. Public Water Systems Potentially Affected by Proposed Parcels-Based on Public Comments.**

Parcel IDs	6623	6624	6625	6604	6605	6606	6607	6608	6609	6610	6611	6612	6613	6614	6615	6616	6622	6617	6618	6619	6620	6621
<b>Surface Water Supplies</b>																						
Town of Hotchkiss			X				X	X														
Mountain Coal Company																	X					
Bowie																		X				
<b>Groundwater Supplies</b>																						
Town of Paonia		X			X	X			X							X	X	X		X	X	
Town of Crawford									X		X	X	X									
Bone Mesa Domestic Water District	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X						X
Sunshine Mesa Domestic Water			X				X	X														
Fruitland Domestic Water Company																						
Mad Dog Water Company												X										
Crawford Mesa Water Association											X	X	X	X	X							X
Pitkin Mesa Pipeline Company			X															X				
Stucker Mesa Domestic Water Company			X																			
Jay Creek Water Company							X	X														
Stewart Mesa Domestic Water Company									X													
Deutsch Domestic Water Company												X										
Belknap Spgs Domestic Water Company			X				X	X														

**Water Rights**

There are approximate 66 water structures located on the lease parcels. These structures include headgates, ditches, ponds, and pipelines. Each structure is listed in the Colorado Decision Support System database. Many of these structures are irrigation ditches in historical right-of-ways traversing BLM. Table 3.25 SW2 shows the irrigation ditches affected by the lease sale area as provided by public input. There are also many stock watering ponds located on BLM maintained by the grazing permittee.

Water use by oil and gas activities can result in water depletions to the basin. Development requires the use of water in many phases including, drilling, hydraulic fracturing and completion, road dust abatement, and hydrostatic pipeline testing. In the Programmatic Biological Assessment for the BLM Fluid Mineral Program in Western Colorado, volumes of fresh water depletions are estimated at 1.2 acre-feet per well. Most hydraulic fracturing jobs require between 4 acre-feet and 24 acre-feet per well. The source for this additional water is usually recycled from produced water in the well field and not fresh water sources.

**Table 3.25 SW2. Irrigation Providers Affected by Proposed Parcels as Provided by Public Input**

Parcel IDs	6623	6624	6625	6604	6605	6606	6607	6608	6609	6610	6611	6612	6613	6614	6615	6616	6622	6617	6618	6619	6620	6621
<b>Irrigation Ditch Companies</b>																						
North Fork Water Conservancy District							X	X									X	X		X	X	
Crawford Water Conservancy District												X	X									
The Turner Ditch Company	X	X		X	X	X			X													
Minnesota Canal & Reservoir Company	X	X		X	X	X			X													
Smith McKnight Ditch Company														X								
Elza Rew Ditch						X			X													
Roberts-Stucker Ditch Association			X																			
Stewart Ditch and Reservoir Company	X	X		X	X	X			X							X	X	X		X	X	
Overland Ditch and Reservoir Company	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Terror Ditch and Reservoir Company	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Crawford Clipper Ditch Company									X	X	X	X	X	X	X							X
Lone Cabin Ditch & Reservoir Company				X	X	X			X													
Saddle Mountain Ditch Company												X										
Fire Mountain Canal and Res. Company							X	X									X	X		X	X	
Aspen Ditch, BOR Smith Fork Project													X									
Monitor Ditch Company																						

### ***Water quality Data***

Existing water quality data collected by the BLM is limited in the area. The BLM conducts water quality sampling and macroinvertebrate monitoring in coordination with Land Health Assessments. Complete data and results from BLM monitoring in 2005 can be found in the 2007 Land Health Assessment Report for the North Fork and found on the web at: [http://www.blm.gov/co/st/en/fo/ufo/land\\_health.html](http://www.blm.gov/co/st/en/fo/ufo/land_health.html).

More routine monthly and quarterly water quality sampling is conducted by local watershed groups such as, the North Fork River Improvement Association (NFRIA) now the NFRIA-WSERC Conservation Center (NWCC), and the River Watch Network, funded by the State of Colorado. Additional water quality sampling is conducted by the State's Water Quality Control Division for the assessment and listing of impaired waters, and as required by the Colorado Oil and Gas Conservation Commission for monitoring oil and gas activities.

A recent baseline oil and gas monitoring inventory was conducted by NWCC. Water quality samples were collected at five locations located downstream from proposed and permitted oil and gas activities. A suite of 65 semi-volatile organic compounds, 11 dissolved metals, cations/anions, and field parameters were collected in 15 samples. Lab results found no detections of semi-volatile organic compounds in any of the samples. Total iron exceeded the State chronic standard in one sample collected at one sample site. None of the other parameters exceeded State acute or chronic standards (ERO, 2011). Selenium was not included in the suite..

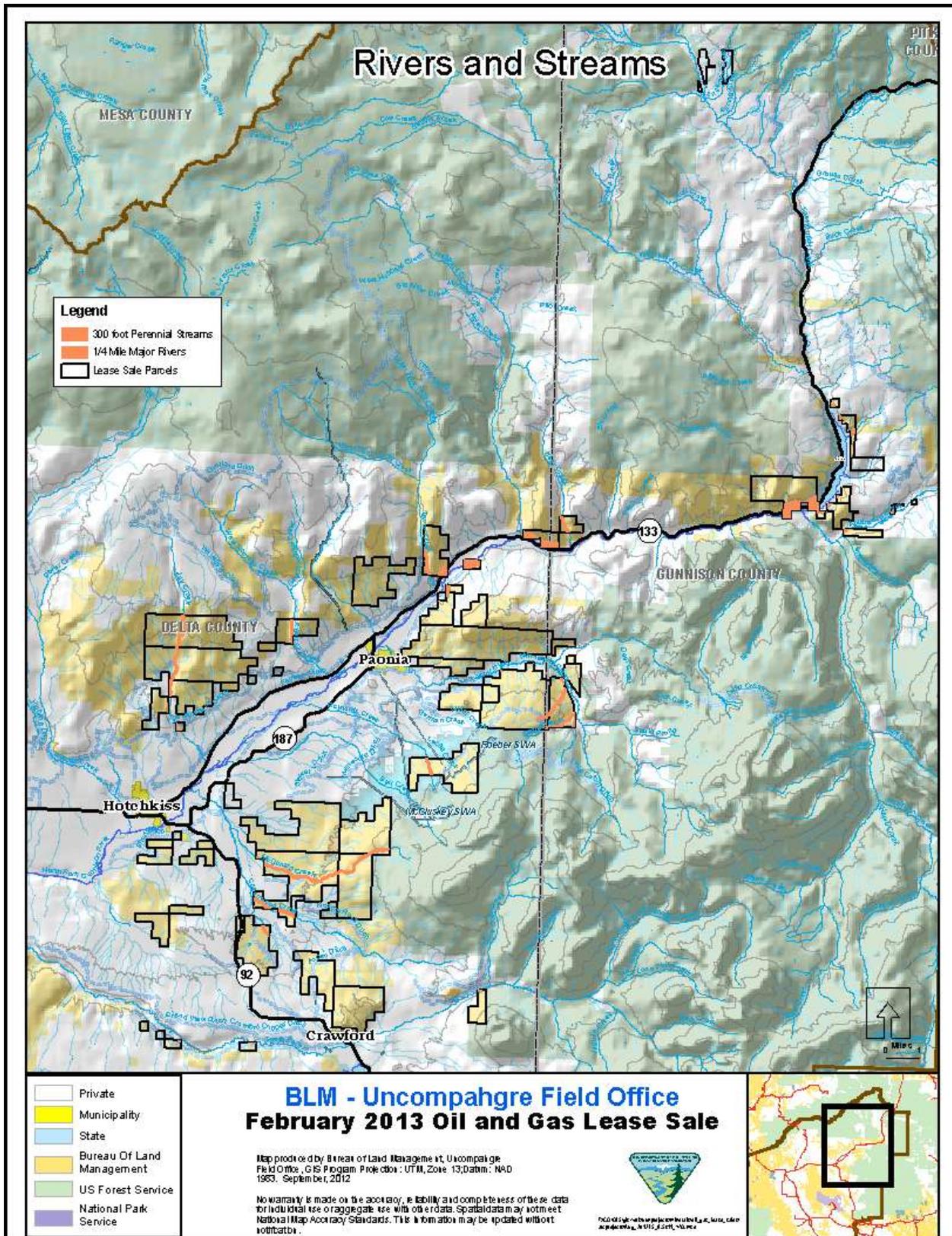


Figure 3.10 Rivers and Streams

## **Environmental Effects**

### **Proposed Action**

While the act of leasing the parcels would produce no impacts, subsequent development of the lease would lead to surface and subsurface disturbance from the construction of well pads, reserve pits, access roads, pipelines, and the drilling of exploration and development wells, which could impact surface water resources. The scope and extent of the impacts would be analyzed in accordance with NEPA at the time of exploration and development and would be proposed in an Application for Permit to Drill (APD). Some of the known potential impacts associated with oil and gas activities that could occur on these lease parcels include:

- Surface compaction leading to increases in runoff and peak flows;
- Increased sediment transport, through erosion processes such as sheet, gully, rill erosion, and mass movement;
- Changes to downstream channel morphology with increased flow and sediment.
- Alteration of floodplains at road and pipeline crossings;
- Changes in surface water/groundwater recharge from artificial interception of storm waters in ditches and berms associated with roads and well pads;
- Surface water contamination from spills or leaks from the well pad or reserve pits;
- Water depletions from hydraulic fracturing of wells, road dust abatement, and hydrostatic pipeline testing;
- Increases in selenium and salinity concentrations in water features due to surface disturbance and reduced flows resulting from oil and gas depletions.

The intensity of the impacts above would vary by each location and would be dependent on slope, soil characteristics, distance to water features, and containment of chemicals.

### **Cumulative Effects**

This lease sale, when combined with the past, present and reasonably foreseeable actions will elevate the potential for deterioration of surface water quality. Oil and gas activities could magnify other impacts in the watershed on private and federal lands due to the increased surface disturbance and use of hazardous chemicals and potential for leaks or spills in the watershed. Additional impacts on BLM and Forest Service lands in the watershed include; coal mining, grazing, rights of ways, recreation and travel infrastructure. Impacts associated with private property in the watershed include; cultivation, irrigation, livestock production, residential and commercial land development, urban runoff, coal mining, and oil and gas development.

The types of impacts expected from all of the cumulative actions in the watershed would be similar to those described for the proposed action. The cumulative effect of all the impacts in the watershed could contribute to decreased surface water quantity and quality.

### **Mitigation**

In addition to the mitigation provided regarding selenium impacts to T&E species, salinity, erosion, sediment transport and storm water control provided in the soils mitigation section 3.3.6, the following mitigation is recommended to protect surface water resources.

To reduce the potential environmental effects described above if development was to occur, the following lease notices should be applied:

### **Lease Notice UFO-LN-18, Surface And Ground Water**

For the purposes of protecting: Surface and/or Ground Water: Municipal Watersheds and Public Water Supplies

The lessee/operator may be required ensure protection of Municipal Watersheds and Public Water Supplies in the following manner:

- Avoid surface occupancy within 1,000 horizontal feet of either side of a classified surface water supply stream segment (as measured from the average high-water mark of a water body) for a distance of 5 miles upstream of a public water supply intake with the classification “Water Supply” by the State of Colorado; or a designated watershed with a protection plan providing domestic water.
- Avoid surface occupancy within a 1,000-foot horizontal buffer of all Public Water Supplies using a groundwater well or spring or a designated watershed with a protection plan providing domestic water.
- Apply the following protective measures within a distance greater than 1,000 horizontal feet but less than 2,640 horizontal feet of a classified “Water Supply” using a groundwater well ,spring or surface water supply stream segment (as measured from the average high water mark of a water body) for a distance of 5 miles upstream of a public water supply intake with the classification “Water Supply” by the State of Colorado:
  - Use of pitless drilling systems.
  - Flowback and stimulation fluids contained within tanks that are placed on a well pad or in an area with down-gradient berming.
  - Follow COGCC rules for fracking operations and disclosure.
  - Notification of potentially impacted Public Water Systems 15 miles downstream.
- The use of evaporation ponds for means of disposing of produced water shall not be permitted on BLM administered lands or split estate within the municipal watershed.
- Collection of baseline water quality data (surface and/or groundwater) consisting of a pre-drilling sample collected beginning within a 100 feet of well pad, or where sufficient water exists to collect a sample per EPA or USGS collection methods. Additional sampling must be conducted during drilling operations and immediately following well completion. Each sample should analyze at a minimum: pH, alkalinity, specific conductance, major cations, major anions, total dissolved solids, BTEX/GRO/DRO, TPH, PAH’s (including benzo[a] pyrene and metals [arsenic, barium, calcium, iron, magnesium, manganese, lead, and selenium]). For municipal watersheds, a coordinated water resources monitoring plan may need to be developed with the BLM and

municipality. Each office will determine the sampling sites, intensity, and need for groundwater sampling, depending on site specific geology and risk. Results must be submitted to BLM within 3 months of data collection per Section 317B of the Colorado Oil and Gas Conservation Commission regulations.

In addition to the lease notice mentioned above, the BLM will review APDs to ensure:

- Sufficient surface casing is extended through all fresh water domestic aquifer zones and should be drilled with fresh water mud;
- Cementing would comply with all Federal and State requirements to ensure aquifer integrity;
- Municipal and domestic springs are not degraded in volume or quality. Hydrologic studies may be recommended for this purpose.

### **Lease Notice UFO-LN-20 Protection of Surface Waters: Water Bodies**

The lessee/operator may be required modify or adjust development plans if the proposal is located in the proximity of any of the following:

#### Major River Corridors:

Avoid surface occupancy within 200 meters of bank-full stage or within 100 meters (328 feet) of the 100-year floodplain.

#### Perennial Streams:

Avoid surface occupancy within 300 feet from the edge of the ordinary high-water mark (bank-full stage) of perennial streams.

Review site locations for more suitable locations from 300 to 500 feet from the edge of the ordinary high-water mark (bank-full stage) of perennial streams.

#### Irrigation Ditches, Intermittent/Ephemeral Channels, and other water bodies:

Review site locations including pads, roads, and pipelines for possible relocation of up to 200 meters to a new location to reduce potential impacts to these water features.

#### Additional Mitigation Measures:

Site specific conditions analyzed at the time of development related to surface water features including irrigation ditches, may warrant the following additional protective measures:

- Pitless drilling systems;
- Flowback and stimulation fluids contained within tanks that are placed on a well pad or in an area with down-gradient berming;

- Follow COGCC rules for fracking operations and disclosure;
- Collection of baseline water quality data (surface and/or groundwater) consisting of a pre-drilling sample collected beginning within a 100 feet of well pad, or where sufficient water exists to collect a sample per EPA or USGS collection methods. Additional sampling must be conducted during drilling operations and immediately following well completion. Each sample should analyze at a minimum: pH, alkalinity, specific conductance, major cations, major anions, total dissolved solids, BTEX/GRO/DRO, TPH, PAH's (including benzo[a] pyrene and metals [arsenic, barium, calcium, iron, magnesium, manganese, lead, and selenium]). For municipal watersheds, a coordinated water resources monitoring plan may need to be developed with the BLM and municipality. Each office will determine the sampling sites, intensity, and need for groundwater sampling, depending on site specific geology and risk. Results must be submitted to BLM within 3 months of data collection per Section 317B of the Colorado Oil and Gas Conservation Commission regulations.

Additional regulations applying to oil and gas activities:  
 Colorado Oil and Gas Conservation Commission Rules  
 BLM Onshore Oil and Gas Regulations at 43 CFR Part 3160  
 BLM Onshore Orders

#### **Finding on Public Land Health Standard 5:**

A complete Land Health Assessment was conducted in 2006 and 2007. There were 18.4 miles of streams assessed for Land Health Standard 5 in the lease parcel area. Within the lease parcel area, 13.2 miles of streams were found to be “meeting” standard 5, while 5.2 miles were found to be “meeting with problems.” A rating of “meeting with problems” is made when more than one indicator is showing problems. Soil surface indicators are used as surrogates to determine the potential for suspended sediment loading in streams. Surrogate indicators include the amount of bare soil surface, live plant basal coverage, and the amount of plant litter on the soil surface. None of the streams in the assessment were found to be “not meeting.” In addition, none of the 10 water quality samples conducted found parameters exceeding State water quality standards. Selenium was undetected in all water quality samples.

Leasing these parcels would not alter these Land Health Standard findings. Development of these lease parcels would increase surface disturbance, increasing the potential for deterioration of soil, vegetative health and water quality. Standard 5 would continue to be identified as met until further assessed.

#### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on surface water would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

### ***Public Water Supplies***

Under the Preferred Alternative, several parcels were deferred in cases where public water supplies serving more than 25 individuals with delineated watersheds, overlapped with the proposed parcels.

### ***Water Rights***

There are approximately 34 water structures located on the lease parcels. These structures include headgates, ditches, ponds, and pipelines. Each structure is listed in the Colorado Decision Support System database. Many of these structures are irrigation ditches in historical right-of-ways traversing BLM. Under the Preferred Alternative, some of the same irrigation providers could continue to be affected by portions of parcels as described in the Proposed Action.

### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on surface water would be similar to those described under the Proposed Action.

### **Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

### **No Action Alternative**

There would be no impacts to Surface Water under the No Action Alternative.

## **3.3.17 WASTES, HAZARDOUS OR SOLID**

### **Affected Environment**

There are no known hazardous or other solid wastes on the proposed lease sale parcel.

### **Environmental Effects**

#### **Proposed Action**

A determination will be made as to whether solid or hazardous wastes have been previously used, stored, or disposed of at proposed oil and gas construction sites at the time individual APDs are submitted. Substances emitted during and used in the exploration, development, and production of oil and gas reserves may pose a risk of harm to human health and the environment. Potential impacts will be analyzed in subsequent environmental analysis. Conditions of Approval and mitigation at the APD stage are expected to minimize potential impacts.

### **Cumulative Effects**

This lease sale, when combined with the past, present and reasonably foreseeable actions could add hazardous wastes to the environment, however conditions of approval at the development phase are expected to minimize these impacts.

### **Mitigation**

Oil and gas operations will, at a minimum, comply with the Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development “The Gold Book” (BLM 2007). In addition, waste from oil and gas operations will be managed in accordance with all Federal, State, and local regulations.

At the time of APD approval, Conditions of Approval (COAs) will be attached to ensure compliance with environmental obligations, 43 CFR §3162.5.

### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on hazardous materials would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on hazardous materials would be similar to those described under the Proposed Action.

### **Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

### **No Action Alternative**

There would be no hazardous materials impacts to the lease parcels from the No Action Alternative.

## **3.3.18 ENVIRONMENTAL JUSTICE**

### **Affected Environment**

While analyzing a federal action, BLM identifies and addresses, as appropriate, disproportionately high and adverse human health and environmental effects of program, policies, or activities on minority or low income populations. Environmental Justice involves fair treatment, which means that no group of people, including a racial, ethnic, or socio-economic group, should bear a disproportionate share of negative environmental consequences resulting from a federal action (Executive Order 12898, February 11, 1994).

U.S. Census Bureau summary data for Gunnison and Delta Counties (U.S. Census Bureau, 2008a and 2008b), and 2000 Census data for Census Tract 9639 in Gunnison County (U.S. Census Bureau, 2009), do not indicate that there are ethnic groups or communities or low-income populations within the upper drainage of the North Fork of the Gunnison River area, or in

adjacent portions of Delta County that may be affected by the proposed action. The Hispanic community has the largest minority population in Delta County, at 14.0 percent. African Americans, American Indians and Pacific Islanders account for approximately two percent of the Delta County population (Census 2011). 13.9 percent of the population in Delta County is below the poverty level compared with 12.9 percent in Colorado as a whole (Census 2011).

## **Environmental Effects**

### **Proposed Action**

The proposed action to lease the parcels is not expected to negatively or disproportionately impact minority or low income populations. If subsequent development were to occur, minority or low income populations are not expected to be directly or disproportionately affected. Indirect effects could include an increase to overall employment opportunities related to the oil and gas and service support industry in the region as well as the economic benefits to state and county governments related to royalty payments and severance taxes. Other effects to the human environment, positive or negative, would apply to all public land users in the project area, regardless of status.

### **Cumulative Effects**

Minority and low income populations are dispersed throughout the county. Therefore, no minority or low-income populations would suffer disproportionately high and adverse effects as a result of any of the action, even when combined with other actions in the area.

### **Mitigation**

None

### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on environmental justice would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on environmental justice would be similar to those described under the Proposed Action.

### **Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

### **No Action Alternative**

There would not be disproportionate negative effects to minority and low-income populations.

### **3.3.19 ACCESS**

#### **Affected Environment**

Various types of existing access routes (highways, county roads, BLM and private roads) will be utilized to access the proposed lease parcels. Highways 92 and 133 provide access into the general area. From these highways county roads would be utilized whenever available and beyond that existing roads, on BLM and private lands, would be used as appropriate. If there is no existing route to a specific parcel, construction of a new access route would be required.

#### **Environmental Effects**

##### **Proposed Action**

Existing roads will be utilized to the extent possible in all instances. If new routes are required during potential development, construction standards would be determined on a case-by-case basis as appropriate for the local topography, soils, vegetation and amount and type of traffic.

##### **Cumulative Effects**

If development of a lease parcel occurs, there would be a short term increase in traffic in the general area during the duration of drilling and completion of the well(s). Once well(s) are completed only a minimal increase in local traffic would be anticipated.

##### **Mitigation**

Upon submission of a development proposal, Conditions of Approval will be attached to the permit on a case-by-case basis to ensure protection of existing access routes and specify construction standards for new routes that may be required. Environmental protections, or BMP's, such as dust abatement measures or required power washing of vehicles before entering the lease will be applied when necessary. On new access routes, Conditions of Approval may also require that upon final completion of lease development and operations, the new access route would be reclaimed.

##### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on access would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

##### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on access would be similar to those described under the Proposed Action.

##### **Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

##### **No Action Alternative**

There would be no impacts to access from the No Action Alternative.

### **3.3.20 TRANSPORTATION**

#### **Affected Environment**

The current travel designations for the nominated lease parcels on public lands are located within a “Limited” Off-Highway Vehicle (OHV) designated area. Nominated lease parcels located on private surface do not fall under BLM’s travel restrictions. As directed within the BLM Land Use Planning Handbook (H-1601-1) Appendix C, all areas within a “Limited” designation are required to have a defined travel management network (Limited to Designated Routes) completed within 5 years of the signing of the ROD for the Resource Management Plan. In the interim, the Uncompahgre Field Office manages the nominated parcels as “Limited to Existing Routes” until further comprehensive travel management planning can be conducted. The North Fork transportation system, where the nominated lease parcels are located, includes Hwy 133 and 92 (West Elk Byway), several BLM routes (roads and trails), and Delta and Gunnison County roads. Traffic on these routes varies each season but overall the use can be described as low to moderate.

#### **Environmental Effects**

##### **Proposed Action**

Under the proposed alternative, there are no impacts to transportation on BLM lands that can be identified until site specific analysis for any development that is proposed. At the APD stage, further analysis will be conducted, including analysis of transportation/access.

##### **Cumulative Effects**

Development intensity, terrain, and proximity to main travel corridors, towns, and recreation facilities will greatly influence transportation impacts. It is possible that post-lease industrial development could result in increased traffic.

##### **Mitigation**

At the development phase, conditions of approval will be applied to minimize effects to highways, county roads, and existing and/or designated routes and minimize construction of new routes. The majority of the nominated parcels on are within a “Limited” Off-Highway Vehicle designation and are recommended to include the following mitigation, (lease notice UFO-LN-03) in order to encourage appropriate transportation considerations be applied to proposals to explore or develop the fluid mineral resources from the nominated parcels.

#### **Lease Notice UFO-LN-03: OHV Areas**

The lessee/operator is given notice that motorized and mechanized travel may be limited to existing and/or designated routes.

Prior to any surface disturbing activities on the lease area, the BLM Authorized Officer must be contacted to obtain a map of the existing and/or designated routes. BLM will work with the lessee to determine the best sites for roads, pads, facilities, etc. The overall goal of this measure is to reduce impacts to soils, control erosion and to protect populations of threatened,

endangered, sensitive or candidate plant species.

***Affected nominated lease parcels:*** 6619, 6620, 6622, 6617, 6616, 6624, 6623, 6604, 6606, 6609, 6605, 6625, 6610, 6607, 6608, 6611, 6615, 6612, 6613, 6621, and 6614.

### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on transportation would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on transportation would be similar to those described under the Proposed Action.

### **Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

***Affected nominated lease parcels:*** 6619, 6622, 6617, 6616, 6624, 6623, 6604, 6606, 6609, 6605, 6625, 6610, 6607, 6608, 6611, 6615, 6612, 6613, 6621, and 6614.

### **No Action Alternative**

There would be no impacts to transportation from the No Action Alternative.

## **3.3.21 REALTY AUTHORIZATIONS**

### **Affected Environment**

Existing authorized facilities, including rights-of-way, are likely to be present on the proposed lease parcels on Federal surface. Typical right-of-way authorizations include transmission and distribution powerlines, telephone lines, access roads to private land, county roads, highways, communication sites, buried pipelines, ditches and canals, irrigation facilities and railroads.

Lease Parcel 6610 includes split estate with privately owned surface rights. Delta County owns surface rights in approximately 100 acres located in the N2SE of Section 28, T. 14 S., R. 92 W. This parcel contains Delta County's closed North Fork Landfill and current North Fork Trash Transfer Station. The site is currently regulated by the Colorado Department of Public Health and Environment under a Subtitle D Solid Waste 30 year post closure restriction and no surface or near surface disturbance is allowed on this site.

Lease parcel 6622 includes Bureau of Reclamation (BOR) withdrawn lands which includes BOR facilities. These facilities occur on portions of Sections 5 and 9 in T.13S., R.89W. in Gunnison County. Further, pursuant to an Interagency Agreement (IA) between BLM and the BOR in 1983, BLM will not issue permits, leases, or licenses on acquired or withdrawn lands under BOR's management without their consent and concurrence on all conditions and stipulations.

## **Environmental Effects**

### **Proposed Action**

While the act of leasing the parcels would produce no impacts, subsequent development of the lease would lead to surface disturbance from the construction of well pads, access roads, and pipelines. The scope and extent of the impacts would be analyzed in accordance with NEPA at the time of exploration and development and would be proposed in an Application for Permit to Drill (APD).

### **Cumulative Effects**

If a lease is developed, it is likely additional rights-of-way would be required for off-lease facilities. However, until an actual plan of development is received, there is no way of determining the location and type of right-of-way facility that might be proposed. At the development phase, conditions of approval and stipulations will be applied to minimize cumulative effects of any new right-of-way facilities as well as protecting existing facilities.

### **Mitigation**

Upon submission of an actual development proposal, existing authorized facilities will be considered and avoided to the extent possible. If they cannot be avoided, caution will be taken to ensure no damage to the facility or disruption of use occurs. Conditions of approval and stipulations will be applied to the authorization on a case-by-case basis to ensure protection of existing facilities. As necessary, authorization holders will be contacted to coordinate activities that may influence their facilities.

Parcel 6622 includes 383.820 acres of BOR withdrawn lands and facilities for the Paonia Project, including portions of the Paonia Reservoir and Paonia State Park. In accordance with the IA mentioned above, it is recommended that BLM defer the withdrawn BOR lands upon the parcel in order to protect BOR facilities.

The following lease notice is recommended to be included on all parcels in order to protect existing authorized facilities.

#### **Lease Notice UFO-LN-21: BLM Authorized Facilities**

The lessee/operator is given notice that BLM authorized facilities are likely to be present on the proposed lease parcels on Federal surface. The lessee may be required to avoid existing authorized facilities to the extent possible. If they cannot be avoided, caution will be taken to ensure no damage to the facility or disruption of use occurs and site specific Conditions of Approval may be applied by BLM to the development proposal. If necessary, authorization holders will be contacted to coordinate activities that may influence their facilities.

The following lease notice is recommended to be included on Parcel 6610 containing Delta County's landfill and trash transfer station in order to ensure adherence to Colorado Department of Public Health and Environment regulations:

### **Lease Notice UFO-LN-05: Landfill Area**

This lease parcel encompasses a portion of an authorized landfill. The lessee is hereby notified that, the operator may be required to implement specific measures to reduce impacts of oil and gas operations on the landfill areas. Such measures shall be developed in concert with the surface owner during the preparation of the NEPA analysis. The overall goal of these measures is to protect the landfill sites.

Upon submission of a development proposal, special stipulations would be applied as necessary to new right-of-way authorizations for any off-lease facilities on a case-by-case basis to ensure environmental protections and to specify construction standards of the new right-of-way facility. These stipulations would be dependent on resource issues specific to the local area such as topography, soils, vegetation, wildlife, etc.

### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on realty authorizations would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on realty authorizations would be similar to those described under the Proposed Action.

### **Mitigation**

Under the Preferred Alternative the mitigation and proposed BOR deferral of parcel 6622 would be the same as those described under the Proposed Action.

### **No Action Alternative**

There would be no impact to realty authorizations under the No Action Alternative.

## **3.3.22 RANGE MANAGEMENT**

### **Affected Environment**

There are several livestock grazing allotments within the proposed February 2013 Oil and Gas Lease Sale. Due to the location of these grazing allotments they provide critical forage for the permittee and are normally used in the fall or spring in coordination with United States Forest Service (USFS) grazing allotments or with adjacent private land.

### **Environmental Effects**

#### **Proposed Action**

The proposed action to lease the oil and gas parcels is not expected to negatively affect livestock grazing within the area. Nevertheless, the lease sale does allow for future applications to drill (APDs) to be proposed within the grazing allotments. These actions when applied for could negatively affect livestock grazing practices through increases in development in the area, which could lead to increased infrastructure roads, gates left open, livestock harassment, and an

increase in noxious weeds. However, conditions of approval at the development phase are expected to minimize these impacts.

### **Cumulative Effects**

Within the area of influence, other oil and gas activity, recreation use and local public use of public and private lands impact livestock grazing (e.g. gates left open occasionally, potential livestock harassment). If development of lease parcels occurs, there could be some increase in impacts, which would add cumulatively to that currently occurring. Because of conditions of approval and mitigation at the APD stage, the cumulative increase in impacts is expected to be minimal.

### **Mitigation**

Upon submission of an application to drill, Conditions of Approval will be attached to the permit on a case-by-case basis to ensure protection of valid existing rights i.e. livestock grazing.

### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on range management would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on range management would be similar to those described under the Proposed Action.

### **Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

### **No Action Alternative**

Under the No Action alternative, there would be no project-related effects to livestock management.

## **3.3.23 FIRE**

### **Affected Environment**

Hot, dry conditions are normal during the summer months within the project area, contributing to a moderate fire risk in varying vegetation types across the parcels. Fire activity is a natural process in these environments. Over the past 20 years, wildfires, notably the 1994 Wake Fire (parcels 6625, 6607, and 6608) and the 1996 Converse Fire (parcel 6617), have occurred on over 4000 acres of the landscape. In 1999, about 130 acres of prescribed fire, was used in and near parcel 6612, as part of the Sand Mountain Prescribed Fire. Currently, fuel mitigation treatments are taking place on about 526 acres, on and near parcels 6617, 6616, and 6624, as part of the Paonia Fuels Treatment, DOI-BLM-CO-S050-2008-0001 EA. There are additional fuel mitigation treatments proposed (Lamborn/McDonald and Hotchkiss) that may include acres on and near parcels 6608, 6609, 6611, and 6606.

## **Environmental Effects**

### **Proposed Action**

The Proposed Action is not expected to increase the risk of fire, or to affect the rate, duration, frequency of future fires. Minor brush clearing surrounding potential future infrastructure could provide a minor, immeasurable benefit by removing excess fuel.

### **Cumulative Effects**

The Proposed Action is not expected to increase fire risk; therefore there would be no cumulative impacts.

### **Mitigation**

Mitigation measures on potential future development could include appropriate common sense practices regarding heat/spark sources, particularly in dry conditions, would be followed. Avoiding parking hot vehicles on dry shrubs and other logical avoidance practices would be followed. Spark arresters would be required for equipment generating sparks, including ATVs. Additional mitigation measures would be assessed on a case-by-case basis.

### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on fire would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on fire would be similar to those described under the Proposed Action.

### **Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

### **No Action Alternative**

Under the No Action alternative, there would be no project-related effects to fire hazards or management.

## **3.3.24 NOISE**

### **Affected Environment**

The federally managed mineral estate lands nominated for mineral leasing occur primarily on BLM managed surface lands surrounding the communities of Crawford, Hotchkiss and Paonia. There are also rural developments on private lands outside of these communities which are also in close proximity to the lands nominated for mineral leasing at this time. Levels of ambient noise in these areas is considered to be low to moderate. Ambient sounds tend to be a combination of agricultural (i.e., livestock, tractors, irrigation pumps, product transport),

industrial (i.e. coal mining, loading at rail heads, rail cars, moving trains, gravel quarry, heavy equipment yards), and natural (i.e. wind, birds, river flowing) with the occasional noise from airline traffic (i.e. jets, prop planes and scenic flight tours) and noise from vehicles travelling on Colorado State highways 92 and 133 and OHVs recreating on public and private lands. The people living in these communities and the visitors in the area value the relatively low to moderate noise levels of the soundscape found throughout the northfork area.

## **Environmental Effects**

### **Proposed Action**

The issuance of leases would not directly impact the residences surrounding the BLM lands nominated for mineral leasing. Project-specific impacts to the residents of Crawford, Hotchkiss, Paonia and rural dwellings near the BLM lands nominated for leasing, relating to future authorizations cannot be analyzed until an exploration or development application is received and approved. The BLM does not have established noise standards. In 2006, the COGCC established regulatory limits.

However, if leases were developed, effects from exploration and production would be the noise generated from these activities. Residents and visitors in the area would experience sound above normal ambient noises. Noise is generated during oil and gas drilling and development and production. The noise caused during development would be heard from the heavy equipment used to construct the well pad and road access, the generators that run the drill rig and truck traffic that delivers equipment, supplies and workers to and from the drilling location. Removal of hydrocarbons may also require the installation of pumpjacks to remove the fluid minerals during production.

### **Cumulative Effects**

The cumulative impact area for noise is the area of influence which is primarily the areas surrounding the communities of Crawford, Hotchkiss and Paonia. Leasing in and of itself would not result in cumulative impacts to noise. However, if leases were developed, cumulative impacts would be the sounds of exploration and drilling activities added to the ambient noises already within the landscape. It could be anticipated that short-term cumulative impacts from noise would be low to moderate during the construction and development phase, fluctuating with the specific activity. Long-term cumulative impacts would be low, and would also fluctuate with the specific activity. These impacts would be addressed at the development phase.

### **Mitigation**

The operator will be expected to address such issues when raised during public comment periods associated with preparation of environmental assessments or when complaints are reported to the operator, BLM or the Colorado Oil and Gas Conservation Commission. Parcels nominated which are in close proximity to communities are recommended to include the following mitigation as a lease notice in order to encourage appropriate noise considerations be applied to proposals to explore or develop the fluid mineral resources of the nominated parcels.

### **Lease Notice UFO-LN-07 Noise**

The lessee is hereby notified that, the operator drilling on Federal mineral estate may be required to consider the impact of operations on nearby communities and residences. Operators can expect that adjustments to operating procedures to accommodate local community and residential concerns may be necessary. For example, the operator may be required to try to work out reasonable compromises on issues such as noise, dust, and traffic. Noise pollution could be further reduced by using best available technology such as installation of multi-cylinder pumps, hospital sound reducing mufflers, and placement of exhaust systems to direct noise away from communities of Crawford, Hotchkiss, and Paonia or West Elk Byway. And,

The lessee may be required to apply mitigation to reduce light pollution by using methods such as limiting height of light poles, timing of lighting operations (meaning limiting lighting to times of darkness associated with drilling and work over or maintenance operations), limiting wattage intensity, and constructing light shields.

### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on noise would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on noise would be similar to those described under the Proposed Action.

### **Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

### **No Action Alternative**

Under the No Action Alternative, the parcels would not be leased, therefore there would be no additional impacts from noise to the area.

## **3.3.25 RECREATION**

### **Affected Environment**

The nominated lease parcels are within areas that are sparsely populated which allows for dispersed recreational opportunities. Parcel 6619 is directly adjacent to the Paonia State Park. Recreational uses include, but are not limited to, sightseeing tours, boating, big game and small game hunting, mountain lion hunting, Off-Highway Vehicle (OHV) riding, mountain biking, horseback riding, fishing, and hiking. The amount of recreational use in the nominated lease parcels varies by season. The communities of Crawford, Paonia, and Hotchkiss have seen an increase in tourism through the outreach efforts of the Delta County tourism board and the communities Chamber of Commerce's. The marketing efforts have focused on community quality of life and quality recreational opportunities such as participation programs (e.g. organic farming, picking grapes for wine making, and art centers), farmer markets, wine tasting and

tours, local festivals and farm dinners, and recreational, boating and sightseeing opportunities on nearby West Elk Loop Byway and public lands.

### **Environmental Effects**

#### **Proposed Action**

Under the proposed action, there are no impacts that can be identified until site-specific analysis for proposed development is conducted. Concerns could possibly be mitigated through Conditions of Approval (COAs) at the time a site specific action is analyzed. However, in areas being developed for oil and gas, tourism would probably decrease due to likely degradation of the natural settings which in turn would affect visitor expectations for high quality recreational opportunities.

#### **Cumulative Effects**

Development intensity, terrain, and proximity to main travel corridors, towns, recreation facilities, etc. will greatly influence recreation impacts. Cumulative impacts to recreation and adjacent recreation areas could be the loss of desired natural settings, the displacement of wildlife, temporary noise and lighting at night, and traffic or hazards on existing and/or designated routes.

#### **Mitigation**

As part of reviewing and approving APDs, recreational impacts would be mitigated by applying COAs.

#### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on recreation would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

#### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on recreation would be similar to those described under the Proposed Action.

#### **Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

#### **No Action Alternative**

There would be no impacts to recreation from the No Action Alternative.

### **3.3.26 VISUAL RESOURCES**

#### **Affected Environment**

##### **Visual Resource Management Classes**

Visual resource management (VRM) requirements are applied to projects to mitigate impacts to landscape character, comprised of form, color, texture, and line. Visual resource management

has four management classes: Class I, Class II, Class III, or Class IV. Table 3.26 shows the VRM for the all the nominated parcels as directed within the 1989 Uncompahgre Basin Resource Management Plan. The management objectives for the different classes are:

Class I - The highest value and is assigned to areas with special designations such as a Wilderness Area. This class is to preserve the existing character of the landscape.

Class II - Retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Class III - Partially retain existing landscape character. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate a casual observer's view. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Class IV - Provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

In 2009, a Visual Resource Inventory (VRI) was completed of the lands within the Uncompahgre Field Office (UFO) in preparation for the RMP Revision. This inventory resulted in VRI Classes II, III and IV throughout the nominated parcels; this information will be used in the identification of management classes in the RMP Revision.

The natural night skies throughout the proposed lease parcels are notably dark due to the absence of development (i.e. residences, lit expressways).

The parcels occur on a mixture of private surface/federal minerals and federal surface/federal minerals. While VRM objectives do not apply to non-BLM lands, visual concerns may be addressed on split estate where Federal minerals occur.

**Table 3.26 VRM Classes**

<b>Parcel #</b>	<b>Approximate Acreage</b>	<b>1989 RMP VRM Class</b>
<b>6623</b>	191	Assumed III*
<b>6623</b>	155	III
<b>6624</b>	994	Assumed III*
<b>6624</b>	1465	III
<b>6625</b>	95	Assumed III*
<b>6625</b>	2134	III
<b>6604</b>	831	III
<b>6605</b>	327	Assumed III*
<b>6605</b>	698	III
<b>6606</b>	2080	III
<b>6607</b>	118	Assumed III*
<b>6607</b>	1881	III
<b>6608</b>	72	Assumed III*
<b>6608</b>	1057	III

<b>Parcel #</b>	<b>Approximate Acreage</b>	<b>1989 RMP VRM Class</b>
<b>6609</b>	1516	III
<b>6609</b>	806	Assumed III*
<b>6610</b>	1005	Assumed III*
<b>6610</b>	1367	III
<b>6611</b>	1072	III
<b>6611</b>	204	Assumed III*
<b>6612</b>	1389	Assumed III*
<b>6613</b>	1757	Assumed III*
<b>6614</b>	1246	Assumed III*
<b>6615</b>	1708	III
<b>6615</b>	429	Assumed III*
<b>6616</b>	609	Assumed III*
<b>6616</b>	182	III
<b>6622</b>	1617	Assumed III*
<b>6617</b>	1161	Assumed III*
<b>6617</b>	975	III
<b>6618</b>	296	Assumed III*
<b>6619</b>	437	Assumed III*
<b>6620</b>	106	Assumed III*
<b>6621</b>	81	Assumed III*

\* The nominated parcels for leasing are in areas that were not classified in the 1989 RMP, but are being managed as VRM Class III.

### **West Elk Byway and Nearby Communities**

The West Elk Byway passes through or is directly adjacent to several towns such as Carbondale, Paonia, Hotchkiss, Crawford, Gunnison, and Crested Butte. The byway is known for its history, showcasing towns of varied lifestyles, and natural beauty. This route also provides access to the White River and Gunnison National Forests, the Black Canyon of the Gunnison National Park, Gunnison Gorge National Conservation Area, Curecanti National Recreation Area, and Crawford and Paonia State Parks.

The Delta County Master Plan notes the presence of the Scenic Byway and the protection and interpretation of the cultural heritage and natural resources in the area. The Delta County Master Plan also states the following goal:

The preservation of the rural lifestyle and landscape, which includes the natural environment and unique physical characteristics of Delta County. Natural resources associated with the rural landscape include open space and scenic viewsheds, and includes a desired strategy to map the significant physical features and environmental characteristics of the County, such as important scenic viewsheds.

The Town of Paonia has also developed a Highway 133 Corridor Master Plan which specifically states as a goal that “*The open scenic character of the West Elk Scenic Byway shall be protected.*” It states that new development should not detract from the rural qualities of the highway corridor and Paonia’s small-town character.

All or portions of the following parcels fall within a ½ mile of the West Elk Loop Scenic Byway on SH 133 and 92: 6617, 6619, 6607, 6622, 6620, 6623, 6616, 6614, 6610, 6621, 6613, 6615, and 6612.

All or portions of the following parcels are adjacent to the nearby communities of Crawford, Hotchkiss, and Paonia: 6605, 6624, 6612, and 6610.

## **Environmental Effects**

### **Proposed Action**

The proposed action of selling oil and gas leases does not create a visual impact. The subsequent development of a lease could affect landscape character. For example, temporary or permanent facilities that have height, such as produced water, condensate or oil storage tanks would provide a strong vertical and horizontal visual contrast in form and line to the characteristic landscape and vegetation, which may have flat, horizontal to slightly rolling form and line. Since potential oil and gas well locations cannot be accurately determined at the leasing stage, it is not possible to accurately predict the visual impacts. A single well pad screened by terrain in an area absent of visual receptors may have low to negligible impacts in Class III areas. Development would also be expected to favorably blend with the form, line, color and texture of the existing landscape.

The possible effects on nighttime lighting of drilling activities would have a temporary affect and would impact those in close proximity to the drilling activity. In most instances, the light from the operation would be visible as a point of light in the landscape, similar to headlights of passing vehicles. The most effect on night lighting is on residences in Crawford, Hotchkiss, and Paonia.

### **Cumulative Effects**

Development intensity, terrain, and proximity to visual receptors (e.g., main travel corridors, towns, recreation facilities, etc.) will greatly influence visual impacts. It is possible that post-lease industrial development could result in portions of or all of a VRM area to be downgraded to a lower classification if post-lease development activities are poorly designed.

### **Mitigation**

As part of reviewing and approving APDs, visual impacts would be mitigated by applying COAs, which could include using special paint colors, hiding facilities with vegetation, or redesigning or relocating facilities. Development would be expected to favorably blend with the form, line, color and texture of the existing landscape.

The nominated parcels which are within ½ mile of the West Elk Byway and adjacent to communities of Crawford, Paonia, and Hotchkiss are recommended to include the following mitigation (Lease Notice UFO-LN-06) in order to encourage appropriate visual considerations be applied to proposals to explore or develop the fluid mineral resources from the nominated parcels.

### **Lease Notice UFO-LN-06 Scenic Byways**

The lessee/operator is given notice that special design and reclamation measures may be required to minimize light and noise pollution as well as protect the outstanding scenic and natural landscape values of the following portion(s) of this lease:

For the purpose of protecting: Scenic Byways, Visual Resources, and Natural Soundscapes  
Minimize noise and light pollution as well as protect the outstanding scenic and natural landscape values in areas adjacent to communities of Crawford, Hotchkiss, and Paonia and/or within ½ mile of the West Elk Byway.

Reduce noise pollution by using best available technology such as installation of multi-cylinder pumps, hospital sound reducing mufflers, and placement of exhaust systems to direct noise away from communities of Crawford, Hotchkiss, and Paonia or West Elk Byway.

Reduce light pollution by using methods such as limiting height of light poles, timing of lighting operations (meaning limiting lighting to times of darkness associated with drilling and work over or maintenance operations), limiting wattage intensity, and constructing light shields.

Protect outstanding scenic and natural landscape values with special design and reclamation measures incorporated into the Surface Use Plan of Operations of a development proposal which may include transplanting trees and shrubs, fertilization, mulching, special erosion control structures, irrigation, site re-contouring to match the original contour, buried tanks and low profile equipment, and painting to minimize visual contrasts. The proposed location of the activity may be moved up to 200 meters in sensitive areas, such as unique geologic features and rock formations, visually prominent areas, and high recreation use areas.

**Affected nominated lease parcels:** 6617, 6619, 6607, 6622, 6620, 6623, 6616, 6614, 6610, 6621, 6613, 6615, 6612, 6605, and 6624.

### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on visual resources management would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on visual resources management would be similar to those described under the Proposed Action.

### **Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

**Affected nominated lease parcels:** 6617, 6619, 6607, 6622, 6616, 6614, 6610, 6621, 6613, 6615, 6612, 6605, and 6624.

## **No Action Alternative**

There would be no impacts to visual resources from the No Action Alternative.

### **3.3.27 GEOLOGY AND MINERALS**

#### **Affected Environment**

All parcels are located in areas with high oil and gas potential. From oldest to youngest, the surface geology is defined by formations ranging in age from the Jurassic Age Morrison, Wanakah and Entrada Formations (Jmwe) to the Cretaceous Age Dakota and Burro Canyon Formations (Kdb), Mancos Shale (Km) and Mesaverde Group (Kmv), to the Tertiary Age Wasatch Formation equivalent, Ohio Creek Formation (Two), and Intrusive igneous rock (Tmi). The sedimentary formations consist of sandstone, siltstone, shale, conglomerate and seams of coal deposits. Potential shallow natural gas resources could exist as conventional gas within the sandstone beds and as coal-bed methane within the open sands and coal units of the Mesa Verde Formation. Potential also exists for shale gas and shale oil in the organically rich, deep marine Mancos Shale. Potential for the extraction of coal resources exists where parcels or portions of parcels overlay the Mesaverde Group (Kmv) and where the coal unit is less than 3,500 feet deep. Active coal mine workings are adjacent to parcels 6189 and 6207 but not directly within the parcel boundaries. There are also numerous abandoned mines throughout the northfork area, the closest abandoned mine is adjacent to parcel 6207 but in no case are any of the known abandoned coal mine workings directly within any nominated parcel boundary.

Surface geology by parcel:

6623: Km, Kmv; 6624: Km, Kmv; 6625: Km, Kmv; 6604: Km; 6605: Km; 6606: Km; 6607: Km; 6608: Km; 6609: Km; 6610: Km; 6611: Km; 6612: Km, Tmi; 6613: Km; 6614: Jmwe, Km; 6615: Km; 6616: Km, Kmv; 6622: Kmv, Two; 6617: Km, Kmv; 6618: Two; 6619: Kmv, Two; 6620: Kmv, Two; 6621: Km

#### **Geologic Hazards**

The Colorado Geological Survey describes geologic hazards as naturally occurring land features that are prone to failure. These include: landslides, rockfall, avalanches, mud and debris flows, collapsible soils, and earthquakes (Open File Report 09-01). The factors that influence the occurrence of these hazards typically include slope or topography, underlying geology, and hydrology or the input of water to the system. The trigger for a failure requires input such as precipitation or alteration of the surface by construction.

Over the last century subsidence has been noted at the surface directly above some of the historic mines in the area. However, there has been no known damage to overlying resources or to structures attributable to subsidence of mined out areas. Although subsidence may have aggravated or contributed to some landslide movements, comparisons are difficult to identify given that natural geologic hazards can occur anywhere across the landscape at anytime.

#### **Underground Injection**

In Colorado, oil and gas exploration and production waste and enhanced recovery wells are called Class II Underground Injection Control (UIC) wells. The EPA has delegated to the State of Colorado primacy for regulation of Class II (UIC) wells for underground injection of oil and

gas exploration and production waste. The Colorado Oil and Gas Conservation Commission administers the UIC program in accordance with federal regulations (40 CFR, Parts 144, 145, 146, and 147), providing the EPA with semi-annual reports. Additional information can be found at: <http://water.epa.gov/type/groundwater/uic/index.cfm>

## **Environmental Effects**

### **Proposed Action**

Leasing would not have impacts to geology or minerals. If developed, the fluid mineral resource would be extracted. Environmental impacts to specific geologic formations and mineral resources would be identified and analyzed at the APD stage.

### **Cumulative Effects**

None

### **Mitigation**

It is recommended that all or portions of parcels 6623, 6624, 6625, 6604, 6616, 6622, 6617, 6619, and 6620 have stipulation UB-10 “Coalbed Methane/Coal Mining Stipulation” applied (see Attachment F).

### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on geology and minerals would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on geology and minerals would be similar to those described under the Proposed Action.

### **Mitigation**

Under the Preferred Alternative it is recommended that all or portions of parcels 6623, 6625, 6604, 6617 have stipulation UB-10 “Coalbed Methane/Coal Mining Stipulation” applied (see Attachment F).

### **No Action Alternative**

There would be no impacts to the geology and mineral resources from the No Action Alternative.

## **3.3.28 PALEONTOLOGY**

### **Affected Environment**

The majority of the lands within the proposed lease areas are managed as Potential Fossil Yield Class (PFYC) 1 and 2, with less than 10% of the surface being categorized as PFYC. Under the Paleontological Resources Protection act, PFYC class 1 and 2 are unlikely to yield important or scientifically significant fossils (very low and low potential) and no inventory is required. PFYC

class 3 lands have moderate potential to yield important fossil yields and should be investigated by pedestrian survey before development.

### **Environmental Effects**

#### **Proposed Action**

There are no direct effects to paleontological resources from the leasing action. Proposed developments after leasing may require inventory on Class 3 surfaces. The likelihood of negatively impacting any paleontological resource during development actions subsequent to leasing is low, and may occur in Class 3 areas. These areas will be inventoried prior to the authorization of any surface development activities, and any significant fossil resources will be either avoided or the effects mitigated.

#### **Cumulative Effects**

Cumulative effects are similar in nature and scope to individual impacts, and no additional cumulative effects are anticipated.

#### **Mitigation**

Mitigation for potential impacts at the development stage will be established in consultation with the BLM's state lead paleontologist. Mitigation usually involves professional excavation of fossils but may also include in-situ stabilization, protection and interpretation or off site alternatives.

#### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on paleontology would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

#### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on paleontology would be similar to those described under the Proposed Action.

#### **Mitigation**

Under the Preferred Alternative the mitigation would be the same as those described under the Proposed Action.

#### **No Action Alternative**

There would be no impacts to known or potentially significant paleontological resources.

### **3.3.29 SOCIO-ECONOMICS**

#### **Affected Environment**

This section incorporates by reference the 2010 Socioeconomic Baseline Assessment Report for the Uncompahgre Field Office. The report provides a thorough description of the economic and social conditions throughout the field office, from which this EA focuses on the North Fork

Valley. The area of influence for this lease sale falls within Delta and Gunnison counties, in an area known as the North Fork Valley. The population of the North Fork Valley is estimated to be 9,572 in 2010, an increase of 4.2% over the previous decade (Census Bureau, 2011). In 2010, some of the main industries in the area were: Education and Healthcare (20.3%), Construction (13.9%), Mining (11.2%), and Agriculture (10.9%) (Census Bureau, 2011). Approximately 30% of all income in the area is due to social security and other retirement income sources.

The North Fork Valley, as measured in this EA, contains 380,640 acres, of which this EA proposes to lease either 29,506.998 acres (7.8%) or 20,555.458 (5.4%). Currently under lease for oil and gas development in the area are 124,078 acres (32.6%). However, most of these leases have not been drilled. There are currently 45 active well sites in the area, mostly north of the Paonia Reservoir.

Currently, the North Fork Valley is heavily dependent on two natural resources for much of its economy: the large underground coal deposits and the local natural amenities, viewed in the broad sense. The coal deposits, and the three mines extracting the resource, are responsible for the direct employment of over one thousand individuals, the majority of whom live in the area and the indirect employment of over 1700 others (Implan, 2010). This represents a slim majority of all jobs in the area. The natural amenities of the area are responsible for the majority of the remaining jobs. The impression of the North Fork Valley as a source of healthful, natural agricultural products has helped the area to develop specialized, often organic, small farms. These farms are heavily dependent on the positive impression that many consumers possess of the valley as a natural, relatively undisturbed area. Other job sectors are likewise dependent on the state of the natural environment of the area. Jobs related to tourism are estimated to be 13.4 % of the North Fork Valley, though this includes spending by locals as well as tourists (Census Bureau, 2011). Many of the tourists to the area are drawn by the natural amenities, participating in dispersed camping, hunting, and other outdoor activities. Retirees, representing nearly a third of all income in the area, likely have elected to live in the valley due in some part to the presence of the local natural amenities.

Federal oil and gas leases generate a one-time lease bonus bid (which often exceeds the minimum bid) as well as annual rents. The minimum competitive lease bid is \$2.00 per acre. If parcels do not receive the minimum bid they may be leased later as noncompetitive leases that don't generate bonus bids. Lease rental 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. During the lease period annual lease rents continue until one or more wells are drilled that result in production and associated royalties. The royalty rate is 12.5 percent of revenue associated with mineral extraction on federal leases. The State of Colorado receives 49% of all federal oil and gas revenue produced within the state.

Federal mineral lease revenue for the State of Colorado is divided as follows: 48.3 percent of all state mineral lease rent and royalty receipts are sent to the State Education Fund (to fund K-12 education), up to \$65 million in FY 2009 – FY 2011, and growing at four percent per year thereafter. Any amounts greater than the upper limit flow to the Higher Education Capital Fund. 10 percent of all state mineral lease rent and royalty receipts are sent to the Colorado Water Conservation Board (CWCB), up to \$13 million in FY 2009, and growing at four percent per

year thereafter. Any amounts greater than the upper limit flow to the Higher Education Capital Fund. 41.4 percent of all state mineral lease rent and royalty receipts are sent to the Colorado Department of Local Affairs, which then distributes half of the total amount received to a grant program, designed to provide assistance with offsetting community impacts due to mining, and the remaining half directly to the counties and municipalities originating the FML revenue or providing residence to energy employees.

Bonus payments are allocated separately from rents and royalties, in the following manner: 50 percent of all state mineral lease bonus payments are allocated to two separate higher education trust funds: the "Revenues Fund" and the "Maintenance and Reserve Fund". The Revenues Fund receives the first \$50 million of bonus payments to pay debt service on outstanding higher education certificates of participation (COPs). The Maintenance and Reserve Fund receives 50 percent of any bonus payment allocations greater than \$50 million. These funds are designated for controlled maintenance on higher education facilities and other purposes. The remaining 50 percent of state mineral lease bonus payments are allocated to the Local Government Permanent Fund, which is designed to accumulate excess funds in trust for distribution in years during which FML revenues decline by ten percent or more from the preceding year.

## **Environmental Effects**

### **Proposed Action**

The leasing process provides a direct socio-economic benefit from the collection of bids, bonus bids, and rentals. There would not be other direct socio-economic benefit or detriment. Income from the sale goes to the federal and Colorado treasuries. The federal and Colorado treasuries would also receive revenue if leases that are not bought during the lease sale are later purchased non-competitively. If leased parcels are later developed, economic and social impacts would result from temporary or permanent employment, rental or purchase of equipment, royalties paid to the federal and Colorado treasuries, and other expenditures related to development. 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 BLM receives an APD in which detailed information about proposed wells and facilities would be provided for particular leases.

Economic benefits from developing leases would include increased revenue to federal, state and local governments due to royalty payments, as well as the economic benefits from an increase in jobs related to well drilling and well production. These jobs and industry expenses would likely increase various jobs in other sectors of the area economy, further increasing employment.

Lease development could also result in negative social impacts, including (1) decrease in the recreational character of the area, (2) reduced scenic quality, (3) increased dust levels, (4) increased traffic, (5) increased noise, and (6) increased demand on local services. However, most of these impacts would be minor and limited to the relatively short duration of drilling and completion activities. In addition, well development could result in some adverse impacts, specifically to the residents and property owners of the area. Although it would be further examined once the specific site is proposed at the APD stage, any drilling activity within or

directly adjacent to a residence would likely have large, though temporary, adverse socioeconomic impacts. These would likely include impacts to noise, traffic, and aesthetics, all due to the intensive nature of the drilling and completion stages. These impacts would likely have an adverse effect on property values, depending on the proximity of the well to the property (BBC b, 2001; Thode, Stephen, 2006). However, these effects would be short-term in nature and soon after production began on the well, the site would be reclaimed to its earlier state, thereby causing minimal to no impacts on the surrounding residences.

Broader negative economic impacts could occur as a result of a loss of the region's reputation of environmental amenities and quality. Even if the environmental negatives from well development are short-term, they may affect consumer's perceptions about the area in the long-term, serving to negatively impact local agriculture, tourism, and the attraction to retirees. However, the low expected level of development within the area is unlikely to have a large effect on consumer's perceptions of the region. These various effects would need to be examined closely during the APD process, once exact locations of wells were determined, to measure the overall social and economic effects of well development on the leases.

### **Cumulative Effects**

This lease sale will likely contribute to the state and federal treasuries. If the leases are developed then multiple economic impacts will occur, some positive, some negative.

The area of impact currently has relatively few disturbances due to oil and gas wells. Out of 124,078 leased acres, only 45 active wells exist in the North Fork Valley. In addition, there are currently 17 APDs pending in the area. There is also a proposed 150 gas well Master Development Plan for Bull Mountain. This proposal would offer another 29,506.998 acres for lease. It is unclear how many, if any, wells will be developed due to this leasing action. The other primary industry in the area is coal mining. The entire North Fork Valley has coal leases of nearly 40,000 acres, of which 1,600 acres are disturbed. It should be kept in mind that all disturbed areas, both from coal and gas wells, will be reclaimed to their natural states once production has finished.

### **Mitigation**

None.

### **Preferred Alternative**

The direct and indirect effects of the Preferred Alternative on socio-economics would be similar to those described under the Proposed Action. However, parcel #6610 is located in close proximity to a school and for this reason, a portion of the parcel as described in attachment E, under this alternative would be deferred. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced. In particular, the negative social and economic effects of well development would be largely diminished, as many of the most contentious leases and lease segments have been removed from availability in this alternative.

### **Cumulative Effects**

The cumulative effects of the Preferred Alternative on socio-economics would be similar to those described under the Proposed Action.

### **Mitigation**

None.

### **No Action Alternative**

In this alternative, all nominated leases would be removed from the lease sale. Revenue at the time of the sale would be lost. Any future social or economic impacts from possible development would not be realized. However, the lease areas could be leased on future sales.

## 4.0 CONSULTATION AND COORDINATION

### 4.1 Tribes, Individuals, Organizations, or Agencies Consulted:

On December 7th, 2011 the UFO initiated the public notification period and sent letters to: Native American Tribes, Right of Way Holders, Special Recreation Use Permittees, Grazing Permittees, Split-estate landowners, State and County and Local Government officials, Other Federal Agencies, Congressionals, and Interested Parties. In addition, the BLM UFO notified the public by posting the proposed action on the BLM UFO internet homepage, and submitting a press release to local newspapers and organizations. This public scoping period was offered between December 7th, 2011 and January 9th, 2011. As a result of public comments the scoping period was extended to February 9, 2012.

In regards to notification to Native American Tribes, no comments were received from the Tribes that were consulted.

The Preliminary EA and unsigned FONSI, along with the list of available lease parcels and stipulations were made available to the public for a 30-day comment period beginning on March 7, 2012. The 30-day comment period was then extended until April 20, 2012 to allow the public additional time to submit comments. Various form letters were received regarding process, properties, and lifestyle. There were 677 individual comment letters received. Letters were received from 11 government agencies, 620 individuals, and 46 from organizations/associations. After review of the letters, substantive comments were received on the following topics (see Attachment G):

- Air Resources -60 comments
  - climate – 13 comments
  - process- 6 comments
  - health – 6 comments
- Access – 4 comments
- Cumulative Effects – 20 comments
- Editorial – 4 comments
- Environmental Justice – 0 comments
- Fire and Fuels – 4 comments
- Geology and Minerals – 15 comments
  - oil and gas – 8 comments
  - local seismicity- 16 comments
- Extend Comment Period – 14 comments
- Finding of No Significant Impact – 52 comments
- Floodplains – 1 comment
- Health – 13 comments
- Hydrologic Fracturing – 26 comments
  - Water Resources – 41 comments
  - Coal Mine areas – 3 comments
- Lands and Realty – 3 comments
- NEPA – adequacy of analysis – 53 comments

- NEPA – EIS – 76 comments
- Noise – 10 comments
- Process, procedure – 31 comments
- Range Management - 4 comments
- Recreation – 25 comments
- RMP – 133 comments
- Safety - 5 comments
- Scenic Byways - 2 comments
- Socio-economic -88 comments
  - agriculture, farms, wineries – 67 comments
  - property values – 46 comments
  - proximity – 14 comments
  - tourism – 18 comments
- Soil - 18 comments
  - Erosion, sediment – 3 comments
  - Selenium – 5 comments
  - Steep slopes – 12 comments
- Special Status Species – Plant – 4 comments
- Special Status Species – Fish -3 comments
- Special Status Species – Wildlife – 17 comments
- Travel and Transportation – 29 comments
- Vegetation - 2 comments
- Visual Resource Management - 14 comments
  - Light pollution – 5 comments
- Wastes, Hazardous or solid – 4 comments
- Water Resources – 21 comments
  - Domestic Water, infrastructure – 30 comments
  - Groundwater – 20 comments
  - Public water supplies – 13 comments
  - Surface water (ditches, canals) – 46 comments
  - Quantity – 4 comments
- Wetlands and Riparian Zones - 1 comment
- Wild and Scenic Rivers - 2 comments
- Wildlife – Terrestrial - 25 comments
  - Aquatic – 9 comments
- Lands with Wilderness Characteristics – 1 comment

After the end of the public comment period, the BLM analyzed the comments and made changes as necessary to the EA. A summary of public comments and responses is included as Attachment G.

## 5.0 LIST OF PREPARERS

### 5.1 BLM

Name	Title	Responsible for the Following Section(s) of this Document
Thane Stranathan	Natural Resource Specialist	Fluid Minerals
Edd Franz	Recreation Planner	Wilderness, Wild and Scenic Rivers, Land with Wilderness Characteristics
Glade Hadden	Archaeologist	Cultural, Native American Religions Concerns, Paleontology
Jedd Sondergard	Hydrologist	Soils, Farmlands (prime and unique), Ground Water, Surface Water, Floodplains
Lynae Rogers	Rangeland Specialist	Invasive, Non-native Species, Range Management
Amanda Clements	Ecologist	Vegetation, Wetlands/Riparian Zones
Melissa Siders	Wildlife Biologist	Threatened and Endangered Species, Migratory Birds, Terrestrial Wildlife, Aquatic Wildlife
Alan Kraus	Hazardous Materials Specialist	Hazardous Materials
Bruce Krickbaum	NEPA Coordinator	Review, Environmental Justice
Linda Reed	Realty Specialist	Access, Realty Authorizations

<b>Name</b>	<b>Title</b>	<b>Responsible for the Following Section(s) of this Document</b>
Kelly Homstad	Fire Specialist	Fire
Julie Jackson	Recreation Planner	Recreation, Visual Resources, Transportation,
Robert Ernst	Geologist	Geology and Minerals
Desty Dyer	Mining Engineer	Geology and Minerals
Gina Jones	NEPA Coordinator	Review
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Chad Meister	COSO Air Quality	Air Quality and Climate Change
David Epstein	COSO Socio-Economics	Socio-Economics

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## LIST OF ACRONYMS

<b>ACEC</b>	Areas of Critical Environmental Concern
<b>APD</b>	Application for Permit to Drill
<b>BCC</b>	Birds of Conservation Concern
<b>BLM</b>	Bureau of Land Management
<b>BMP</b>	Best Management Practice
<b>BOR</b>	Bureau of Reclamation
<b>CFR</b>	Code of Federal Regulations (43 CFR Subpart 3100)
<b>COGCC</b>	Colorado Oil and Gas Conservation Commission
<b>COSO</b>	Colorado State Office (BLM)
<b>CPW</b>	Colorado Parks and Wildlife
<b>DOI</b>	Department of the Interior
<b>DR</b>	Decision Record
<b>EA</b>	Environmental Assessment
<b>EIS</b>	Environmental Impact Statement
<b>EOI</b>	Expression of Interest
<b>ESA</b>	Endangered Species Act 1973 as amended
<b>FLPMA</b>	Federal Land Policy and Management Act 1976 as amended
<b>FONSI</b>	Finding of No Significant Impact
<b>FOOGLRA</b>	Federal Onshore Oil and Gas Leasing Reform Act of 1987
<b>GIS</b>	Global Information System
<b>ID</b>	Interdisciplinary
<b>KGS</b>	Known Geologic Structure
<b>LUP</b>	Land Use Plan
<b>MBTA</b>	Migratory Bird Treaty Act 1918
<b>MLA</b>	Mineral Leasing Act of 1920 as amended
<b>MMA</b>	Mining and Minerals Policy Act of 1970
<b>MOU</b>	Memorandum of Understanding
<b>NCLS</b>	Notice of Competitive Lease Sale
<b>NEPA</b>	National Environmental Policy Act 1969
<b>NHPA</b>	National Historic Preservation Act of 1966 as amended
<b>NTL</b>	Notice to Leasees
<b>RFFA</b>	Reasonable Foreseeable Future Actions
<b>RMP</b>	Resource Management Plan
<b>ROD</b>	Record of Decision
<b>SWCD</b>	Southwest Colorado District (BLM)
<b>TES</b>	Threatened and Endangered Species
<b>TL</b>	Timing Limitation
<b>UBRA</b>	Uncompahgre Basin Resource Area
<b>UFO</b>	Uncompahgre Field Office (BLM)
<b>USDI</b>	United States Department of the Interior
<b>USFWS</b>	United States Fish and Wildlife Service
<b>WO</b>	Washington Office (BLM)

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Figure 1 – General Map Proposed Action

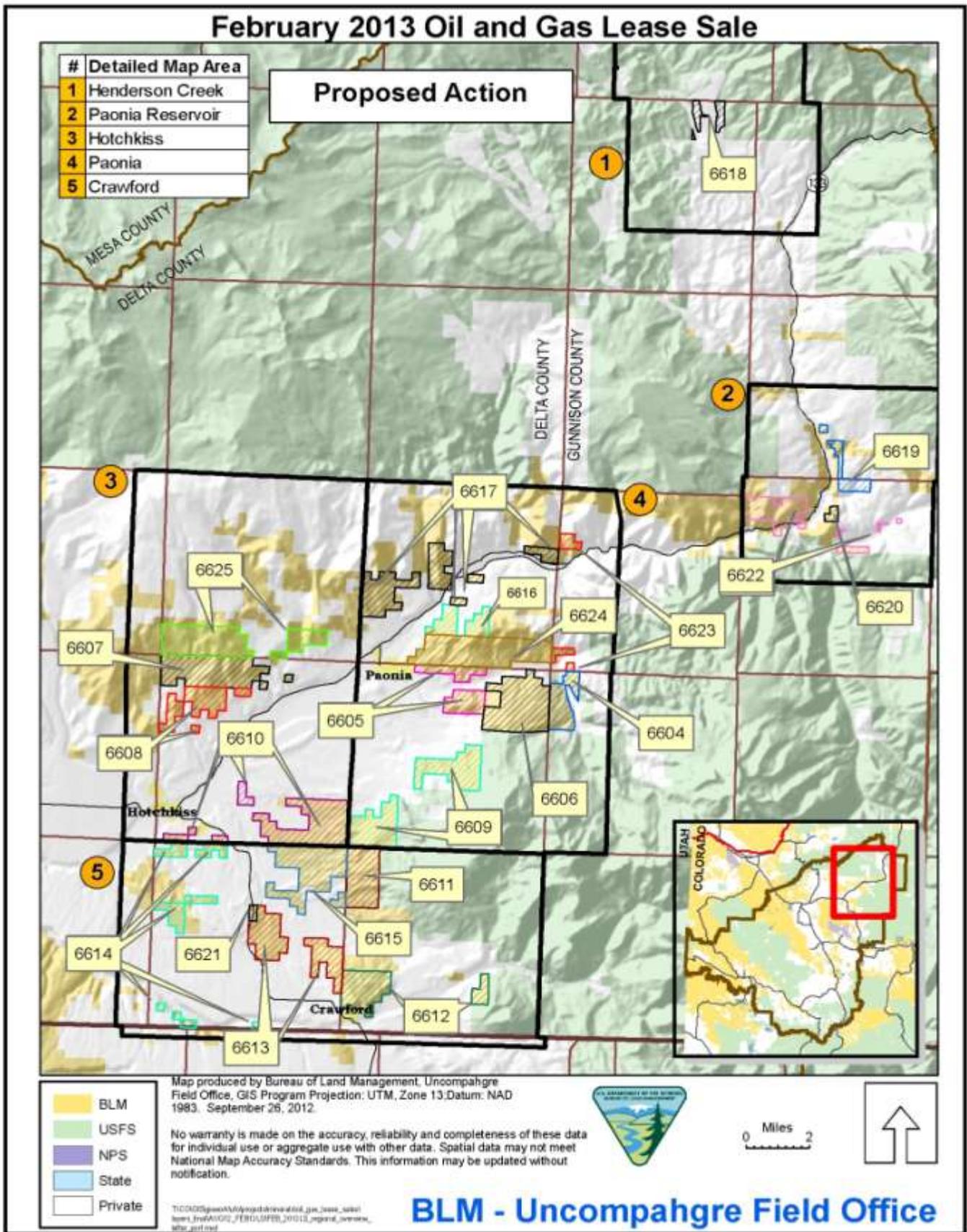


FIGURE 2 Propose Action: Henderson Creek Area

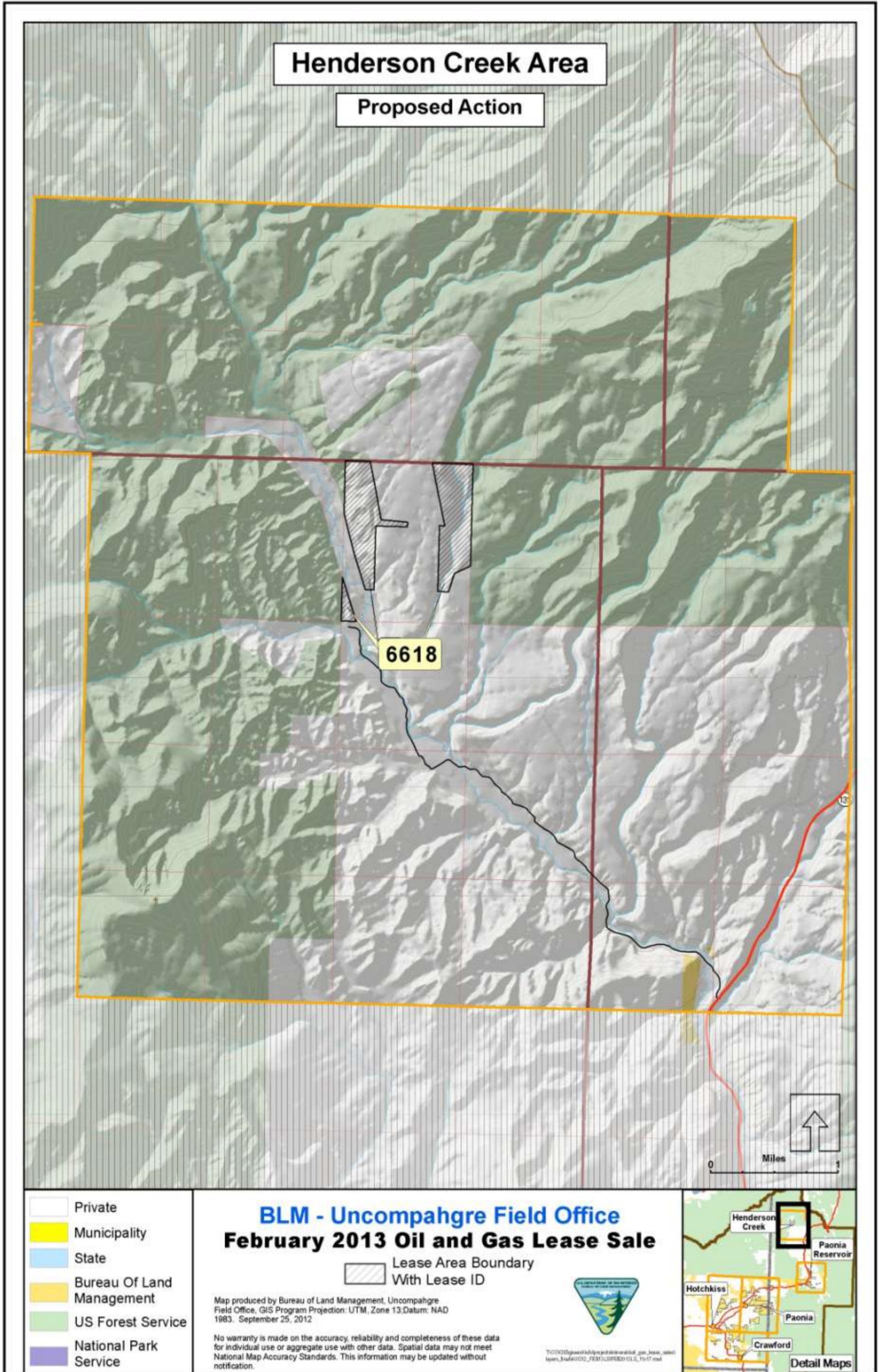


FIGURE 3 Proposed Action: Paonia Reservoir Area

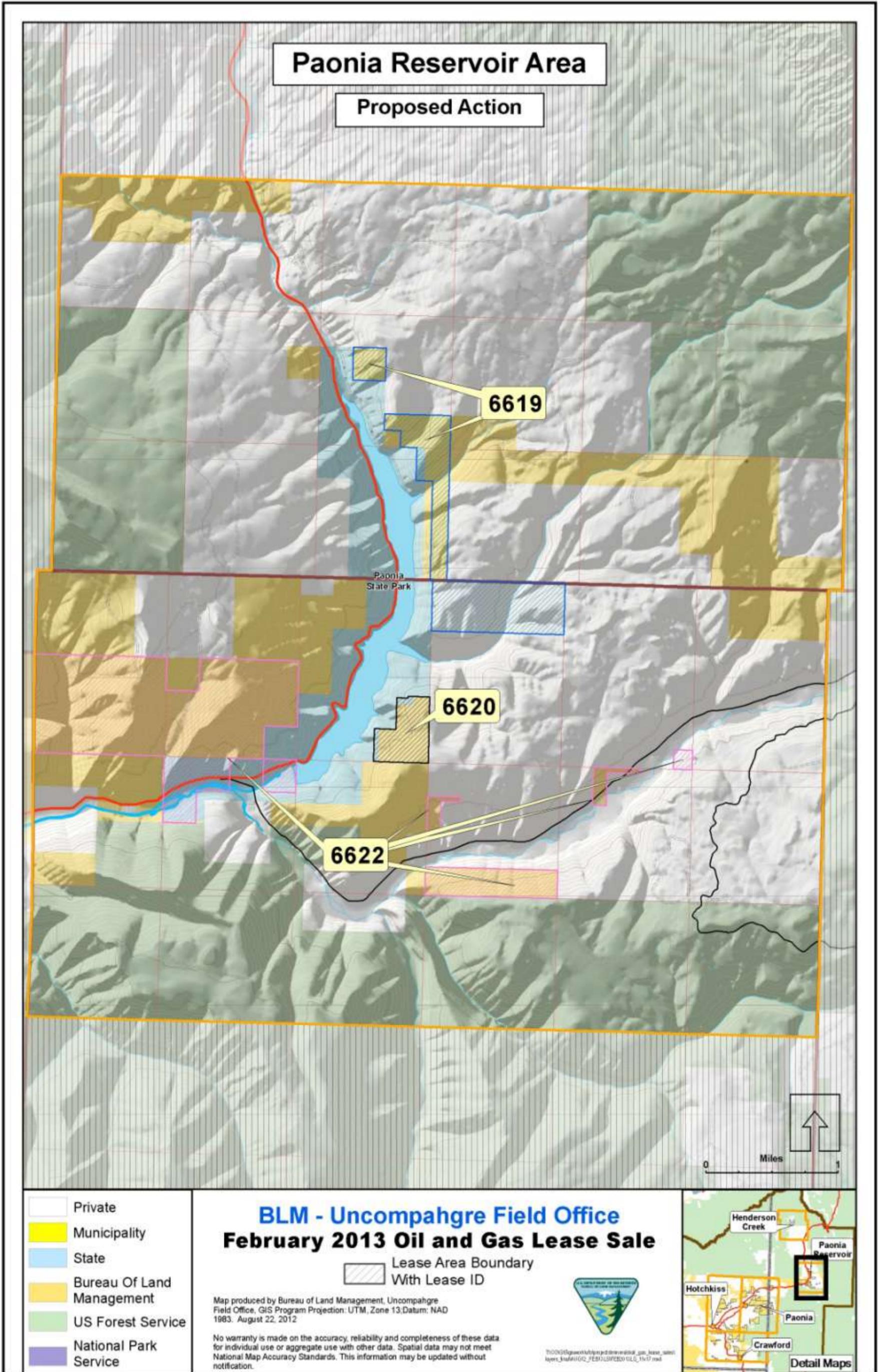


FIGURE 4 Proposed Action: Hothckiss Area

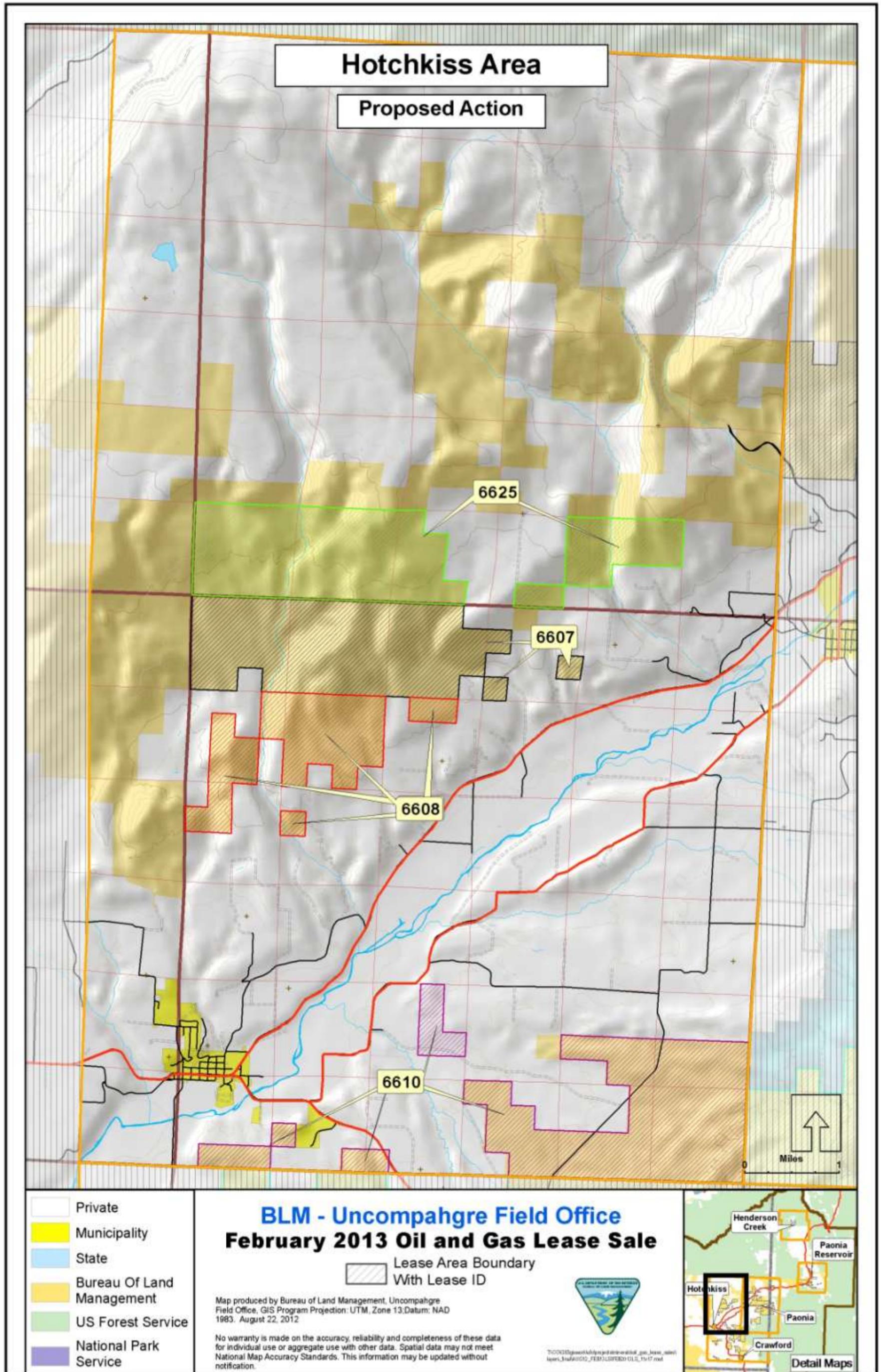


FIGURE 5 Proposed Action: Paonia Area

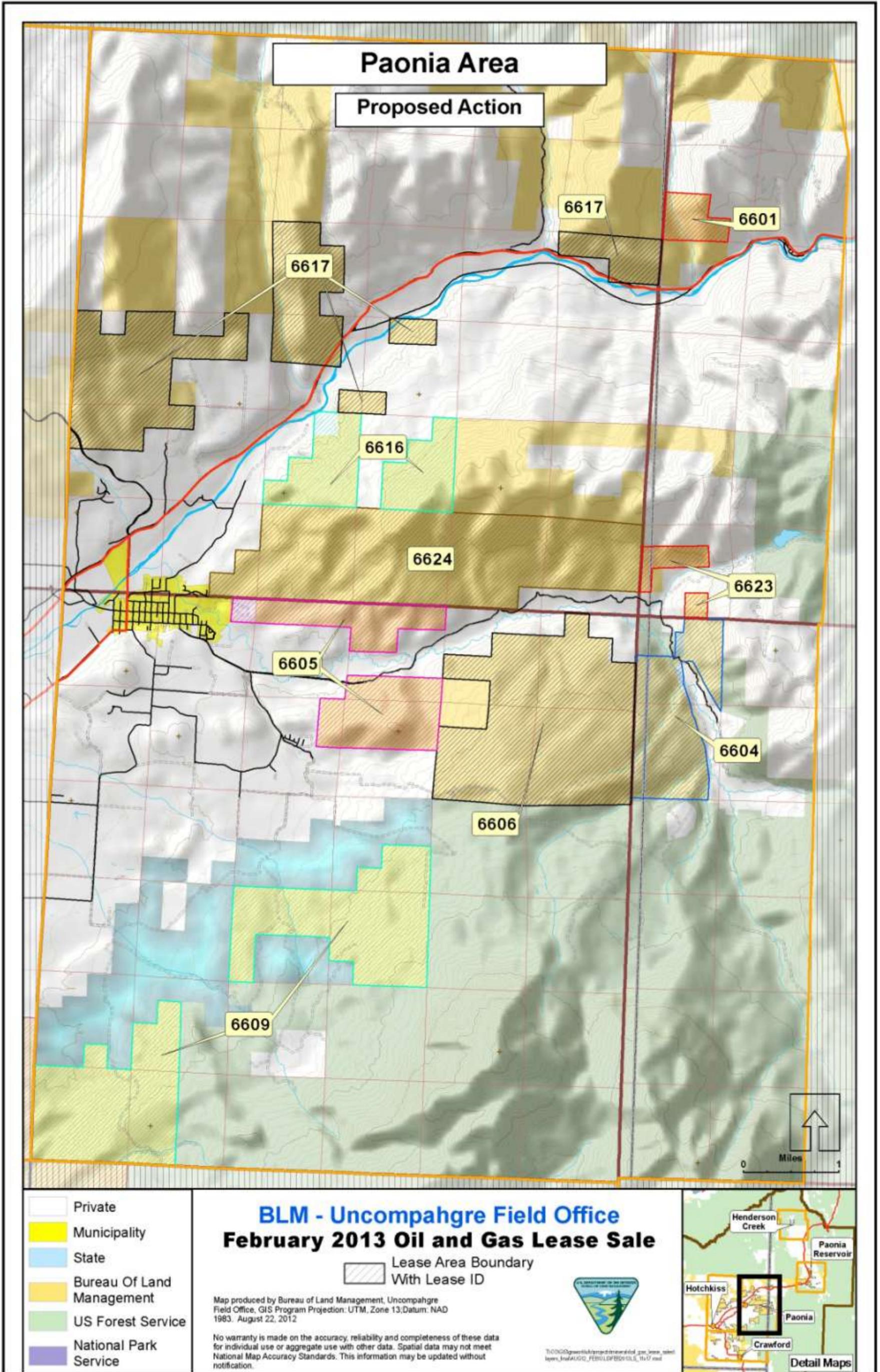
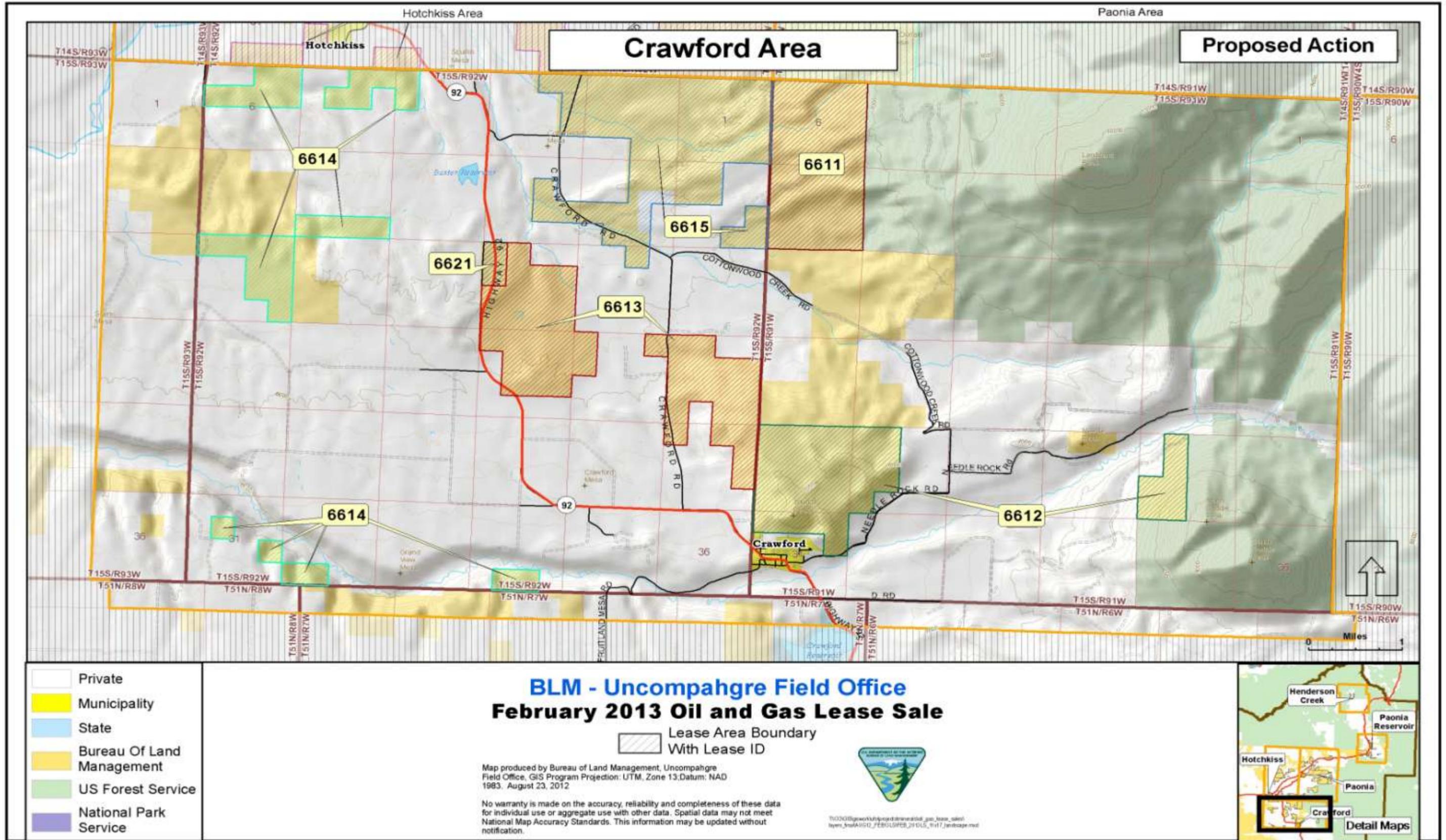


FIGURE 6 Proposed Action: Crawford Area



**ATTACHMENT A**  
**NOMINATED LANDS**  
December 12,2011  
February 14,2013  
**NOTICE OF COMPETITIVE LEASE SALE**  
**OIL AND GAS**

The Colorado State Office is offering to competitively lease 22 Federal oil and gas parcels within the Uncompahgre Field Office in the February 14, 2013 Lease sale totaling 29890.818 acres are located on Federal lands managed by the Uncompahgre Field Office in the State of Colorado.

THE FOLLOWING **ACQUIRED** LANDS ARE SUBJECT TO FILINGS IN THE MANNER SPECIFIED IN THE APPLICABLE PORTIONS OF THE REGULATIONS IN 43 CFR, SUBPART 3120.

**PARCEL ID: 6621 SERIAL #:**

T. 0150S., R 0920W., 6TH PM  
Sec. 15: W2NW;  
U.S. Interest 100.00%

Delta County  
Colorado 80.000 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0150S., R 0920W., 6TH PM  
Sec. 15: W2NW;

BLM; MDO: UBRA

THE FOLLOWING **PUBLIC DOMAIN** LANDS ARE SUBJECT TO FILINGS IN THE MANNER SPECIFIED IN THE APPLICABLE PORTIONS OF THE REGULATIONS IN 43 CFR, SUBPART 3120.

**PARCEL ID: 6619 SERIAL #:**

T. 0120S., R 0890W., 6TH PM  
Sec. 28: NWSWSE,E2SWSE;  
Sec. 28: SENW,SESE;  
Sec. 33: E2SESE;  
Sec. 33: NENE,E2SENE,E2NESE;  
T. 0130S., R 0890W., 6TH PM  
Sec. 3: Lot 5-12;

Gunnison County  
Colorado 456.320 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

The following lands are subject to Exhibit UB-10 to protect coal mining:

T. 0130S., R 0890W., 6TH PM  
Sec. 3: Lot 5-12;

BLM; MDO: UBRA

**PARCEL ID: 6622 SERIAL #:**

T. 0130S., R 0890W., 6TH PM  
Sec. 2: Lot 36;  
Sec. 5: Lot 15-18;  
Sec. 5: SW,NESE,W2SE,SESE;  
Sec. 6: Lot 17-22;  
Sec. 6: E2SW,SE;  
Sec. 8: NENE,N2NW,SWNW;  
Sec. 9: Lot 1-4,7,10;  
Sec. 9: E2NE,SWNE;  
Sec. 10: Lot 2,11-14;  
Sec. 11: Lot 3;

Gunnison County  
Colorado 1618.970 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-03 to protect bald eagle winter concentration areas:

T. 0130S., R 0890W., 6TH PM  
Sec. 2: Lot 36;  
Sec. 5: S2SW,SWSE;  
Sec. 6: SESW,S2SE;  
Sec. 8: NENE,NENW,W2NW;  
Sec. 9: Lot 4,7,10;  
Sec. 9: SENE;  
Sec. 10: Lot 2, 11-14;  
Sec. 11: Lot 3;

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0130S., R 0890W., 6TH PM  
Sec. 2: Lot 36;  
Sec. 5: Lot 15,18;  
Sec. 5: SESE;

Sec. 5: NESE,W2SE,SW,SESE;  
Sec. 6: Lot 17-22;  
Sec. 6: E2SW, SE;  
Sec. 8: NENE,NENW,W2NW;  
Sec. 9: Lot 1-4,7,10;  
Sec. 9: SWNE,E2NE;  
Sec. 10: Lot 2,11;  
Sec. 11: Lot 3;

All lands are subject to Exhibit UB-10 to protect coal mining.

PVT/BLM;BLM; MDO: UBRA

**PARCEL ID: 6620 SERIAL #:**

T. 0130S., R 0890W., 6TH PM  
Sec. 4: Lot 19,23;  
Sec. 4: SESE;

Gunnison County  
Colorado 105.970 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

All lands are subject to Exhibit UB-10 to protect coal mining.

BLM; MDO: UBRA

**PARCEL ID: 6618 SERIAL #:**

T. 0110S., R 0900W., 6TH PM  
Sec. 2: Lot 1-5,7,8,11-14;

Gunnison County  
Colorado 299.500 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

PVT/BLM; MDO: UBRA

**PARCEL ID: 6623 SERIAL #:**

T. 0130S., R 0900W., 6TH PM  
Sec. 7: Lot 3,4;

Sec. 7: E2SW,SWSE;  
Sec. 31: Lot 5-7,10,12;

Gunnison County  
Colorado 356.280 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-03 to protect bald eagle winter concentration areas:

T. 0130S., R 0900W., 6TH PM  
Sec. 7: SWSE;

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0130S., R 0900W., 6TH PM  
Sec. 7: SWSE;  
Sec. 31: Lot 5-7,10,12;

The following lands are subject to Exhibit UB-10 to protect coal mining:

T. 0130S., R 0900W., 6TH PM  
Sec. 7: Lot 3,4;  
Sec. 7: E2SW,SWSE;  
Sec. 31: Lot 6,7,12;

BLM; MDO: UBRA

**PARCEL ID: 6604 SERIAL #:**

T. 0140S., R 0900W., 6TH PM  
Sec. 6: Lot 1,2,6,7;  
Sec. 6: S2NE,E2SW;  
Sec. 6: SE;  
Sec. 6: EXCEL HES 104 & HES 204;  
Sec. 7: Lot 1-4;  
Sec. 7: E2W2;  
Sec. 7: E2;  
Sec. 7: EXCEL HES 104 & 87;

Gunnison County  
Colorado 830.668 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0140S., R 0900W., 6TH PM

Sec. 6: S2NE;  
Sec. 7: E2;

The following lands are subject to Exhibit UB-10 to protect coal mining:

T. 0140S., R 0900W., 6TH PM  
Sec. 6: Lot 1;  
Sec. 6: SENE;

BLM; MDO: UBRA

**PARCEL ID: 6624 SERIAL #:**

T. 0130S., R 0910W., 6TH PM  
Sec. 32: E2SE,SWSE;  
Sec. 33: ALL;  
Sec. 34: ALL;  
Sec. 35: N2,SW,N2SE,SWSE;  
Sec. 36: Lot 1-12;

Delta County  
Colorado 2471.370 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-03 to protect bald eagle winter concentration areas:

T. 0130S., R 0910W., 6TH PM  
Sec. 32: NESE,SWSE;

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0130S., R 0910W., 6TH PM  
Sec. 32: SWSE,E2SE;  
Sec. 33: ALL;  
Sec. 34: S2NE,W2,SE;  
Sec. 35: S2N2,SW,NESE,W2SE;  
Sec. 36: Lot 1-3,5-12;

The following lands are subject to Exhibit UB-10 to protect coal mining:

T. 0130S., R 0910W., 6TH PM  
Sec. 34: NE,E2NW;  
Sec. 35: N2;  
Sec. 36: Lot 1-6;

BLM; MDO: UBRA

**PARCEL ID: 6616 SERIAL #:**

T. 0130S., R 0910W., 6TH PM  
Sec. 27: NENE,S2NE,E2SW,SE;  
Sec. 28: E2,E2SW,SWSW;

Delta County  
Colorado 800.000 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-03 to protect bald eagle winter concentration areas:

T. 0130S., R 0910W., 6TH PM  
Sec. 28: NE,NESW,SWSW;

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0130S., R 0910W., 6TH PM  
Sec. 27: SWNE,E2NE,E2SW,NWSE;  
Sec. 28: ALL;

The following lands are subject to Exhibit UB-10 to protect coal mining:

T. 0130S., R 0910W., 6TH PM  
Sec. 27: ALL;

BLM; MDO: UBRA

**PARCEL ID: 6617 SERIAL #:**

T. 0130S., R 0910W., 6TH PM  
Sec. 13: Lot 1,2;  
Sec. 13: NE;  
Sec. 16: Lot 1-5, 7-11;  
Sec. 19: Lot 1-4;  
Sec. 19: E2,SENE,E2SW;  
Sec. 20: Lot 1,4-6;  
Sec. 21: Lot 1-7;  
Sec. 22: Lot 2,3,10;  
Sec. 29: Lot 1;  
Sec. 30: Lot 5-11;

Delta County  
Colorado 2122.970 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-03 to protect bald eagle winter concentration areas:

T. 0130S., R 0910W., 6TH PM  
Sec. 13: Lot ALL;  
Sec. 21: Lot 1,5,6,7;  
Sec. 22: Lot 2,3;

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0130S., R 0910W., 6TH PM  
Sec. 13: Lot 1,2;  
Sec. 13: NE;  
Sec. 16: Lot 3-5,7-11;  
Sec. 19: Lot 2-4;  
Sec. 19: SWNE,E2NE,SENE,E2SW;  
Sec. 19: SE;  
Sec. 20: Lot 1,4-6;  
Sec. 21: Lot 1-7;  
Sec. 22: Lot 2,3,10;  
Sec. 29: Lot 1;  
Sec. 30: Lot 5-11;

The following lands are subject to Exhibit UB-10 to protect coal mining:

T. 0130S., R 0910W., 6TH PM  
Sec. 13: Lot 1,2;  
Sec. 13: NE;  
Sec. 16: Lot 1-5,7-11;  
Sec. 19: Lot 1-3;  
Sec. 19: NE,SENE;  
Sec. 20: Lot 1;  
Sec. 21: Lot 2;

BLM; MDO: UBRA

**PARCEL ID: 6605 SERIAL #:**

T. 0140S., R 0910W., 6TH PM  
Sec. 3: Lot 1-4;  
Sec. 3: S2NW,S2S2;  
Sec. 4: Lot 1-4;  
Sec. 5: Lot 1;  
Sec. 9: E2NE;  
Sec. 10: N2;

Delta County  
Colorado 1004.360 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

BLM; MDO: UBRA

**PARCEL ID: 6606 SERIAL #:**

T. 0140S., R 0910W., 6TH PM

- Sec. 1: Lot 3;
- Sec. 1: E2E2SE;
- Sec. 1: E2SE IN DELTA COUNTY;
- Sec. 1: SWNE,S2NW,SW,W2SE;
- Sec. 2: S2NE,N2SW,SE;
- Sec. 11: E2,S2NW,SW;
- Sec. 12: ALL IN DELTA COUNTY;
- Sec. 12: E2E2E2;

Delta County  
Gunnison County  
Colorado 2000.100 Acres

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0140S., R 0910W., 6TH PM

- Sec. 1: Lot 3;
- Sec. 2: S2NE,N2SW,W2SE;
- Sec. 11: S2NW,SW,W2E2,SESE;

BLM; MDO: UBRA

**PARCEL ID: 6609 SERIAL #:**

T. 0140S., R 0910W., 6TH PM

- Sec. 15: SESW,SE;
- Sec. 21: N2,W2SW;
- Sec. 22: N2,N2SW,SESW,SE;
- Sec. 29: SENW,SW;
- Sec. 30: SWSE;
- Sec. 31: Lot 1-4;
- Sec. 31: E2W2,E2;
- Sec. 32: W2;

Delta County  
Colorado 2408.760 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-01 to protect highly erodible and/or saline soil areas:

T. 0140S., R 0910W., 6TH PM

- Sec. 29: SENW,SW;
- Sec. 30: SWSE;
- Sec. 31: Lot 1-4;
- Sec. 31: NE,E2W2,NESE,W2SE;
- Sec. 32: NWNW;

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

BLM; MDO: UBRA

**PARCEL ID: 6611 SERIAL #:**

T. 0150S., R 0910W., 6TH PM  
Sec. 6: Lot 1-7;  
Sec. 6: S2NE,SE,SE,SE;  
Sec. 7: Lot 1-4;  
Sec. 7: E2,E2W2;

Delta County  
Colorado 1294.560 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-01 to protect highly erodible and/or saline soil areas:

T. 0150S., R 0910W., 6TH PM  
Sec. 6: Lot 2-6;  
Sec. 6: SWNE,SE,SE,SE;

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

BLM; MDO: UBRA

**PARCEL ID: 6612 SERIAL #:**

T. 0150S., R 0910W., 6TH PM  
Sec. 26: E2W2,W2SW;  
Sec. 29: NW,N2SW,SWSW;  
Sec. 30: Lot 1-4;  
Sec. 30: E2W2,E2;  
Sec. 31: Lot 1;  
Sec. 31: N2NE,SE,SE,SE;

Delta County  
Colorado 1363.400 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

BLM; MDO: UBRA

**PARCEL ID: 6625 SERIAL #:**

T. 0130S., R 0920W., 6TH PM  
Sec. 31: Lot 5-20;  
Sec. 32: Lot 1-16;  
Sec. 33: Lot 3-10;  
Sec. 34: Lot 1-3,7,8;  
Sec. 35: Lot 1-9;

Delta County  
Colorado 2228.890 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0130S., R 0920W., 6TH PM  
Sec. 34: Lot 2,3,7,8;  
Sec. 35: Lot 1,2,5-9;

The following lands are subject to Exhibit UB-10 to protect coal mining:

T. 0130S., R 0920W., 6TH PM  
Sec. 31: Lot 6;  
Sec. 32: Lot 1-4,7,8;  
Sec. 33: Lot 3;

BLM; MDO: UBRA

**PARCEL ID: 6607 SERIAL #:**

T. 0140S., R 0920W., 6TH PM  
Sec. 3: NESE,SWNW,SWSW;  
Sec. 4: Lot 2-4;  
Sec. 4: S2N2,SW,N2SE,SWSE;  
Sec. 5: Lot 1-4;  
Sec. 5: S2N2,S2;  
Sec. 6: Lot 1-7;  
Sec. 6: N2SE,SESE;  
Sec. 6: SENW,S2NE,E2SW;

Delta County  
Colorado 1913.000 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0140S., R 0920W., 6TH PM  
Sec. 3: SWNW,SWSW;  
Sec. 4: N2SE,SWSE;  
Sec. 4: S2NE,SENE,SW;  
Sec. 5: S2SE;  
Sec. 6: Lot 6,7;  
Sec. 6: E2SW;  
Sec. 6: E2SE;

BLM; MDO: UBRA

**PARCEL ID: 6608 SERIAL #:**

T. 0140S., R 0920W., 6TH PM  
Sec. 7: E2NE,SENE,E2SW,W2SE;  
Sec. 8: N2,N2S2,SWSW,SWSE;  
Sec. 9: NWNE,NENW;  
Sec. 17: SWNW;  
Sec. 18: Lot 2;  
Sec. 18: E2NW;

Delta County  
Colorado 1078.040 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0140S., R 0920W., 6TH PM  
Sec. 7: E2NE,SENE,W2SE,E2SW;  
Sec. 8: N2,N2S2,SWSW,SWSE;  
Sec. 9: NWNE,NENW;  
Sec. 17: SWNW;  
Sec. 18: Lot 2;  
Sec. 18: E2NW;

BLM; MDO: UBRA

**PARCEL ID: 6610 SERIAL #:**

T. 0140S., R 0920W., 6TH PM  
Sec. 25: S2;  
Sec. 26: N2SW,SE;  
Sec. 28: W2NE,N2SE;  
Sec. 31: SESW,S2SE;  
Sec. 32: NWSW,SESE;  
Sec. 33: SWSW;  
Sec. 34: SWNE,N2NW,SENE;  
Sec. 34: NESW,SE;

Sec. 35: E2NE,S2;  
Sec. 36: ALL;

Delta County  
Colorado 2360.000 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-01 to protect highly erodible and/or saline soil areas:

T. 0140S., R 0920W., 6TH PM  
Sec. 36: SWNE,E2NE,SE;

The following lands are subject to Exhibit UB-03 to protect bald eagle winter concentration areas:

T. 0140S., R 0920W., 6TH PM  
Sec. 31: SWSE,SESW;  
Sec. 32: NWSW;

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0140S., R 0920W., 6TH PM  
Sec. 25: S2;  
Sec. 26: SE,N2SW;  
Sec. 28: W2NE,N2SE;  
Sec. 31: S2SE,SESW;  
Sec. 32: SESE,NWSW;  
Sec. 33: SWSW;  
Sec. 34: SE,NESW;  
Sec. 34: SWNE,NWNW,E2NW;  
Sec. 35: E2NE,S2;  
Sec. 36: ALL;

PVT/BLM;BLM; MDO: UBRA

**PARCEL ID: 6613 SERIAL #:**

T. 0150S., R 0920W., 6TH PM  
Sec. 15: S2NE, E2NW,S2;  
Sec. 22: NESW,N2SE;  
Sec. 22: NE,N2NW,SENW;  
Sec. 23: NENE,W2NW;  
Sec. 24: SWSW,SE;  
Sec. 24: S2NE,NW,N2SW;  
Sec. 25: N2NE,SENE,NWNW,NESE;

Delta County  
Colorado 1720.000 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0150S., R 0920W., 6TH PM  
Sec. 15: S2NE,SENE,S2;  
Sec. 22: NE,NWNW,E2NW;  
Sec. 22: N2SE,NESW;  
Sec. 23: NENE,W2NW;  
Sec. 24: SE,SWSW;  
Sec. 24: S2NE,NW,N2SW;  
Sec. 25: NWNE,E2NE,NWNW,NESE;

BLM; MDO: UBRA

**PARCEL ID: 6614 SERIAL #:**

T. 0150S., R 0920W., 6TH PM  
Sec. 4: Lot 4;  
Sec. 4: SWNW;  
Sec. 5: Lot 1,2;  
Sec. 5: SWNE,SENE;  
Sec. 6: Lot 1,2,5;  
Sec. 6: S2NE,SENE;  
Sec. 8: S2S2;  
Sec. 18: Lot 1;  
Sec. 18: NE,NENW,N2SE,SESE;  
Sec. 31: Lot 5,6;  
Sec. 32: S2SW;  
Sec. 34: SESW,SWSE;

Delta County  
Colorado 1232.05 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-01 to protect highly erodible and/or saline soil areas:

T. 0150S., R 0920W., 6TH PM  
Sec. 6: Lot 5;  
Sec. 6: SESE;  
Sec. 8: SWSW;  
Sec. 18: Lot 1;  
Sec. 18: NE,NENW,NWSE,E2SE;

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

BOR;BLM; MDO: UBRA

**PARCEL ID: 6615 SERIAL #:**

T. 0150S., R 0920W., 6TH PM

- Sec. 1: Lot 1-4;
- Sec. 1: S2N2,S2;
- Sec. 2: Lot 1-4;
- Sec. 2: S2N2,N2SW,SE;
- Sec. 3: Lot 5,6,8-11;
- Sec. 10: SWNE,N2SE;
- Sec. 11: NE,N2SW,SESW,W2SE;
- Sec. 12: NW,E2SE,SWSE;
- Sec. 14: NWNE;

Delta County

Colorado 2145.610 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-01 to protect highly erodible and/or saline soil areas:

T. 0150S., R 0920W., 6TH PM

- Sec. 1: Lot 1,2,3;
- Sec. 1: S2NE,E2SW,N2SE,SWSE;

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0150S., R 0920W., 6TH PM

- Sec. 1: Lot 1-4;
- Sec. 1: S2N2,S2;
- Sec. 2: Lot 1-4;
- Sec. 2: S2N2,N2SW,SE;
- Sec. 3: Lot 5,6,9,10;
- Sec. 10: SWNE,N2SE;
- Sec. 11: NE,NWSW,E2SW,W2SE;
- Sec. 12: NW,SWSE,E2SE;
- Sec. 14: NWNE;

BLM; MDO: UBRA

## ATTACHMENT B

### PROPOSED ACTION

Parcels Available for Lease with Deferred Portions  
February 14, 2013 - Colorado Competitive Oil & Gas Lease Sale

#### **PARCEL ID: 6622 SERIAL #:**

T. 0130S., R 0890W., 6TH PM  
Sec. 2: Lot 36;  
Sec. 5: Lot 15-18;  
Sec. 5: SW,NESE,W2SE,SESE;  
Sec. 6: Lot 17-22;  
Sec. 6: E2SW,SE;  
Sec. 8: NENE,N2NW,SWNW;  
Sec. 9: Lot 1-4,7,10;  
Sec. 9: E2NE,SWNE;  
Sec. 10: Lot 2,11-14;  
Sec. 11: Lot 3;

Gunnison County  
Colorado 1618.970 Acres

#### **DEFER THE FOLLOWING WITHDRAWN RECLAMATION LANDS TO PROTECT RECLAMATION FACILITIES.**

#### **PARCEL ID: 6622 SERIAL #:**

T. 0130S., R 0890W., 6TH PM  
Sec. 5: Lot 15;  
Sec. 5: SESE;  
Sec. 9: Lot 1-4,7,10;  
Sec. 9: E2NE,SWNE;

Gunnison County  
Colorado 383.820 Acres

## ATTACHMENT C

### PROPOSED ACTION

#### Parcels Available for Lease with Applied Stipulations February 14<sup>th</sup>, 2013 - Colorado Competitive Oil & Gas Lease Sale

The Colorado State Office is offering competitively 22 parcels containing 29506.998 acres of Uncompahgre Field Office Federal lands in the State of Colorado for oil and gas leasing. This notice provides:

THE FOLLOWING **ACQUIRED** LANDS ARE SUBJECT TO FILINGS IN THE MANNER SPECIFIED IN THE APPLICABLE PORTIONS OF THE REGULATIONS IN 43 CFR, SUBPART 3120.

#### **PARCEL ID: 6621 SERIAL #:**

T. 0150S., R 0920W., 6TH PM  
Sec. 15: W2NW;

U.S. Interest 100.00%

Delta County  
Colorado 80.000 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UFO-LN-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit LN-04 to protect Raptor Nests.

All lands are subject to Exhibit UFO-LN-06 to protect scenic byways, visual resources, and natural soundscapes

All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit LN-11 to protect Steep Slopes.

All lands are subject to Exhibit LN-13 to protect Saline / Selenium Soils.

All lands are subject to Exhibit LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0150S., R 0920W., 6TH PM  
Sec. 15: W2NW;

BLM; MDO: UBRA

THE FOLLOWING **PUBLIC DOMAIN** LANDS ARE SUBJECT TO FILINGS IN THE MANNER SPECIFIED IN THE APPLICABLE PORTIONS OF THE REGULATIONS IN 43 CFR, SUBPART 3120.

#### **PARCEL ID: 6619 SERIAL #:**

T. 0120S., R 0890W., 6TH PM  
Sec. 28: NWSWSE,E2SWSE;  
Sec. 28: SENW,SESE;

Sec. 33: E2SESE;  
Sec. 33: NENE,E2SENE,E2NESE,;  
T. 0130S., R 0890W., 6TH PM  
Sec. 3: Lot 5-12;

Gunnison County  
Colorado 456.320 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

All lands are subject to Exhibit LN-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit LN-04 to protect Raptor Nests.

All lands are subject to Exhibit LN-06 to protect scenic byways, visual resources, and natural soundscapes

All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit LN-11 to protect Steep Slopes.

All lands are subject to Exhibit LN-12 to protect Wild and Scenic Rivers.

All lands are subject to Exhibit LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit LN-16 to protect Aquatic Wildlife, Wetland and Riparian Zones.

All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

The following lands are subject to Exhibit UB-10 to protect coal mining:

T. 0130S., R 0890W., 6TH PM  
Sec. 3: Lot 5-12;

BLM; MDO: UBRA

**PARCEL ID: 6622 SERIAL #:**

T. 0130S., R 0890W., 6TH PM  
Sec. 2: Lot 36;  
Sec. 5: Lot 16-18;  
Sec. 5: SW,NESE,W2SE;  
Sec. 6: Lot 17-22;  
Sec. 6: E2SW,SE;  
Sec. 8: NENE,N2NW,SWNW;  
Sec. 10: Lot 2,11-14;  
Sec. 11: Lot 3;

Gunnison County  
Colorado 1235.150 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.  
All lands are subject to Exhibit UB-10 to protect coal mining.

All lands are subject to Exhibit LN-03 to limit impacts from motorized and mechanized use  
All lands are subject to Exhibit LN-04 to protect Raptor Nests.  
All lands are subject to Exhibit LN-06 to protect scenic byways, visual resources, and natural soundscapes  
All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.  
All lands are subject to Exhibit LN-11 to protect Steep Slopes.  
All lands are subject to Exhibit LN-15 to protect Big Game Crucial Winter Habitats.  
All lands are subject to Exhibit LN-16 to protect Aquatic Wildlife, Wetland and Riparian Zones.  
All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.  
All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.  
All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

The following lands are subject to Exhibit UB-03 to protect bald eagle winter concentration areas:

T. 0130S., R 0890W., 6TH PM  
Sec. 2: Lot 36;  
Sec. 5: S2SW,SWSE;  
Sec. 6: SESW,S2SE;  
Sec. 8: NENE,NENW,W2NW;  
Sec. 10: Lot 2, 11-14;  
Sec. 11: Lot 3;

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0130S., R 0890W., 6TH PM  
Sec. 2: Lot 36;  
Sec. 5: Lot 18;  
Sec. 5: NESE,W2SE,SW;  
Sec. 6: Lot 17-22;  
Sec. 6: E2SW, SE;  
Sec. 8: NENE,NENW,W2NW;  
Sec. 10: Lot 2,11;  
Sec. 11: Lot 3;

PVT/BLM;BLM; MDO: UBRA

**PARCEL ID: 6620 SERIAL #:**

T. 0130S., R 0890W., 6TH PM  
Sec. 4: Lot 19,23;  
Sec. 4: SESE;

Gunnison County  
Colorado 105.970 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

All lands are subject to Exhibit UB-10 to protect coal mining.

All lands are subject to Exhibit LN-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit LN-04 to protect Raptor Nests.

All lands are subject to Exhibit LN-06 to protect scenic byways, visual resources, and natural soundscapes

All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit LN-11 to protect Steep Slopes.

All lands are subject to Exhibit LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

BLM; MDO: UBRA

**PARCEL ID: 6618 SERIAL #:**

T. 0110S., R 0900W., 6TH PM

Sec. 2: Lot 1-5,7,8,11-14;

Gunnison County

Colorado 299.500 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit LN-04 to protect Raptor Nests.

All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit LN-11 to protect Steep Slopes.

All lands are subject to Exhibit LN-16 to protect Wildlife, Aquatic.

All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

PVT/BLM; MDO: UBRA

**PARCEL ID: 6623 SERIAL #:**

T. 0130S., R 0900W., 6TH PM

Sec. 7: Lot 3,4;

Sec. 7: E2SW,SWSE;

Sec. 31: Lot 5-7,10,12;

Gunnison County

Colorado 356.280 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit LN-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit LN-04 to protect Raptor Nests.

All lands are subject to Exhibit LN-06 to protect scenic byways, visual resources, and natural soundscapes

All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit LN-11 to protect Steep Slopes.

All lands are subject to Exhibit LN-13 to protect Saline / Selenium Soils.

All lands are subject to Exhibit LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.

All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

The following lands are subject to Exhibit UB-03 to protect bald eagle winter concentration areas:

T. 0130S., R 0900W., 6TH PM

Sec. 7: SWSE;

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0130S., R 0900W., 6TH PM

Sec. 7: SWSE;

Sec. 31: Lot 5-7,10,12;

The following lands are subject to Exhibit UB-10 to protect coal mining:

T. 0130S., R 0900W., 6TH PM

Sec. 7: Lot 3,4;

Sec. 7: E2SW,SWSE;

Sec. 31: Lot 6,7,12;

BLM; MDO: UBRA

**PARCEL ID: 6604 SERIAL #:**

T. 0140S., R 0900W., 6TH PM

Sec. 6: Lot 1,2,6,7;

Sec. 6: S2NE,E2SW;

Sec. 6: SE;

Sec. 6: EXCEL HES 104& HES 204;

Sec. 7: Lot 1-4;

Sec. 7: E2W2;

Sec. 7: E2;

Sec. 7: EXCEL HES 104 & 87;

Gunnison County

Colorado 830.668 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit LN-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit LN-04 to protect Raptor Nests.

All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit LN-11 to protect Steep Slopes.

All lands are subject to Exhibit LN-13 to protect Saline / Selenium Soils.

All lands are subject to Exhibit LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.

All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0140S., R 0900W., 6TH PM

Sec. 6: S2NE;

Sec. 7: E2;

The following lands are subject to Exhibit UB-10 to protect coal mining:

T. 0140S., R 0900W., 6TH PM

Sec. 6: Lot 1;

Sec. 6: SENE;

BLM; MDO: UBRA

**PARCEL ID: 6624 SERIAL #:**

T. 0130S., R 0910W., 6TH PM

Sec. 32: E2SE,SWSE;

Sec. 33: ALL;

Sec. 34: ALL;

Sec. 35: N2,SW,N2SE,SWSE;

Sec. 36: Lot 1-12;

Delta County

Colorado 2471.370 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit LN-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit LN-04 to protect Raptor Nests.

All lands are subject to Exhibit LN-06 to protect scenic byways, visual resources, and natural soundscapes

All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit LN-11 to protect Steep Slopes.

All lands are subject to Exhibit LN-13 to protect Saline / Selenium Soils.

All lands are subject to Exhibit LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

The following lands are subject to Exhibit UB-03 to protect bald eagle winter concentration areas:

T. 0130S., R 0910W., 6TH PM  
Sec. 32: NESE,SWSE;

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0130S., R 0910W., 6TH PM  
Sec. 32: SWSE,E2SE;  
Sec. 33: ALL;  
Sec. 34: S2NE,W2,SE;  
Sec. 35: S2N2,SW,NESE,W2SE;  
Sec. 36: Lot 1-3,5-12;

The following lands are subject to Exhibit UB-10 to protect coal mining:

T. 0130S., R 0910W., 6TH PM  
Sec. 34: NE,E2NW;  
Sec. 35: N2;  
Sec. 36: Lot 1-6;

BLM; MDO: UBRA

**PARCEL ID: 6616 SERIAL #:**

T. 0130S., R 0910W., 6TH PM  
Sec. 27: NENE,S2NE,E2SW,SE;  
Sec. 28: E2,E2SW,SWSW;

Delta County  
Colorado 800.000 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit LN-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit LN-04 to protect Raptor Nests.

All lands are subject to Exhibit LN-06 to protect scenic byways, visual resources, and natural soundscapes

All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit LN-11 to protect Steep Slopes.

All lands are subject to Exhibit LN-13 to protect Saline / Selenium Soils.

All lands are subject to Exhibit LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.

All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

The following lands are subject to Exhibit UB-03 to protect bald eagle winter concentration areas:

T. 0130S., R 0910W., 6TH PM  
Sec. 28: NE,NESW,SWSW;

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0130S., R 0910W., 6TH PM  
Sec. 27: SWNE,E2NE,E2SW,NWSE;  
Sec. 28: ALL;

The following lands are subject to Exhibit UB-10 to protect coal mining:

T. 0130S., R 0910W., 6TH PM  
Sec. 27: ALL;

BLM; MDO: UBRA

**PARCEL ID: 6617 SERIAL #:**

T. 0130S., R 0910W., 6TH PM  
Sec. 13: Lot 1,2;  
Sec. 13: NE;  
Sec. 16: Lot 1-5, 7-11;  
Sec. 19: Lot 1-4;  
Sec. 19: E2,SENW,E2SW;  
Sec. 20: Lot 1,4-6;  
Sec. 21: Lot 1-7;  
Sec. 22: Lot 2,3,10;  
Sec. 29: Lot 1;  
Sec. 30: Lot 5-11;

Delta County  
Colorado 2122.970 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit LN-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit LN-04 to protect Raptor Nests.

All lands are subject to Exhibit LN-06 to protect scenic byways, visual resources, and natural soundscapes

All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit LN-11 to protect Steep Slopes.

All lands are subject to Exhibit LN-13 to protect Saline / Selenium Soils.

All lands are subject to Exhibit LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.

All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

The following lands are subject to Exhibit UB-03 to protect bald eagle winter concentration areas:

T. 0130S., R 0910W., 6TH PM  
Sec. 13: Lot ALL;  
Sec. 21: Lot 1,5,6,7;  
Sec. 22: Lot 2,3;

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0130S., R 0910W., 6TH PM  
Sec. 13: Lot 1,2;  
Sec. 13: NE;  
Sec. 16: Lot 3-5,7-11;  
Sec. 19: Lot 2-4;  
Sec. 19: SWNE,E2NE,SENE,E2SW;  
Sec. 19: SE;  
Sec. 20: Lot 1,4-6;  
Sec. 21: Lot 1-7;  
Sec. 22: Lot 2,3,10;  
Sec. 29: Lot 1;  
Sec. 30: Lot 5-11;

The following lands are subject to Exhibit UB-10 to protect coal mining:

T. 0130S., R 0910W., 6TH PM  
Sec. 13: Lot 1,2;  
Sec. 13: NE;  
Sec. 16: Lot 1-5,7-11;  
Sec. 19: Lot 1-3;  
Sec. 19: NE,SENE;  
Sec. 20: Lot 1;  
Sec. 21: Lot 2;

BLM; MDO: UBRA

**PARCEL ID: 6605 SERIAL #:**

T. 0140S., R 0910W., 6TH PM  
Sec. 3: Lot 1-4;  
Sec. 3: S2NW,S2S2;  
Sec. 4: Lot 1-4;  
Sec. 5: Lot 1;  
Sec. 9: E2NE;  
Sec. 10: N2;

Delta County  
Colorado 1004.360 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

All lands are subject to Exhibit LN-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit LN-04 to protect Raptor Nests.

All lands are subject to Exhibit LN-06 to protect scenic byways, visual resources, and natural soundscapes

All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit LN-11 to protect Steep Slopes.

All lands are subject to Exhibit LN-13 to protect Saline / Selenium Soils.

All lands are subject to Exhibit LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

BLM; MDO: UBRA

**PARCEL ID: 6606 SERIAL #:**

T. 0140S., R 0910W., 6TH PM

Sec. 1: Lot 3;

Sec. 1: E2E2SE;

Sec. 1: E2SE IN DELTA COUNTY;

Sec. 1: SWNE,S2NW,SW,W2SE;

Sec. 2: S2NE,N2SW,SE;

Sec. 11: E2,S2NW,SW;

Sec. 12: ALL IN DELTA COUNTY;

Sec. 12: E2E2E2;

Delta County

Gunnison County

Colorado 2000.100 Acres

All lands are subject to Exhibit LN-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit LN-04 to protect Raptor Nests.

All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit LN-11 to protect Steep Slopes.

All lands are subject to Exhibit LN-13 to protect Saline / Selenium Soils.

All lands are subject to Exhibit LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.

All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0140S., R 0910W., 6TH PM

Sec. 1: Lot 3;

Sec. 2: S2NE,N2SW,W2SE;

Sec. 11: S2NW,SW,W2E2,SESE;

BLM; MDO: UBRA

**PARCEL ID: 6609 SERIAL #:**

T. 0140S., R 0910W., 6TH PM  
Sec. 15: SESW,SE;  
Sec. 21: N2,W2SW;  
Sec. 22: N2,N2SW,SESW,SE;  
Sec. 29: SENW,SW;  
Sec. 30: SWSE;  
Sec. 31: Lot 1-4;  
Sec. 31: E2W2,E2;  
Sec. 32: W2;

Delta County  
Colorado 2408.760 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit LN-03 to limit impacts from motorized and mechanized use  
All lands are subject to Exhibit LN-04 to protect Raptor Nests.  
All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.  
All lands are subject to Exhibit LN-11 to protect Steep Slopes.  
All lands are subject to Exhibit LN-13 to protect Saline / Selenium Soils.  
All lands are subject to Exhibit LN-15 to protect Big Game Crucial Winter Habitats.  
All lands are subject to Exhibit LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.  
All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.  
All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.  
All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

The following lands are subject to Exhibit UB-01 to protect highly erodible and/or saline soil areas:

T. 0140S., R 0910W., 6TH PM  
Sec. 29: SENW,SW;  
Sec. 30: SWSE;  
Sec. 31: Lot 1-4;  
Sec. 31: NE,E2W2,NESE,W2SE;  
Sec. 32: NWNW;

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

BLM; MDO: UBRA

**PARCEL ID: 6611 SERIAL #:**

T. 0150S., R 0910W., 6TH PM  
Sec. 6: Lot 1-7;  
Sec. 6: S2NE,SENW,E2SW,SE;

Sec. 7: Lot 1-4;  
Sec. 7: E2,E2W2;

Delta County  
Colorado 1294.560 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

All lands are subject to Exhibit LN-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit LN-04 to protect Raptor Nests.

All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit LN-11 to protect Steep Slopes.

All lands are subject to Exhibit LN-13 to protect Saline / Selenium Soils.

All lands are subject to Exhibit LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit LN-16 to protect Aquatic Wildlife.

All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

The following lands are subject to Exhibit UB-01 to protect highly erodible and/or saline soil areas:

T. 0150S., R 0910W., 6TH PM  
Sec. 6: Lot 2-6;  
Sec. 6: SWNE,SENE,NENW;

BLM; MDO: UBRA

**PARCEL ID: 6612 SERIAL #:**

T. 0150S., R 0910W., 6TH PM  
Sec. 26: E2W2,W2SW;  
Sec. 29: NW,N2SW,SWSW;  
Sec. 30: Lot 1-4;  
Sec. 30: E2W2,E2;  
Sec. 31: Lot 1;  
Sec. 31: N2NE,SENE,NENW;

Delta County  
Colorado 1363.400 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

All lands are subject to Exhibit LN-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit LN-04 to protect Raptor Nests.  
All lands are subject to Exhibit LN-06 to protect scenic byways, visual resources, and natural soundscapes  
All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.  
All lands are subject to Exhibit LN-11 to protect Steep Slopes.  
All lands are subject to Exhibit LN-13 to protect Saline / Selenium Soils.  
All lands are subject to Exhibit LN-15 to protect Big Game Crucial Winter Habitats.  
All lands are subject to Exhibit LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.  
All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.  
All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.  
All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

BLM; MDO: UBRA

**PARCEL ID: 6625 SERIAL #:**

T. 0130S., R 0920W., 6TH PM  
Sec. 31: Lot 5-20;  
Sec. 32: Lot 1-16;  
Sec. 33: Lot 3-10;  
Sec. 34: Lot 1-3,7,8;  
Sec. 35: Lot 1-9;

Delta County  
Colorado 2228.890 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit LN-03 to limit impacts from motorized and mechanized use  
All lands are subject to Exhibit LN-04 to protect Raptor Nests.  
All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.  
All lands are subject to Exhibit LN-11 to protect Steep Slopes.  
All lands are subject to Exhibit LN-13 to protect Saline / Selenium Soils.  
All lands are subject to Exhibit LN-15 to protect Big Game Crucial Winter Habitats.  
All lands are subject to Exhibit LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.  
All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.  
All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.  
All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0130S., R 0920W., 6TH PM  
Sec. 34: Lot 2,3,7,8;  
Sec. 35: Lot 1,2,5-9;

The following lands are subject to Exhibit UB-10 to protect coal mining:

T. 0130S., R 0920W., 6TH PM  
Sec. 31: Lot 6;  
Sec. 32: Lot 1-4,7,8;

Sec. 33: Lot 3;

BLM; MDO: UBRA

**PARCEL ID: 6607 SERIAL #:**

T. 0140S., R 0920W., 6TH PM  
Sec. 3: NESE,SWNW,SWSW;  
Sec. 4: Lot 2-4;  
Sec. 4: S2N2,SW,N2SE,SWSE;  
Sec. 5: Lot 1-4;  
Sec. 5: S2N2,S2;  
Sec. 6: Lot 1-7;  
Sec. 6: N2SE,SESE;  
Sec. 6: SENW,S2NE,E2SW;

Delta County  
Colorado 1913.000 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit LN-03 to limit impacts from motorized and mechanized use  
All lands are subject to Exhibit LN-04 to protect Raptor Nests.  
All lands are subject to Exhibit LN-06 to protect scenic byways, visual resources, and natural soundscapes  
All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.  
All lands are subject to Exhibit LN-11 to protect Steep Slopes.  
All lands are subject to Exhibit LN-13 to protect Saline / Selenium Soils.  
All lands are subject to Exhibit LN-15 to protect Big Game Crucial Winter Habitats.  
All lands are subject to Exhibit LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.  
All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.  
All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.  
All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0140S., R 0920W., 6TH PM  
Sec. 3: SWNW,SWSW;  
Sec. 4: N2SE,SWSE;  
Sec. 4: S2NE,SENW,SW;  
Sec. 5: S2SE;  
Sec. 6: Lot 6,7;  
Sec. 6: E2SW;  
Sec. 6: E2SE;

BLM; MDO: UBRA

**PARCEL ID: 6608 SERIAL #:**

T. 0140S., R 0920W., 6TH PM  
Sec. 7: E2NE,SENW,E2SW,W2SE;  
Sec. 8: N2,N2S2,SWSW,SWSE;  
Sec. 9: NWNE,NENW;  
Sec. 17: SWNW;  
Sec. 18: Lot 2;  
Sec. 18: E2NW;

Delta County  
Colorado 1078.040 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit LN-03 to limit impacts from motorized and mechanized use  
All lands are subject to Exhibit LN-04 to protect Raptor Nests.  
All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.  
All lands are subject to Exhibit LN-11 to protect Steep Slopes.  
All lands are subject to Exhibit LN-13 to protect Saline / Selenium Soils.  
All lands are subject to Exhibit LN-15 to protect Big Game Crucial Winter Habitats.  
All lands are subject to Exhibit LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.  
All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.  
All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.  
All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0140S., R 0920W., 6TH PM  
Sec. 7: E2NE,SENW,W2SE,E2SW;  
Sec. 8: N2,N2S2,SWSW,SWSE;  
Sec. 9: NWNE,NENW;  
Sec. 17: SWNW;  
Sec. 18: Lot 2;  
Sec. 18: E2NW;

BLM; MDO: UBRA

**PARCEL ID: 6610 SERIAL #:**

T. 0140S., R 0920W., 6TH PM  
Sec. 25: S2;  
Sec. 26: N2SW,SE;  
Sec. 28: W2NE,N2SE;  
Sec. 31: SESW,S2SE;  
Sec. 32: NWSW,SESE;  
Sec. 33: SWSW;  
Sec. 34: SWNE,N2NW,SENW;  
Sec. 34: NESW,SE;  
Sec. 35: E2NE,S2;

Sec. 36: ALL;

Delta County

Colorado 2360.000 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit LN-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit LN-04 to protect Raptor Nests.

All lands are subject to Exhibit LN-06 to protect scenic byways, visual resources, and natural soundscapes

All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit LN-11 to protect Steep Slopes.

All lands are subject to Exhibit LN-13 to protect Saline / Selenium Soils.

All lands are subject to Exhibit LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

The following lands are subject to Exhibit UB-01 to protect highly erodible and/or saline soil areas:

T. 0140S., R 0920W., 6TH PM

Sec. 36: SWNE,E2NE,SE;

The following lands are subject to Exhibit UB-03 to protect bald eagle winter concentration areas:

T. 0140S., R 0920W., 6TH PM

Sec. 31: SWSE,SESW;

Sec. 32: NWSW;

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0140S., R 0920W., 6TH PM

Sec. 25: S2;

Sec. 26: SE,N2SW;

Sec. 28: W2NE,N2SE;

Sec. 31: S2SE,SESW;

Sec. 32: SESE,NWSW;

Sec. 33: SWSW;

Sec. 34: SE,NESW;

Sec. 34: SWNE,NWNW,E2NW;

Sec. 35: E2NE,S2;

Sec. 36: ALL;

The following lands are subject to Exhibit LN-14 to protect Bald Eagle Winter Roost Sites:

T. 0140S., R0920W., 6<sup>TH</sup> PM

Sec. 28: W2NE, N2SE

PVT/BLM;BLM; MDO: UBRA

**PARCEL ID: 6613 SERIAL #:**

T. 0150S., R 0920W., 6TH PM

- Sec. 15: S2NE, E2NW,S2;
- Sec. 22: NESW,N2SE;
- Sec. 22: NE,N2NW,SENW;
- Sec. 23: NENE,W2NW;
- Sec. 24: SWSW,SE;
- Sec. 24: S2NE,NW,N2SW;
- Sec. 25: N2NE,SENE,NWNW,NESE;

Delta County

Colorado 1720.000 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UFO-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit LN-04 to protect Raptor Nests.

All lands are subject to Exhibit UFO-06 to protect scenic byways, visual resources, and natural soundscapes

All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit LN-11 to protect Steep Slopes.

All lands are subject to Exhibit LN-13 to protect Saline / Selenium Soils.

All lands are subject to Exhibit LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones

All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0150S., R 0920W., 6TH PM

- Sec. 15: S2NE,SENW,S2;
- Sec. 22: NE,NWNW,E2NW;
- Sec. 22: N2SE,NESW;
- Sec. 23: NENE,W2NW;
- Sec. 24: SE,SWSW;
- Sec. 24: S2NE,NW,N2SW;
- Sec. 25: NWNE,E2NE,NWNW,NESE;

BLM; MDO: UBRA

**PARCEL ID: 6614 SERIAL #:**

T. 0150S., R 0920W., 6TH PM

- Sec. 4: Lot 4;
- Sec. 4: SWNW;
- Sec. 5: Lot 1,2;
- Sec. 5: SWNE,SENW;
- Sec. 6: Lot 1,2,5;

Sec. 6: S2NE,SENW;  
Sec. 8: S2S2;  
Sec. 18: Lot 1;  
Sec. 18: NE,NENW,N2SE,SESE;  
Sec. 31: Lot 5,6;  
Sec. 32: S2SW;  
Sec. 34: SESW,SWSE;

Delta County  
Colorado 1232.05 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

All lands are subject to Exhibit LN-03 to limit impacts from motorized and mechanized use  
All lands are subject to Exhibit LN-04 to protect Raptor Nests.  
All lands are subject to Exhibit LN-06 to protect scenic byways, visual resources, and natural soundscapes  
All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.  
All lands are subject to Exhibit LN-11 to protect Steep Slopes.  
All lands are subject to Exhibit LN-13 to protect Saline / Selenium Soils.  
All lands are subject to Exhibit LN-15 to protect Big Game Crucial Winter Habitats.  
All lands are subject to Exhibit LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zone.  
All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.  
All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.  
All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

The following lands are subject to Exhibit UB-01 to protect highly erodible and/or saline soil areas:

T. 0150S., R 0920W., 6TH PM  
Sec. 6: Lot 5;  
Sec. 6: SENW;  
Sec. 8: SWSW;  
Sec. 18: Lot 1;  
Sec. 18: NE,NENW,NWSE,E2SE;

BOR;BLM; MDO: UBRA

**PARCEL ID: 6615 SERIAL #:**

T. 0150S., R 0920W., 6TH PM  
Sec. 1: Lot 1-4;  
Sec. 1: S2N2,S2;  
Sec. 2: Lot 1-4;  
Sec. 2: S2N2,N2SW,SE;  
Sec. 3: Lot 5,6,8-11;  
Sec. 10: SWNE,N2SE;  
Sec. 11: NE,N2SW,SESW,W2SE;  
Sec. 12: NW,E2SE,SWSE;  
Sec. 14: NWNE;

Delta County  
Colorado 2145.610 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit LN-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit LN-04 to protect Raptor Nests.

All lands are subject to Exhibit LN-06 to protect scenic byways, visual resources, and natural soundscapes

All lands are subject to Exhibit LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit LN-11 to protect Steep Slopes.

All lands are subject to Exhibit LN-13 to protect Saline / Selenium Soils.

All lands are subject to Exhibit LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.

All lands are subject to Exhibit LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit LN-21 to protect BLM Authorized Facilities.

The following lands are subject to Exhibit UB-01 to protect highly erodible and/or saline soil areas:

T. 0150S., R 0920W., 6TH PM

Sec. 1: Lot 1,2,3;

Sec. 1: S2NE,E2SW,N2SE,SWSE;

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0150S., R 0920W., 6TH PM

Sec. 1: Lot 1-4;

Sec. 1: S2N2,S2;

Sec. 2: Lot 1-4;

Sec. 2: S2N2,N2SW,SE;

Sec. 3: Lot 5,6,9,10;

Sec. 10: SWNE,N2SE;

Sec. 11: NE,NWSW,E2SW,W2SE;

Sec. 12: NW,SWSE,E2SE;

Sec. 14: NWNE;

BLM; MDO: UBRA

FIGURE 7: General Area Map – BLM Preferred Alternative

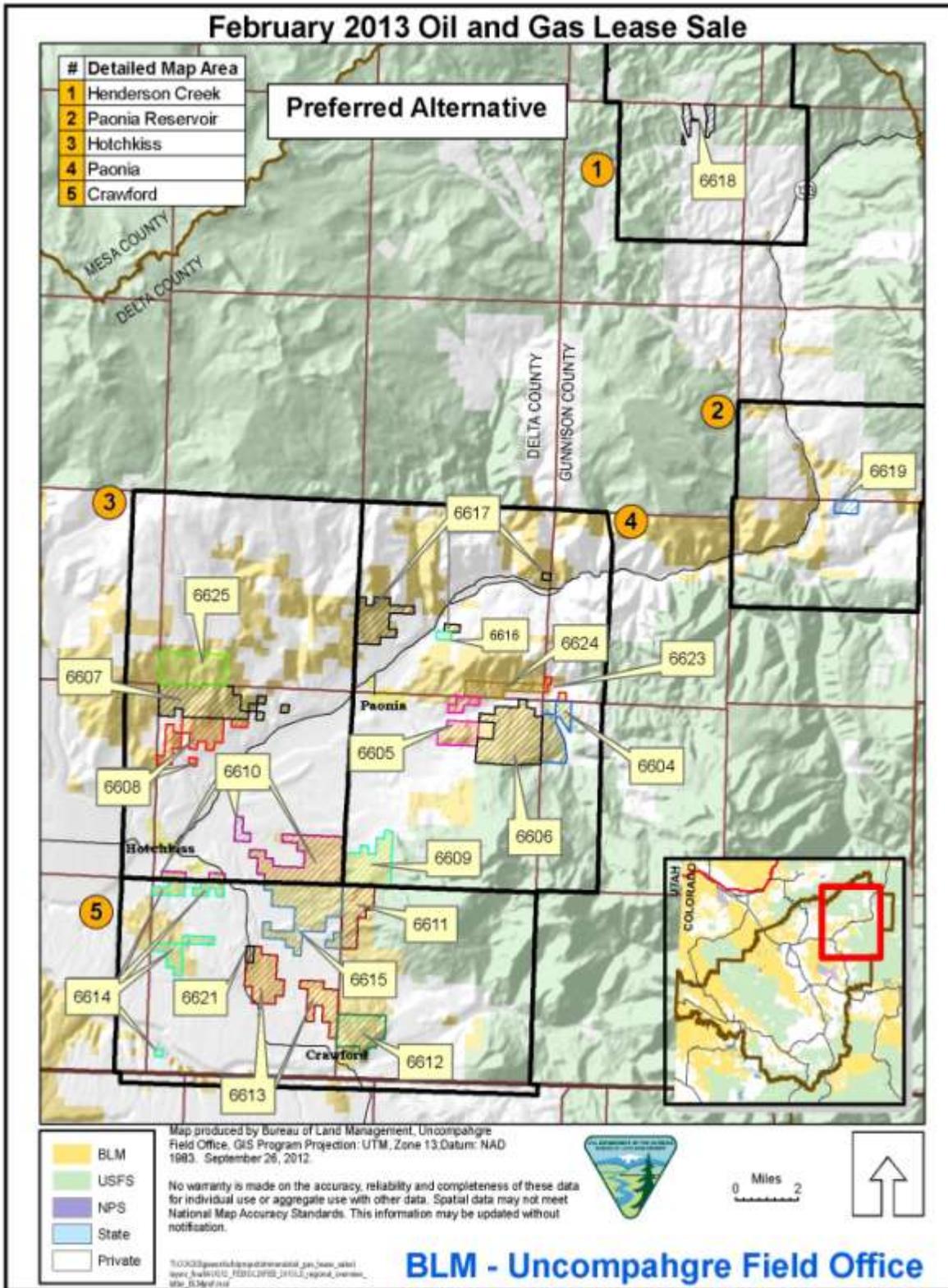


Figure 8 BLM Preferred Alternative: Henderson Creek Area Map

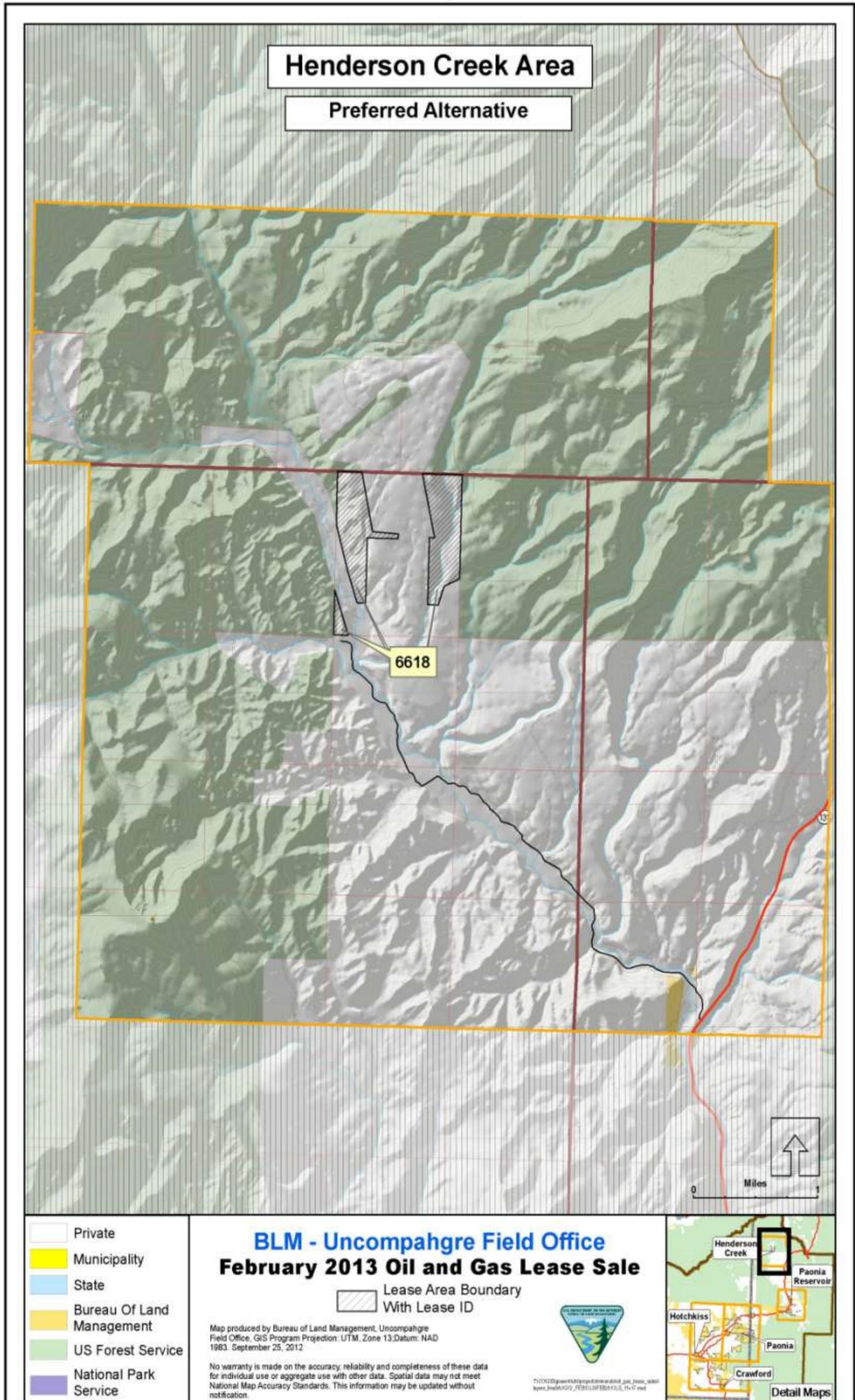


Figure 9 BLM Preferred Alternative: Paonia Reservoir Map

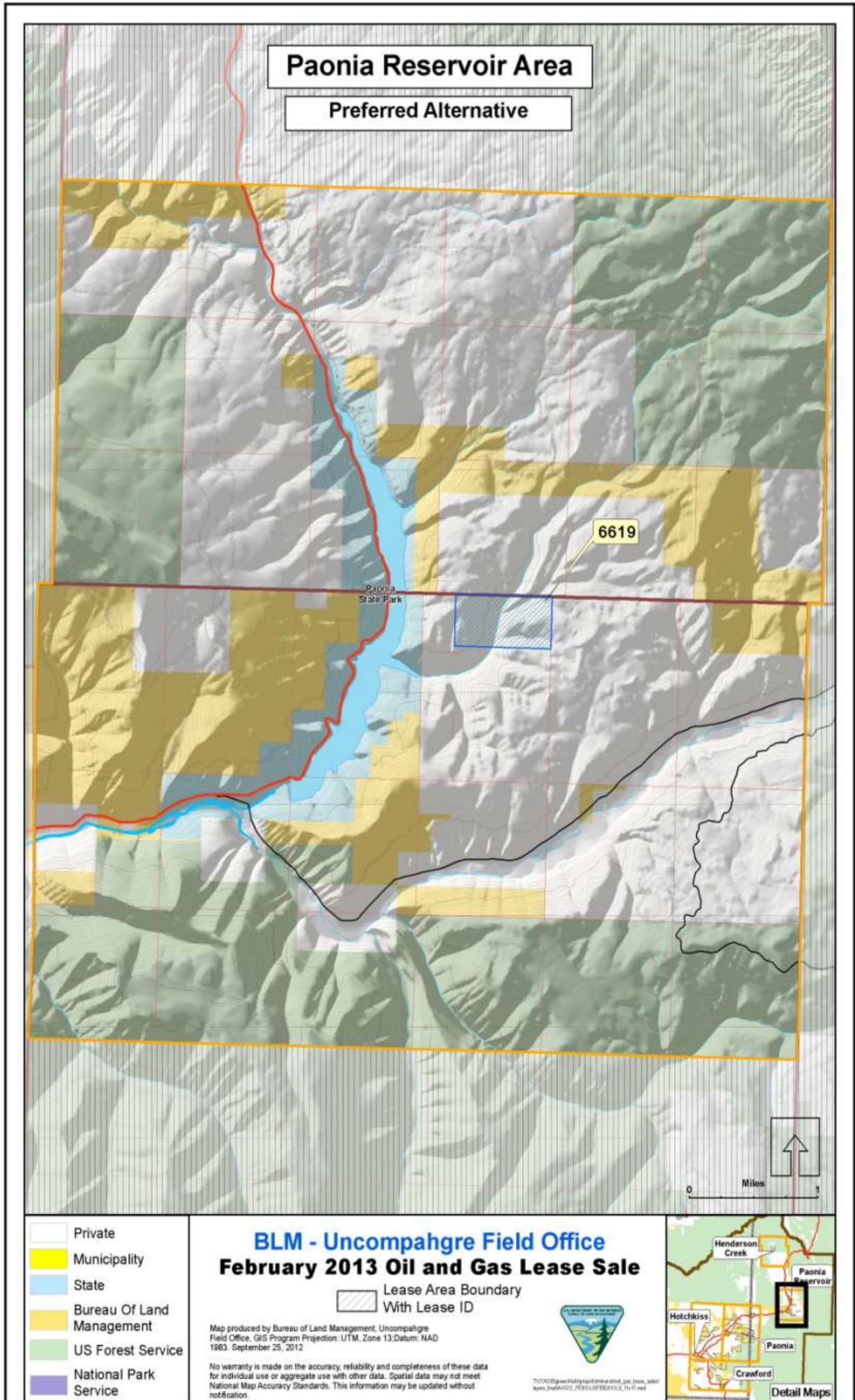


Figure 10 BLM Preferred Alternative: Hotchkiss Area Map

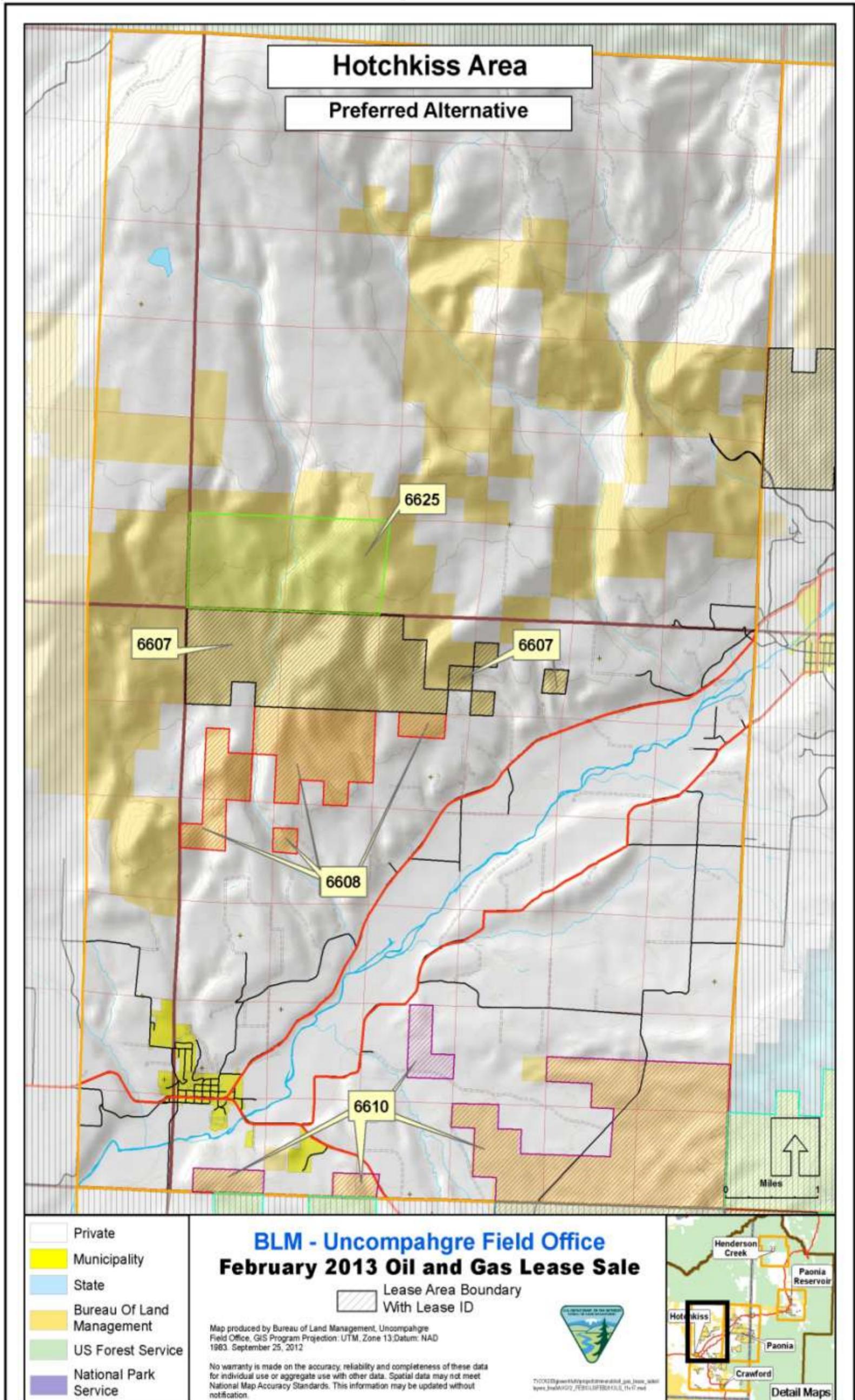


Figure 11 BLM Preferred Alternative: Paonia Area Map

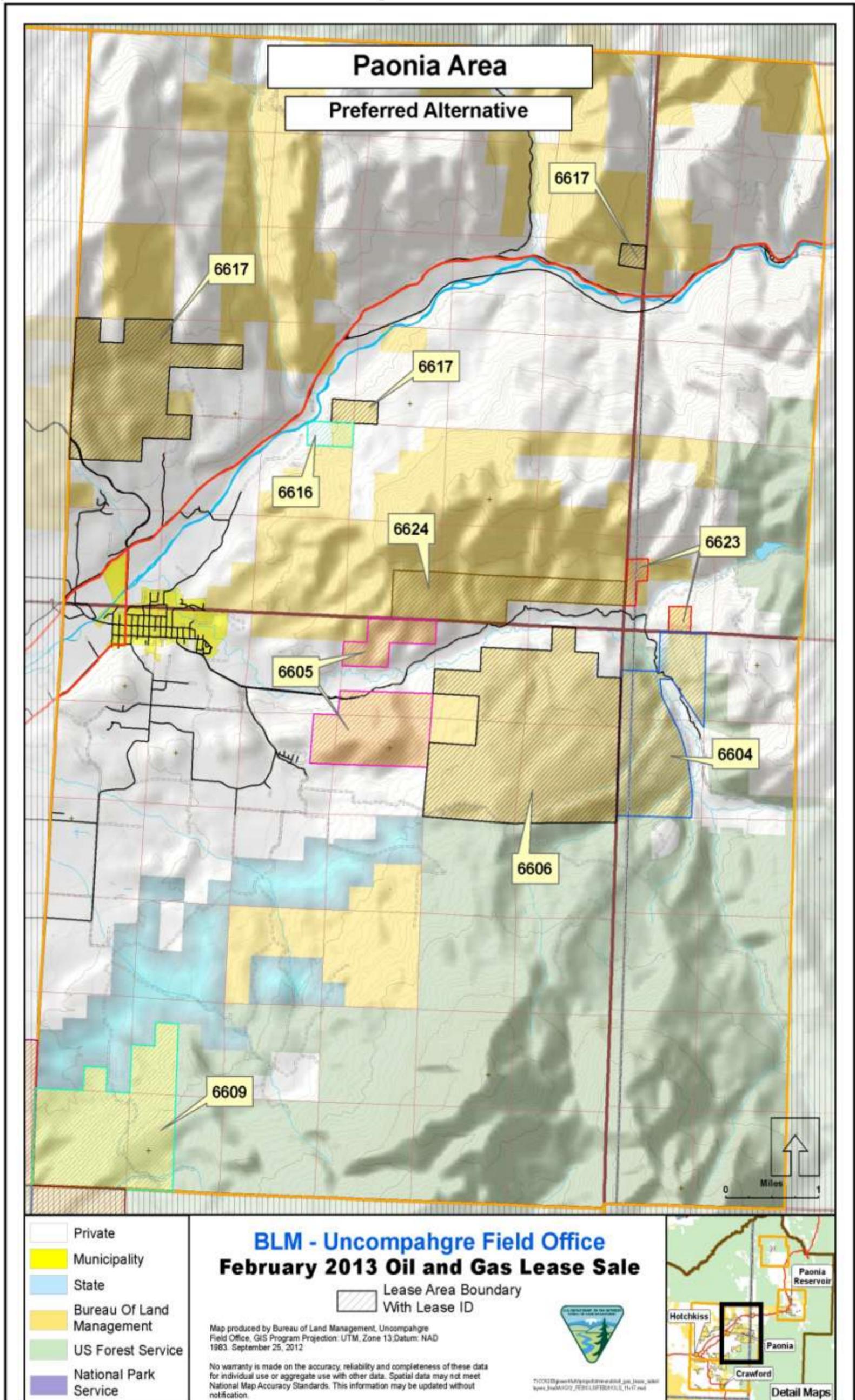
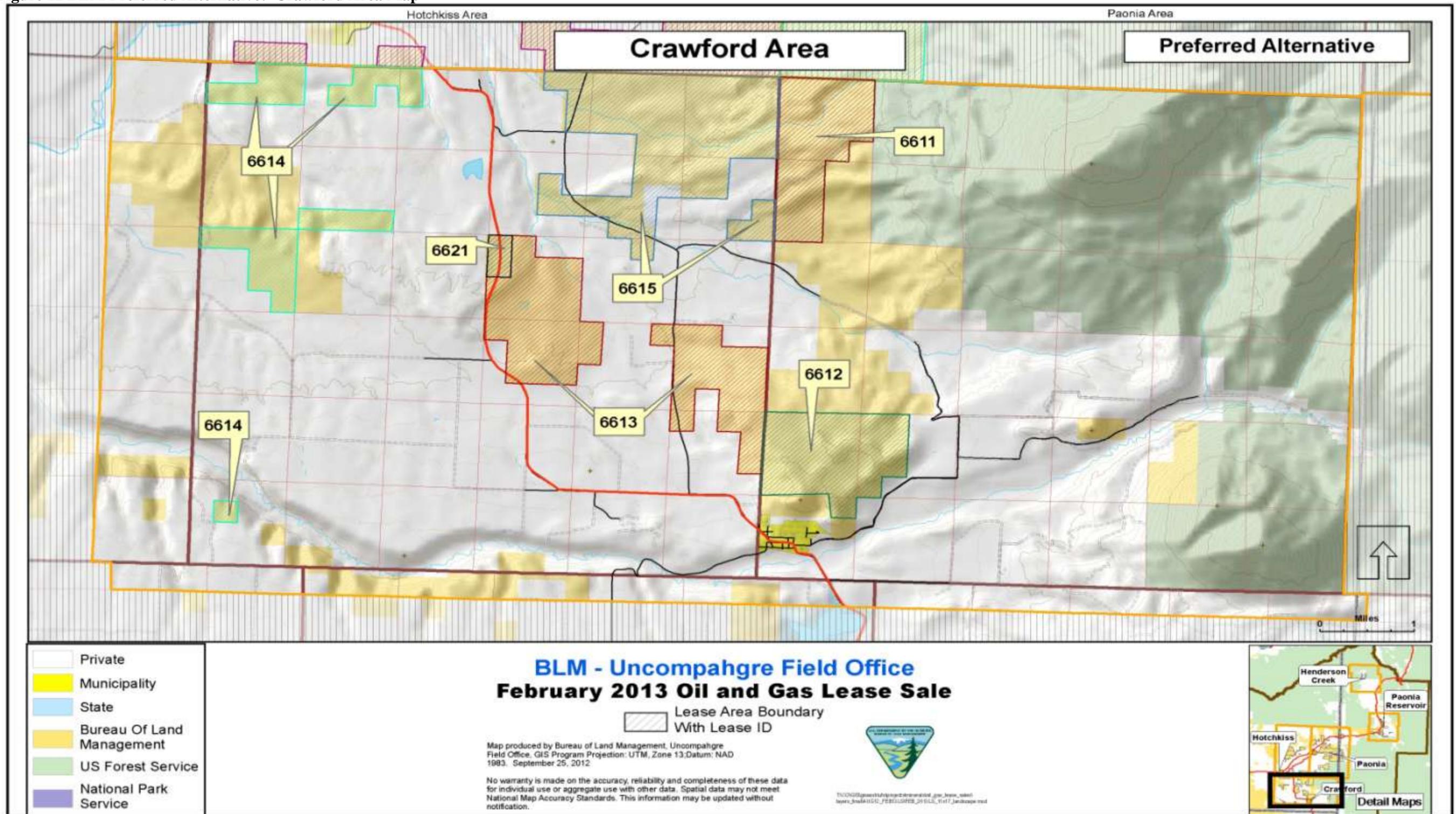


Figure 12 BLM Preferred Alternative: Crawford Area Map



**ATTACHMENT D**  
**BLM PREFERRED ALTERNATIVE**

Parcels Available for Lease with Deferred Portions. February 14, 2013 - Colorado Competitive Oil & Gas Lease Sale

**PARCEL ID: 6619 SERIAL #:**

T. 0120S., R 0890W., 6TH PM  
Sec. 28: NWSWSE,E2SWSE;  
Sec. 28: SENW,SESE;  
Sec. 33: E2SESE;  
Sec. 33: NENE,E2SENE,E2NESE;  
T. 0130S., R 0890W., 6TH PM  
Sec. 3: Lot 5-12;

Gunnison County  
Colorado 456.320 Acres

**DEFER THE FOLLOWING LANDS WITH SLOPES GREATER THAN 40%:**

T. 0120S., R 0890W., 6TH PM  
Sec. 28: NWSWSE,E2SWSE,SENE,SESE;  
Sec. 33: E2SESE, NENE,E2SENE,E2NESE;

**DEFER THE FOLLOWING LANDS WHICH ARE LOCATED WITHIN 0.5 MILE OF SCENIC BYWAY.**

T. 0120S., R 0890W., 6TH PM  
Sec. 28: NWSWSE,E2SWSE,SENE,SESE;  
Sec. 33: E2SESE, NENE,E2SENE,E2NESE;  
T. 0130S., R 0890W., 6TH PM  
Sec. 3: LotS 8,9;

Gunnison County  
Colorado 271.430 Acres

**PARCEL ID: 6622 SERIAL #:**

T. 0130S., R 0890W., 6TH PM  
Sec. 2: Lot 36;  
Sec. 5: Lot 15-18;  
Sec. 5: SW,NESE,W2SE,SESE;  
Sec. 6: Lot 17-22;  
Sec. 6: E2SW,SE;  
Sec. 8: NENE,N2NW,SWNW;  
Sec. 9: Lot 1-4,7,10;  
Sec. 9: E2NE,SWNE;  
Sec. 10: Lot 2,11-14;  
Sec. 11: Lot 3;

Gunnison County  
Colorado 1618.970 Acres

**DEFER THE FOLLOWING WITHDRAWN RECLAMATION LANDS TO PROTECT RECLAMATION FACILITIES.**

T. 0130S., R 0890W., 6TH PM  
Sec. 5: Lot 15;  
Sec. 5: SESE;  
Sec. 9: Lot 1-4,7,10;  
Sec. 9: E2NE,SWNE;

**DEFER THE FOLLOWING LANDS LOCATED WITHIN DELINEATED PUBLIC WATER SUPPLY AREAS**

T. 0130S., R 0890W., 6TH PM  
Sec. 5: Lot 15-18;  
Sec. 5: SW,NESE,W2SE,SESE;  
Sec. 6: Lot 19,20;  
Sec. 6: E2SW,SE;  
Sec. 8: NENE,N2NW,SWNW;  
Sec. 9: Lot 1-4,7,10;  
Sec. 9: E2NE,SWNE;  
Sec. 10: Lot 2,11;

**DEFER THE FOLLOWING LANDS WITH SLOPES GREATER THAN 40%:**

T. 0130S., R 0890W., 6TH PM  
Sec. 2: Lot 36;  
Sec. 5: Lot 15;  
Sec. 5: SW,NESE,SWSE,SESE;  
Sec. 6: Lot 17-19,21,22;  
Sec. 6: E2SW,SE;  
Sec. 8: NENE,N2NW,SWNW;  
Sec. 9: Lot 1-4,7,10;  
Sec. 9: E2NE,SWNE;  
Sec. 10: Lot 2,11-14;  
Sec. 11: Lot 3;

**DEFER THE FOLLOWING LANDS WHICH ARE LOCATED WITHIN 0.5 MILE OF SCENIC BYWAY.**

T. 0130S., R 0890W., 6TH PM  
Sec. 5: SW,NESE,SWSE,SESE;  
Sec. 6: SESE;  
Sec. 8: NENE,N2NW,SWNW;  
Sec. 9: Lot 1-4;

Gunnison County  
Colorado 1618.970 Acres

**PARCEL ID: 6620 SERIAL #:**

T. 0130S., R 0890W., 6TH PM  
Sec. 4: Lot 19,23;  
Sec. 4: SESE;

Gunnison County  
Colorado 105.970 Acres

**DEFER THE FOLLOWING LANDS LOCATED WITHIN DELINEATED PUBLIC WATER SUPPLY AREAS**

T. 0130S., R 0890W., 6TH PM  
Sec. 4: Lot 19,23;  
Sec. 4: SESE;

Gunnison County  
Colorado 105.970 Acres

**DEFER THE FOLLOWING LANDS WITH SLOPES GREATER THAN 40%:**

T. 0130S., R 0890W., 6TH PM  
Sec. 4: Lot 19,23;  
Sec. 4: SESE;

Gunnison County  
Colorado 105.970 Acres

**DEFER THE FOLLOWING LANDS WHICH ARE LOCATED WITHIN 0.5 MILE OF SCENIC BYWAY.**

T. 0130S., R 0890W., 6TH PM  
Sec. 4: Lot 19,23;  
Sec. 4: SESE;

Gunnison County  
Colorado 105.970 Acres

**PARCEL ID: 6623 SERIAL #:**

T. 0130S., R 0900W., 6TH PM  
Sec. 7: Lot 3,4;  
Sec. 7: E2SW,SWSE;  
Sec. 31: Lot 5-7,10,12;

Gunnison County  
Colorado 356.280 Acres

**DEFER THE FOLLOWING LANDS WITH SLOPES GREATER THAN 40%:**

T. 0130S., R 0900W., 6TH PM  
Sec. 7: Lot 3,4;  
Sec. 7: E2SW,SWSE;  
Sec. 31: Lot 6,7;

Gunnison County  
Colorado 262.450 Acres

**PARCEL ID: 6624 SERIAL #:**

T. 0130S., R 0910W., 6TH PM  
Sec. 32: E2SE,SWSE;  
Sec. 33: ALL;  
Sec. 34: ALL;  
Sec. 35: N2,SW,N2SE,SWSE;  
Sec. 36: Lot 1-12;

Delta County  
Colorado 2471.370 Acres

**DEFER THE FOLLOWING LANDS WITH SLOPES GREATER THAN 40%:**

T. 0130S., R 0910W., 6TH PM  
Sec. 34: N2;  
Sec. 35: N2;  
Sec. 36: Lot 1-8;

**DEFER THE FOLLOWING LANDS WHICH ARE LOCATED IN THE PROPOSED JUMBO SPECIAL RECREATION MANAGMENT AREA**

T. 0130S., R 0910W., 6TH PM  
Sec. 32: E2SE,SWSE;  
Sec. 33: ALL;  
Sec. 34: SW,;

Delta County  
Colorado 1869.540 Acres

**PARCEL ID: 6616 SERIAL #:**

T. 0130S., R 0910W., 6TH PM  
Sec. 27: NENE,S2NE,E2SW,SE;  
Sec. 28: E2,E2SW,SWSW;

Delta County  
Colorado 800.000 Acres

**DEFER THE FOLLOWING LANDS WITH SLOPES GREATER THAN 40%:**

T. 0130S., R 0910W., 6TH PM  
Sec. 27: NENE,S2NE,E2SW,SE;

**DEFER THE FOLLOWING LANDS WHICH ARE LOCATED IN THE PROPOSED JUMBO SPECIAL RECREATION MANAGMENT AREA**

T. 0130S., R 0910W., 6TH PM  
Sec. 28: SE,S2NE,E2SW,SWSW;

Delta County  
Colorado 720.000 Acres

**PARCEL ID: 6617 SERIAL #:**

T. 0130S., R 0910W., 6TH PM  
Sec. 13: Lot 1,2;  
Sec. 13: NE;  
Sec. 16: Lot 1-5, 7-11;  
Sec. 19: Lot 1-4;  
Sec. 19: E2,SENW,E2SW;  
Sec. 20: Lot 1,4-6;  
Sec. 21: Lot 1-7;  
Sec. 22: Lot 2,3,10;  
Sec. 29: Lot 1;  
Sec. 30: Lot 5-11;

Delta County  
Colorado 2122.970 Acres

**DEFER THE FOLLOWING LANDS WITH SLOPES GREATER THAN 40%:**

T. 0130S., R 0910W., 6TH PM  
Sec. 13: Lot 1,2;  
Sec. 13: NWNE, S2NE;  
Sec. 16: Lot 1-5, 7-11;  
Sec. 20: Lot 1;  
Sec. 21: Lot 1-6;  
Sec. 22: Lot 2,3;

Delta County  
Colorado 959.310 Acres

**PARCEL ID: 6605 SERIAL #:**

T. 0140S., R 0910W., 6TH PM  
Sec. 3: Lot 1-4;  
Sec. 3: S2NW,S2S2;  
Sec. 4: Lot 1-4;  
Sec. 5: Lot 1;  
Sec. 9: E2NE;  
Sec. 10: N2;

Delta County  
Colorado 1004.360 Acres

**DEFER THE FOLLOWING LANDS WHICH ARE LOCATED IN THE PROPOSED JUMBO SPECIAL RECREATION MANAGMENT AREA**

T. 0140S., R 0910W., 6TH PM  
Sec. 3: Lot 4;

Sec. 4: Lot 1-4;  
Sec. 5: Lot 1;

Delta County  
Colorado 243.040 Acres

**PARCEL ID: 6609 SERIAL #:**

T. 0140S., R 0910W., 6TH PM  
Sec. 15: SESW,SE;  
Sec. 21: N2,W2SW;  
Sec. 22: N2,N2SW,SESW,SE;  
Sec. 29: SENW,SW;  
Sec. 30: SWSE;  
Sec. 31: Lot 1-4;  
Sec. 31: E2W2,E2;  
Sec. 32: W2;

Delta County  
Colorado 2408.760 Acres

**DEFER THE FOLLOWING LANDS LOCATED WITHIN DELINEATED PUBLIC WATER SUPPLY AREAS**

T. 0140S., R 0910W., 6TH PM  
Sec. 15: SESW,SE;  
Sec. 21: N2,W2SW;  
Sec. 22: N2,N2SW,SESW,SE;

Delta County  
Colorado 1200.000 Acres

**PARCEL ID: 6611 SERIAL #:**

T. 0150S., R 0910W., 6TH PM  
Sec. 6: Lot 1-7;  
Sec. 6: S2NE,SESW,E2SW,SE;  
Sec. 7: Lot 1-4;  
Sec. 7: E2,E2W2;

Delta County  
Colorado 1294.560 Acres

**DEFER THE FOLLOWING LANDS LOCATED WITHIN DELINEATED PUBLIC WATER SUPPLY AREAS**

T. 0150S., R 0910W., 6TH PM  
Sec. 6: SESE;  
Sec. 7: E2;

Delta County  
Colorado 360.000 Acres

**PARCEL ID: 6612 SERIAL #:**

T. 0150S., R 0910W., 6TH PM  
Sec. 26: E2W2,W2SW;  
Sec. 29: NW,N2SW,SWSW;  
Sec. 30: Lot 1-4;  
Sec. 30: E2W2,E2;  
Sec. 31: Lot 1;  
Sec. 31: N2NE,SENE,NENW;

Delta County  
Colorado 1363.400 Acres

**DEFER THE FOLLOWING LANDS WITH SLOPES GREATER THAN 40%:**

T. 0150S., R 0910W., 6TH PM  
Sec. 26: E2W2,W2SW;  
Sec. 31: Lot 1;  
Sec. 31: NWNE,SENE,NENW;

Delta County  
Colorado 400.520 Acres

**PARCEL ID: 6625 SERIAL #:**

T. 0130S., R 0920W., 6TH PM  
Sec. 31: Lot 5-20;  
Sec. 32: Lot 1-16;  
Sec. 33: Lot 3-10;  
Sec. 34: Lot 1-3,7,8;  
Sec. 35: Lot 1-9;

Delta County  
Colorado 2228.890 Acres

**DEFER THE FOLLOWING LANDS LOCATED WITHIN DELINEATED PUBLIC WATER SUPPLY AREAS**

T. 0130S., R 0920W., 6TH PM  
Sec. 33: Lot 3-10;

**DEFER THE FOLLOWING LANDS WITH SLOPES GREATER THAN 40%:**

T. 0130S., R 0920W., 6TH PM  
Sec. 34: Lot 1-3,7,8;  
Sec. 35: Lot 1-9;

Delta County

Colorado 882.790 Acres

**PARCEL ID: 6607 SERIAL #:**

T. 0140S., R 0920W., 6TH PM  
Sec. 3: NESE,SWNW,SWSW;  
Sec. 4: Lot 2-4;  
Sec. 4: S2N2,SW,N2SE,SWSE;  
Sec. 5: Lot 1-4;  
Sec. 5: S2N2,S2;  
Sec. 6: Lot 1-7;  
Sec. 6: N2SE,SESE;  
Sec. 6: SENW,S2NE,E2SW;

Delta County  
Colorado 1913.000 Acres

**DEFER THE FOLLOWING LANDS LOCATED WITHIN DELINEATED PUBLIC WATER SUPPLY AREAS**

T. 0140S., R 0920W., 6TH PM  
Sec. 4: Lot 2,3;  
Sec. 4: S2NE,NWSE;

Delta County  
Colorado 199.880 Acres

**PARCEL ID: 6610 SERIAL #:**

T. 0140S., R 0920W., 6TH PM  
Sec. 25: S2;  
Sec. 26: N2SW,SE;  
Sec. 28: W2NE,N2SE;  
Sec. 31: SESW,S2SE;  
Sec. 32: NWSW,SESE;  
Sec. 33: SWSW;  
Sec. 34: SWNE,N2NW,SENE;  
Sec. 34: NESW,SE;  
Sec. 35: E2NE,S2;  
Sec. 36: ALL;

Delta County  
Colorado 2360.000 Acres

**DEFER THE FOLLOWING LANDS LOCATED WITHIN CLOSE PROXIMITY TO SCHOOL**

T. 0140S., R 0920W., 6TH PM  
Sec. 32: NWSW;

Delta County  
Colorado 40.000 Acres

**PARCEL ID: 6614 SERIAL #:**

T. 0150S., R 0920W., 6TH PM

- Sec. 4: Lot 4;
- Sec. 4: SWNW;
- Sec. 5: Lot 1,2;
- Sec. 5: SWNE,SENW;
- Sec. 6: Lot 1,2,5;
- Sec. 6: S2NE,SENW;
- Sec. 8: S2S2;
- Sec. 18: Lot 1;
- Sec. 18: NE,NENW,N2SE,SESE;
- Sec. 31: Lot 5,6;
- Sec. 32: S2SW;
- Sec. 34: SESW,SWSE;

Delta County  
Colorado      1232.050 Acres

**DEFER THE FOLLOWING LANDS WITH SLOPES GREATER THAN 40%:**

T. 0150S., R 0920W., 6TH PM

- Sec. 31: Lot 6;
- Sec. 32: S2SW;
- Sec. 34: SESW,SWSE;

Delta County  
Colorado      201.460 Acres

**ATTACHMENT E**  
**PREFERRED ALTERNATIVE**  
Parcels Available for Lease with Applied Stipulations  
February 14, 2013  
Colorado Competitive Oil & Gas Lease Sale

The Colorado State Office is offering competitively 20 parcels containing 20,555.458 acres of Uncompahgre Field Office Federal lands in the State of Colorado for oil and gas leasing. This notice provides:

THE FOLLOWING **ACQUIRED** LANDS ARE SUBJECT TO FILINGS IN THE MANNER SPECIFIED IN THE APPLICABLE PORTIONS OF THE REGULATIONS IN 43 CFR, SUBPART 3120.

**PARCEL ID: 6621 SERIAL #:**

T. 0150S., R 0920W., 6TH PM  
Sec. 15: W2NW;

U.S. Interest 100.00%

Delta County  
Colorado 80.000 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

All lands are subject to Exhibit UFO LN-03 to limit impacts from motorized and mechanized use.

All lands are subject to Exhibit UFO LN-04 to protect Raptor Nests.

All lands are subject to Exhibit UFO LN-06 to protect scenic byways, visual resources, and natural soundscapes.

All lands are subject to Exhibit UFO LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit UFO LN-11 to protect Steep Slopes.

All lands are subject to Exhibit UFO LN-13 to protect Saline / Selenium Soils.

All lands are subject to Exhibit UFO LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit UFO LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit UFO LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit UFO LN-21 to protect BLM Authorized Facilities.

BLM; MDO: UBRA

THE FOLLOWING **PUBLIC DOMAIN** LANDS ARE SUBJECT TO FILINGS IN THE MANNER SPECIFIED IN THE APPLICABLE PORTIONS OF THE REGULATIONS IN 43 CFR, SUBPART 3120.

**PARCEL ID: 6619 SERIAL #:**

T. 0130S., R 0890W., 6TH PM  
Sec. 3: Lot 5-7,10-12;

Gunnison County  
Colorado 184.890 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

All lands are subject to Exhibit UB-10 to protect coal mining.

All lands are subject to Exhibit UFO LN-03 to limit impacts from motorized and mechanized use.

All lands are subject to Exhibit UFO LN-04 to protect Raptor Nests.

All lands are subject to Exhibit UFO LN-06 to protect scenic byways, visual resources, and natural soundscapes.

All lands are subject to Exhibit UFO LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit UFO LN-11 to protect Steep Slopes.

All lands are subject to Exhibit UFO LN-12 to protect Wild and Scenic Rivers.

All lands are subject to Exhibit UFO LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit UFO LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.

All lands are subject to Exhibit UFO LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit UFO LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit UFO LN-21 to protect BLM Authorized Facilities.

BLM; MDO: UBRA

**PARCEL ID: 6618 SERIAL #:**

T. 0110S., R 0900W., 6TH PM

Sec. 2: Lot 1-5,7,8,11-14;

Gunnison County

Colorado 299.500 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UFO LN-04 to protect Raptor Nests.

All lands are subject to Exhibit UFO LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit UFO LN-11 to protect Steep Slopes.

All lands are subject to Exhibit UFO LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones

All lands are subject to Exhibit UFO LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit UFO LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit UFO LN-21 to protect BLM Authorized Facilities.

PVT/BLM; MDO: UBRA

**PARCEL ID: 6623 SERIAL #:**

T. 0130S., R 0900W., 6TH PM

Sec. 31: Lot 5,10,12;

Gunnison County

Colorado 93.830 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

T. 0130S., R 0900W., 6TH PM

Sec. 31: Lot 12;

The following lands are subject to Exhibit UB-10 to protect coal mining:

Sec. 31: Lot 12;

All lands are subject to Exhibit UFO LN-03 to limit impacts from motorized and mechanized use.

All lands are subject to Exhibit UFO LN-04 to protect Raptor Nests.

All lands are subject to Exhibit UFO LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit UFO LN-11 to protect Steep Slopes.

All lands are subject to Exhibit UFO LN-13 to protect Saline / Selenium Soils.

All lands are subject to Exhibit UFO LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit UFO LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.

All lands are subject to Exhibit UFO LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit UFO LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit UFO LN-21 to protect BLM Authorized Facilities.

BLM; MDO: UBRA

**PARCEL ID: 6604 SERIAL #:**

T. 0140S., R 0900W., 6TH PM

Sec. 6: Lot 1,2,6,7;

Sec. 6: S2NE,E2SW;

Sec. 6: SE;

Sec. 6: EXCEL HES 104 & HES 204;

Sec. 7: Lot 1-4;

Sec. 7: E2W2;

Sec. 7: E2;

Sec. 7: EXCEL HES 104 & 87;

Gunnison County

Colorado 830.668 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0140S., R 0900W., 6TH PM

Sec. 6: S2NE;

Sec. 7: E2;

The following lands are subject to Exhibit UB-10 to protect coal mining:

T. 0140S., R 0900W., 6TH PM

Sec. 6: Lot 1;  
Sec. 6: SENE;

All lands are subject to Exhibit UFO LN-03 to limit impacts from motorized and mechanized use  
All lands are subject to Exhibit UFO LN-04 to protect Raptor Nests.  
All lands are subject to Exhibit UFO LN-07 to protect Surrounding areas from Noise.  
All lands are subject to Exhibit UFO LN-11 to protect Steep Slopes.  
All lands are subject to Exhibit UFO LN-13 to protect Saline / Selenium Soils.  
All lands are subject to Exhibit UFO LN-15 to protect Big Game Crucial Winter Habitats.  
All lands are subject to Exhibit UFO LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones  
All lands are subject to Exhibit UFO LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.  
All lands are subject to Exhibit UFO LN-20 to protect Surface Water: Water Bodies.  
All lands are subject to Exhibit UFO LN-21 to protect BLM Authorized Facilities.

BLM; MDO: UBRA

**PARCEL ID: 6624 SERIAL #:**

T. 0130S., R 0910W., 6TH PM

Sec. 32: E2SE,SWSE;  
Sec. 33: ALL;  
Sec. 34: S2;  
Sec. 35: SW,N2SE,SWSE;  
Sec. 36: Lot 9-12;

Delta County

Colorado 601.830 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0130S., R 0910W., 6TH PM

Sec. 34: SE;  
Sec. 35: SW,N2SE;  
Sec. 36: Lot 9-12;

All lands are subject to Exhibit UFO LN-03 to limit impacts from motorized and mechanized use  
All lands are subject to Exhibit UFO LN-04 to protect Raptor Nests.  
All lands are subject to Exhibit UFO LN-06 to protect scenic byways, visual resources, and natural soundscapes  
All lands are subject to Exhibit UFO LN-07 to protect Surrounding areas from Noise.  
All lands are subject to Exhibit UFO LN-11 to protect Steep Slopes.  
All lands are subject to Exhibit UFO LN-13 to protect Saline / Selenium Soils.  
All lands are subject to Exhibit UFO LN-15 to protect Big Game Crucial Winter Habitats.  
All lands are subject to Exhibit UFO LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.  
All lands are subject to Exhibit UFO LN-20 to protect Surface Water: Water Bodies.  
All lands are subject to Exhibit UFO LN-21 to protect BLM Authorized Facilities.

BLM; MDO: UBRA

**PARCEL ID: 6616 SERIAL #:**

T. 0130S., R 0910W., 6TH PM  
Sec. 28: N2NE;

Delta County  
Colorado 80.000 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UB-03 to protect bald eagle winter concentration areas.

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

All lands are subject to Exhibit UFO LN-03 to Limit Impacts From Motorized And Mechanized Use

All lands are subject to Exhibit UFO LN-04 to protect Raptor Nests.

All lands are subject to Exhibit UFO LN-06 to protect Scenic Byways, Visual Resources, And Natural Soundscapes

All lands are subject to Exhibit UFO LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit UFO LN-11 to protect Steep Slopes.

All lands are subject to Exhibit UFO LN-13 to protect Saline / Selenium Soils.

All lands are subject to Exhibit UFO LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit UFO LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.

All lands are subject to Exhibit UFO LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit UFO LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit UFO LN-21 to protect BLM Authorized Facilities.

BLM; MDO: UBRA

**PARCEL ID: 6617 SERIAL #:**

T. 0130S., R 0910W., 6TH PM  
Sec. 13: NENE;  
Sec. 19: Lot 1-4;  
Sec. 19: E2,SENW,E2SW;  
Sec. 20: Lot 4-6;  
Sec. 21: Lot 7;  
Sec. 22: Lot 10;  
Sec. 29: Lot 1;  
Sec. 30: Lot 5-11;

Delta County  
Colorado 1163.660 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-03 to protect bald eagle winter concentration areas:

T. 0130S., R 0910W., 6TH PM  
Sec. 13: NENE;  
Sec. 21: Lot 7;

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0130S., R 0910W., 6TH PM  
Sec. 13: NENE;  
Sec. 19: Lot 2-4;  
Sec. 19: SWNE,E2NE,SENE,E2SW;  
Sec. 19: SE;  
Sec. 20: Lot 4-6;  
Sec. 21: Lot 7;  
Sec. 22: Lot 10;  
Sec. 29: Lot 1;  
Sec. 30: Lot 5-11;

The following lands are subject to Exhibit UB-10 to protect coal mining:

T. 0130S., R 0910W., 6TH PM  
Sec. 13: NENE;  
Sec. 19: Lot 1-3;  
Sec. 19: NE,SENE;

All lands are subject to Exhibit UFO LN-03 to Limit Impacts From Motorized And Mechanized Use

All lands are subject to Exhibit UFO LN-04 to protect Raptor Nests.

All lands are subject to Exhibit UFO LN-06 to protect Scenic Byways, Visual Resources, And Natural Soundscapes

All lands are subject to Exhibit UFO LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit UFO LN-11 to protect Steep Slopes.

All lands are subject to Exhibit UFO LN-13 to protect Saline / Selenium Soils.

All lands are subject to Exhibit UFO LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit UFO LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.

All lands are subject to Exhibit UFO LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit UFO LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit UFO LN-21 to protect BLM Authorized Facilities.

BLM; MDO: UBRA

**PARCEL ID: 6605 SERIAL #:**

T. 0140S., R 0910W., 6TH PM  
Sec. 3: Lot 1-3;  
Sec. 3: S2NW,S2S2;  
Sec. 9: E2NE;  
Sec. 10: N2;

Delta County  
Colorado 761.320 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

All lands are subject to Exhibit UFO LN-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit UFO LN-04 to protect Raptor Nests.

All lands are subject to Exhibit UFO LN-06 to protect scenic byways, visual resources, and natural soundscapes

All lands are subject to Exhibit UFO LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit UFO LN-11 to protect Steep Slopes.

All lands are subject to Exhibit UFO LN-13 to protect Saline / Selenium Soils.

All lands are subject to Exhibit UFO LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit UFO LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit UFO LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit UFO LN-21 to protect BLM Authorized Facilities.

BLM; MDO: UBRA

**PARCEL ID: 6606 SERIAL #:**

T. 0140S., R 0910W., 6TH PM

Sec. 1: Lot 3;

Sec. 1: E2E2SE;

Sec. 1: E2SE IN DELTA COUNTY;

Sec. 1: SWNE,S2NW,SW,W2SE;

Sec. 2: S2NE,N2SW,SE;

Sec. 11: E2,S2NW,SW;

Sec. 12: ALL IN DELTA COUNTY;

Sec. 12: E2E2E2;

Delta County

Gunnison County

Colorado 2000.100 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0140S., R 0910W., 6TH PM

Sec. 1: Lot 3;

Sec. 2: S2NE,N2SW,W2SE;

Sec. 11: S2NW,SW,W2E2,SESE;

All lands are subject to Exhibit UFO LN-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit UFO LN-04 to protect Raptor Nests.

All lands are subject to Exhibit UFO LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit UFO LN-11 to protect Steep Slopes.

All lands are subject to Exhibit UFO LN-13 to protect Saline / Selenium Soils.  
All lands are subject to Exhibit UFO LN-15 to protect Big Game Crucial Winter Habitats.  
All lands are subject to Exhibit UFO LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones  
All lands are subject to Exhibit UFO LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.  
All lands are subject to Exhibit UFO LN-20 to protect Surface Water: Water Bodies.  
All lands are subject to Exhibit UFO LN-21 to protect BLM Authorized Facilities.

BLM; MDO: UBRA

**PARCEL ID: 6609 SERIAL #:**

T. 0140S., R 0910W., 6TH PM  
Sec. 29: SENW,SW;  
Sec. 30: SWSE  
Sec. 31: Lot 1-4;  
Sec. 31: E2W2,E2;  
Sec. 32: W2;

Delta County  
Colorado 1208.760 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

The following lands are subject to Exhibit UB-01 to protect highly erodible and/or saline soil areas:

T. 0140S., R 0910W., 6TH PM  
Sec. 29: SENW,SW;  
Sec. 30: SWSE;  
Sec. 31: Lot 1-4;  
Sec. 31: NE,E2W2,NESE,W2SE;  
Sec. 32: NWNW;

All lands are subject to Exhibit UFO LN-03 to limit impacts from motorized and mechanized use  
All lands are subject to Exhibit UFO LN-04 to protect Raptor Nests.  
All lands are subject to Exhibit UFO LN-07 to protect Surrounding areas from Noise.  
All lands are subject to Exhibit UFO LN-11 to protect Steep Slopes.  
All lands are subject to Exhibit UFO LN-13 to protect Saline / Selenium Soils.  
All lands are subject to Exhibit UFO LN-15 to protect Big Game Crucial Winter Habitats.  
All lands are subject to Exhibit UFO LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.  
All lands are subject to Exhibit UFO LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.  
All lands are subject to Exhibit UFO LN-20 to protect Surface Water: Water Bodies.  
All lands are subject to Exhibit UFO LN-21 to protect BLM Authorized Facilities.

BLM; MDO: UBRA

**PARCEL ID: 6611 SERIAL #:**

T. 0150S., R 0910W., 6TH PM  
Sec. 6: Lot 1-7;  
Sec. 6: S2NE,SENE,E2SW,W2SE,NESE;  
Sec. 7: Lot 1-4;  
Sec. 7: E2W2;

Delta County  
Colorado 934.560 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

The following lands are subject to Exhibit UB-01 to protect highly erodible and/or saline soil areas:

T. 0150S., R 0910W., 6TH PM  
Sec. 6: Lot 2-6;  
Sec. 6: SWNE,SENE,NESW;

All lands are subject to Exhibit UFO LN-03 to limit impacts from motorized and mechanized use  
All lands are subject to Exhibit UFO LN-04 to protect Raptor Nests.  
All lands are subject to Exhibit UFO LN-07 to protect Surrounding areas from Noise.  
All lands are subject to Exhibit UFO LN-11 to protect Steep Slopes.  
All lands are subject to Exhibit UFO LN-13 to protect Saline / Selenium Soils.  
All lands are subject to Exhibit UFO LN-15 to protect Big Game Crucial Winter Habitats.  
All lands are subject to Exhibit UFO LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.  
All lands are subject to Exhibit UFO LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.  
All lands are subject to Exhibit UFO LN-20 to protect Surface Water: Water Bodies.  
All lands are subject to Exhibit UFO LN-21 to protect BLM Authorized Facilities.

BLM; MDO: UBRA

**PARCEL ID: 6612 SERIAL #:**

T. 0150S., R 0910W., 6TH PM  
Sec. 29: NW,N2SW,SWSW;  
Sec. 30: Lot 1-4;  
Sec. 30: E2W2,E2;  
Sec. 31: NENE;

Delta County  
Colorado 962.880 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

All lands are subject to Exhibit UFO LN-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit UFO LN-04 to protect Raptor Nests.

All lands are subject to Exhibit UFO LN-06 to protect scenic byways, visual resources, and natural soundscapes

All lands are subject to Exhibit UFO LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit UFO LN-11 to protect Steep Slopes.

All lands are subject to Exhibit UFO LN-13 to protect Saline / Selenium Soils.

All lands are subject to Exhibit UFO LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit UFO LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.

All lands are subject to Exhibit UFO LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit UFO LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit UFO LN-21 to protect BLM Authorized Facilities.

BLM; MDO: UBRA

**PARCEL ID: 6625 SERIAL #:**

T. 0130S., R 0920W., 6TH PM

Sec. 31: Lot 5-20;

Sec. 32: Lot 1-16;

Delta County

Colorado 1346.100 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-10 to protect coal mining:

T. 0130S., R 0920W., 6TH PM

Sec. 31: Lot 6;

Sec. 32: Lot 1-4,7,8;

All lands are subject to Exhibit UFO LN-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit UFO LN-04 to protect Raptor Nests.

All lands are subject to Exhibit UFO LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit UFO LN-11 to protect Steep Slopes.

All lands are subject to Exhibit UFO LN-13 to protect Saline / Selenium Soils.

All lands are subject to Exhibit UFO LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit UFO LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.

All lands are subject to Exhibit UFO LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit UFO LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit UFO LN-21 to protect BLM Authorized Facilities.

BLM; MDO: UBRA

**PARCEL ID: 6607 SERIAL #:**

T. 0140S., R 0920W., 6TH PM  
Sec. 3: NESE,SWNW,SWSW;  
Sec. 4: Lot 4;  
Sec. 4:S2NW,SW,W2SE;  
Sec. 5: Lot 1-4;  
Sec. 5: S2N2,N2SE, SW,S2SE;  
Sec. 6: Lot 1-7;  
Sec. 6: N2SE,SESE;  
Sec. 6: SENW,S2NE,E2SW;

Delta County  
Colorado 1713.120 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0140S., R 0920W., 6TH PM  
Sec. 3: SWNW,SWSW;  
Sec. 4: NESE,SWSE,SESW,SW;  
Sec. 5: S2SE;  
Sec. 6: Lot 6,7;  
Sec. 6: E2SW;  
Sec. 6: E2SE;

All lands are subject to Exhibit UFO LN-03 to limit impacts from motorized and mechanized use  
All lands are subject to Exhibit UFO LN-04 to protect Raptor Nests.  
All lands are subject to Exhibit UFO LN-06 to protect scenic byways, visual resources, and natural soundscapes  
All lands are subject to Exhibit UFO LN-07 to protect Surrounding areas from Noise.  
All lands are subject to Exhibit UFO LN-11 to protect Steep Slopes.  
All lands are subject to Exhibit UFO LN-13 to protect Saline / Selenium Soils.  
All lands are subject to Exhibit UFO LN-15 to protect Big Game Crucial Winter Habitats.  
All lands are subject to Exhibit UFO LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.  
All lands are subject to Exhibit UFO LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.  
All lands are subject to Exhibit UFO LN-20 to protect Surface Water: Water Bodies.  
All lands are subject to Exhibit UFO LN-21 to protect BLM Authorized Facilities.

BLM; MDO: UBRA

**PARCEL ID: 6608 SERIAL #:**

T. 0140S., R 0920W., 6TH PM  
Sec. 7: E2NE,SESW,E2SW,W2SE;  
Sec. 8: N2,N2S2,SWSW,SWSE;  
Sec. 9: NWNE,NENW;  
Sec. 17: SWNW;  
Sec. 18: Lot 2;  
Sec. 18: E2NW;

Delta County  
Colorado 1078.040 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

All lands are subject to Exhibit UFO LN-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit UFO LN-04 to protect Raptor Nests.

All lands are subject to Exhibit UFO LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit UFO LN-11 to protect Steep Slopes.

All lands are subject to Exhibit UFO LN-13 to protect Saline / Selenium Soils.

All lands are subject to Exhibit UFO LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit UFO LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.

All lands are subject to Exhibit UFO LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit UFO LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit UFO LN-21 to protect BLM Authorized Facilities.

BLM; MDO: UBRA

**PARCEL ID: 6610 SERIAL #:**

T. 0140S., R 0920W., 6TH PM

Sec. 25: S2;

Sec. 26: N2SW,SE;

Sec. 28: W2NE,N2SE;

Sec. 31: SESW,S2SE;

Sec. 32: SESE;

Sec. 33: SWSW;

Sec. 34: SWNE,N2NW,SENE;

Sec. 34: NESW,SE;

Sec. 35: E2NE,S2;

Sec. 36: ALL;

Delta County  
Colorado 2320.000 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

The following lands are subject to Exhibit UB-01 to protect highly erodible and/or saline soil areas:

T. 0140S., R 0920W., 6TH PM

Sec. 36: SWNE,E2NE,SE;

The following lands are subject to Exhibit UB-03 to protect bald eagle winter concentration areas:

T. 0140S., R 0920W., 6TH PM  
Sec. 31: SWSE,SESW;

The following lands are subject to Exhibit UFO LN-05 to protect the landfill sites:

T. 0140S., R0920W., 6<sup>TH</sup> PM  
Sec. 28: N2SE

The following lands are subject to Exhibit UFO LN-14 to protect Bald Eagle Winter Roost Sites:

T. 0140S., R0920W., 6<sup>TH</sup> PM  
Sec. 28: W2NE, N2SE

All lands are subject to Exhibit UFO LN-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit UFO LN-04 to protect Raptor Nests.

All lands are subject to Exhibit UFO LN-06 to protect scenic byways, visual resources, and natural soundscapes

All lands are subject to Exhibit UFO LN-07 to protect Surrounding areas from Noise.

All lands are subject to Exhibit UFO LN-11 to protect Steep Slopes.

All lands are subject to Exhibit UFO LN-13 to protect Saline / Selenium Soils.

All lands are subject to Exhibit UFO LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit UFO LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit UFO LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit UFO LN-21 to protect BLM Authorized Facilities.

PVT/BLM;BLM; MDO: UBRA

**PARCEL ID: 6613 SERIAL #:**

T. 0150S., R 0920W., 6TH PM  
Sec. 15: S2NE, E2NW,S2;  
Sec. 22: NESW,N2SE,NE,N2NW,SESW;  
Sec. 23: NENE,W2NW;  
Sec. 24: SWSW,SE,S2NE,NW,N2SW;  
Sec. 25: N2NE,SENE,NWNW,NESE;

Delta County

Colorado 1720.000 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0150S., R 0920W., 6TH PM  
Sec. 15: S2NE,SESW,S2;  
Sec. 22: NESW,N2SE,NE,N2NW,SESW  
Sec. 23: NENE,W2NW;  
Sec. 24: SE,SWSW,S2NE,NW,N2SW;  
Sec. 25: N2NE,SENE,NWNW,NESE;

All lands are subject to Exhibit UFO-LN-03 to limit impacts from motorized and mechanized use

All lands are subject to Exhibit UFO LN-04 to protect Raptor Nests.  
All lands are subject to Exhibit UFO-LN-06 to protect scenic byways, visual resources, and natural soundscapes  
All lands are subject to Exhibit UFO LN-07 to protect Surrounding areas from Noise.  
All lands are subject to Exhibit UFO LN-11 to protect Steep Slopes.  
All lands are subject to Exhibit UFO LN-13 to protect Saline / Selenium Soils.  
All lands are subject to Exhibit UFO LN-15 to protect Big Game Crucial Winter Habitats.  
All lands are subject to Exhibit UFO LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.  
All lands are subject to Exhibit UFO LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.  
All lands are subject to Exhibit UFO LN-20 to protect Surface Water: Water Bodies.  
All lands are subject to Exhibit UFO LN-21 to protect BLM Authorized Facilities.

BLM; MDO: UBRA

**PARCEL ID: 6614 SERIAL #:**

T. 0150S., R 0920W., 6TH PM

Sec. 4: Lot 4;  
Sec. 4: SWNW;  
Sec. 5: Lot 1,2;  
Sec. 5: SWNE,SENE;  
Sec. 6: Lot 1,2,5;  
Sec. 6: S2NE,SENE;  
Sec. 8: S2S2;  
Sec. 18: Lot 1;  
Sec. 18: NE,NENW,N2SE,SESE;  
Sec. 31: Lot 5;

Delta County

Colorado 1030.590 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

All lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges.

The following lands are subject to Exhibit UB-01 to protect highly erodible and/or saline soil areas:

T. 0150S., R 0920W., 6TH PM

Sec. 6: Lot 5;  
Sec. 6: SENW;  
Sec. 8: SWSW;  
Sec. 18: Lot 1;  
Sec. 18: NE,NENW,N2SE,SESE;

All lands are subject to Exhibit UFO LN-03 to limit impacts from motorized and mechanized use  
All lands are subject to Exhibit UFO LN-04 to protect Raptor Nests.  
All lands are subject to Exhibit UFO LN-06 to protect scenic byways, visual resources, and natural soundscapes  
All lands are subject to Exhibit UFO LN-07 to protect Surrounding areas from Noise.  
All lands are subject to Exhibit UFO LN-11 to protect Steep Slopes.  
All lands are subject to Exhibit UFO LN-13 to protect Saline / Selenium Soils.  
All lands are subject to Exhibit UFO LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit UFO LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.  
All lands are subject to Exhibit UFO LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.  
All lands are subject to Exhibit UFO LN-20 to protect Surface Water: Water Bodies.  
All lands are subject to Exhibit UFO LN-21 to protect BLM Authorized Facilities.

BOR;BLM; MDO: UBRA

**PARCEL ID: 6615 SERIAL #:**

T. 0150S., R 0920W., 6TH PM  
Sec. 1: Lot 1-4;  
Sec. 1: S2N2,S2;  
Sec. 2: Lot 1-4;  
Sec. 2: S2N2,N2SW,SE;  
Sec. 3: Lot 5,6,8-11;  
Sec. 10: SWNE,N2SE;  
Sec. 11: NE,N2SW,SESW,W2SE;  
Sec. 12: NW,E2SE,SWSE;  
Sec. 14: NWNE;

Delta County  
Colorado 2145.610 Acres

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

The following lands are subject to Exhibit UB-01 to protect highly erodible and/or saline soil areas:

T. 0150S., R 0920W., 6TH PM  
Sec. 1: Lot 1,2,3;  
Sec. 1: S2NE,E2SW,N2SE,SWSE;

The following lands are subject to Exhibit UB-04 to protect crucial deer and elk winter ranges:

T. 0150S., R 0920W., 6TH PM  
Sec. 1: Lot 1-4;  
Sec. 1: S2N2,S2;  
Sec. 2: Lot 1-4;  
Sec. 2: S2N2,N2SW,SE;  
Sec. 3: Lot 5,6,9,10;  
Sec. 10: SWNE,N2SE;  
Sec. 11: NE,NWSW,E2SW,W2SE;  
Sec. 12: NW,SWSE,E2SE;  
Sec. 14: NWNE;

All lands are subject to Exhibit UFO LN-03 to limit impacts from motorized and mechanized use  
All lands are subject to Exhibit UFO LN-04 to protect Raptor Nests.  
All lands are subject to Exhibit UFO LN-06 to protect scenic byways, visual resources, and natural soundscapes  
All lands are subject to Exhibit UFO LN-07 to protect Surrounding areas from Noise.  
All lands are subject to Exhibit UFO LN-11 to protect Steep Slopes.  
All lands are subject to Exhibit UFO LN-13 to protect Saline / Selenium Soils.  
All lands are subject to Exhibit UFO LN-15 to protect Big Game Crucial Winter Habitats.

All lands are subject to Exhibit UFO LN-16 to protect Aquatic Wildlife, Wetlands and Riparian Zones.

All lands are subject to Exhibit UFO LN-18 to protect Surface and Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit UFO LN-20 to protect Surface Water: Water Bodies.

All lands are subject to Exhibit UFO LN-21 to protect BLM Authorized Facilities.

BLM; MDO: UBRA

## ATTACHMENT F

### STIPULATIONS

EXHIBIT CO-34	T&E Species Consultation	F-2
EXHIBIT CO-39	Archaeology, Cultural Resources	F-3
EXHIBIT UB-01	Highly Erodible and/or Saline Soil Areas	F-4
EXHIBIT UB-03	Bald Eagle Winter Concentration Areas	F-5
EXHIBIT UB-04	Crucial Deer and Elk Winter Range	F-6
EXHIBIT UB-10	Coal Resources	F-7

### LEASE NOTICES\*

EXHIBIT UFO-LN-03	OHV Areas	F-8
EXHIBIT UFO-LN-04	Raptor Nests	F-9
EXHIBIT UFO-LN-05	Land Fill Areas	F-10
EXHIBIT UFO-LN-06	Scenic Byway	F-11
EXHIBIT UFO-LN-07	Noise	F-12
EXHIBIT UFO-LN-11	Steep Slopes	F-13
EXHIBIT UFO-LN-12	Wild and Scenic Rivers	F-14
EXHIBIT UFO-LN-13	Saline / Selenium Soils	F-15
EXHIBIT UFO-LN-14	Bald Eagle Winter Roost Sites	F-16
EXHIBIT UFO-LN-15	Big Game Crucial Winter Habitats	F-17
EXHIBIT UFO-LN-16	Aquatic Wildlife, Riparian Zones and Wetlands	F-18
EXHIBIT UFO-LN-18	Surface and Ground Water: Municipal Watersheds and Public Water Supplies	F-19
EXHIBIT UFO-LN-20	Protection of Surface Waters: Water Bodies	F-21
EXHIBIT UFO-LN-21	BLM Authorized Facilities	F-23

**\*43 CFR 3101.1-2 Surface Use Rights** (p.336 2006 revision)

Stipulations attached to the lease; restrictions deriving from specific, nondiscretionary statutes; and such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses or users not addressed in the lease stipulations at the time operations are proposed. To the extent consistent with lease rights granted, such reasonable measures may include, but are not limited to, modification to siting or design of facilities, timing of operations, and specification of interim and final reclamation measures. At a minimum, measures shall be deemed consistent with lease rights granted provided that they do not: require relocation of proposed operations by more than 200 meters; require that operations be sited off the leasehold; or prohibit new surface disturbing operations for a period in excess of 60 days in any lease year.

## EXHIBIT CO-34

Lease Number:

### 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 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.

On the lands described below:

## **EXHIBIT CO-39**

Lease Number:

### **CULTURAL CONTROLLED SURFACE USE**

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.

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of this stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

On the lands described below:

**EXHIBIT UB-01/UB-1**

Lease Number:

**SALINE/HEL SOILS TIMING LIMITATION STIPULATION**

To protect highly erodible and/or saline soil areas.

No surface use is allowed during the following time period(s). This stipulation does not apply to operation and maintenance of production facilities.

March 1 - May 31

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of the stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

On the lands described below:

**EXHIBIT UB-03/UB-3**

Lease Number:

**BAEA TIMING LIMITATION STIPULATION**

To protect bald eagle winter concentration areas.

No surface use is allowed during the following time period(s). This stipulation does not apply to operation and maintenance of production facilities.

December 1 - April 30

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of the stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

On the lands described below:

**EXHIBIT UB-04/GGNCA-4**

Lease Number:

**BIG GAME TIMING LIMITATION STIPULATION**

To protect crucial deer and elk winter ranges.

No surface use is allowed during the following time period(s). This stipulation does not apply to operation and maintenance of production facilities.

December 1 - April 30

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of the stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

On the lands described below:

## **EXHIBIT UB-10**

Lease Number:

### **COALBED METHANE/COAL MINING STIPULATION**

To protect the maximum economic recovery and safety of coal mining where the overburden is 3500 feet or less

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of the stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

#### **Exception Criteria:**

Within the Paonia-Somerset Known Recoverable Coal Resource Area (KRCRA), coal and oil and gas leasing and development will be managed consistent with land use plans and lease terms. More specifically, the portions of the KRCRA where the overburden above the B-Seam of the Mesa Verde coals is less than 3500 feet will be managed primarily for the exploration and development of the coal resources. Oil and gas operators anticipating exploration or development operations are encouraged to consult and coordinate their activities with the affected coal operators. In the event that the oil and gas and coal operators are unable to reach agreement on proposed oil and gas exploration or development, the BLM authorized officer will intervene and use all pertinent lease terms, regulations, and policy to determine what course of action is in the public's interest. However, under no circumstances will the BLM approve any oil and gas operations that compromise maximum economic coal recovery or the safety of underground mining operations.

On the lands described below:

**EXHIBIT UFO-LN-03**

Lease Number:

LEASE NOTICE

OHV AREAS

The lessee/operator is given notice that motorized and mechanized travel may be limited to existing and/or designated routes.

Prior to any surface disturbing activities on the lease area, the BLM Authorized Officer must be contacted to obtain a map of the existing and/or designated routes. BLM will work with the lessee to determine the best sites for roads, pads, facilities, etc. The overall goal of this measure is to reduce impacts to soils, control erosion and to protect populations of threatened, endangered, sensitive or candidate plant species.

On the lands described below:

**EXHIBIT UFO-LN-04**

Lease Number:

**LEASE NOTICE**

**RAPTOR NEST OCCURRENCE**

The lessee is hereby notified that, raptor nests may exist on portions of the lease tract.

Completion of raptor surveys may be required using BLM approved methods prior to any ground disturbing activities. If raptor nests are present, COAs may be developed using currently accepted buffer distances and/or seasonal constraints in the location of drilling operations to prevent impacts to golden eagles or other raptors protected by the Migratory Bird Treaty Act of 1918 (16 U.S. code, Sec. 703-712, as amended), or the Bald and Golden Eagle Protection Act (16 U.S. Code, Sec. 668-668d, 1940 as amended). In order to avoid violation of these statutes, the lessee should contact the BLM Authorized Officer prior to surveying or other surface activities on the lease tract.

On the lands described below:

**EXHIBIT UB-LN-05**

Lease Number:

LEASE NOTICE

LANDFILL AREA

This lease parcel encompasses a portion of an authorized landfill. The lessee is hereby notified that, the operator may be required to implement specific measures to reduce impacts of oil and gas operations on the landfill areas. Such measures shall be developed in concert with the surface owner during the preparation of the NEPA analysis. The overall goal of these measures is to protect the landfill sites.

On the lands described below:

## EXHIBIT UFO-LN-06

Lease Number:

### LEASE NOTICE

#### SCENIC AND NATURAL VALUES NOTICE

The lessee/operator is given notice that special design and reclamation measures may be required to minimize light and noise pollution as well as protect the outstanding scenic and natural landscape values of the following portion(s) of this lease:

For the purpose of protecting: Scenic Byways, Visual Resources, and Natural Soundscapes  
Minimize noise and light pollution as well as protect the outstanding scenic and natural landscape values in areas adjacent to communities of Crawford, Hotchkiss, and Paonia and/or within ½ mile of the West Elk Byway.

Reduce noise pollution by using best available technology such as installation of multi-cylinder pumps, hospital sound reducing mufflers, and placement of exhaust systems to direct noise away from communities of Crawford, Hotchkiss, and Paonia or West Elk Byway.

Reduce light pollution by using methods such as limiting height of light poles, timing of lighting operations (meaning limiting lighting to times of darkness associated with drilling and work over or maintenance operations), limiting wattage intensity, and constructing light shields.

Protect outstanding scenic and natural landscape values with special design and reclamation measures incorporated into the Surface Use Plan of Operations of a development proposal which may include transplanting trees and shrubs, fertilization, mulching, special erosion control structures, irrigation, site re-contouring to match the original contour, buried tanks and low profile equipment, and painting to minimize visual contrasts. The proposed location of the activity may be moved up to 200 meters in sensitive areas, such as unique geologic features and rock formations, visually prominent areas, and high recreation use areas.

On the lands described below:

**EXHIBIT UFO-LN-07**

Lease Number:

LEASE NOTICE

NOISE

The lessee is hereby notified that, the operator drilling on Federal mineral estate may be required to consider the impact of operations on nearby communities and residences. Operators can expect that adjustments to operating procedures to accommodate local community and residential concerns may be necessary. For example, the operator may be required to try to work out reasonable compromises on issues such as noise, dust, and traffic. Noise pollution could be further reduced by using best available technology such as installation of multi-cylinder pumps, hospital sound reducing mufflers, and placement of exhaust systems to direct noise away from communities of Crawford, Hotchkiss, and Paonia or West Elk Byway. And,

The lessee may be required to apply mitigation to reduce light pollution by using methods such as limiting height of light poles, timing of lighting operations (meaning limiting lighting to times of darkness associated with drilling and work over or maintenance operations), limiting wattage intensity, and constructing light shields.

On the lands described below:

**EXHIBIT UFO-LN-11**

Lease Number:

**LEASE NOTICE**

**STEEP SLOPES**

For the purposes of protecting: Steep Slopes

The lessee/operator is given notice that surface occupancy or use may be subject to the following special operating constraints.

Avoid surface occupancy on slopes of or greater than 40 percent, including slumps, landslides, and highly erosive soils (susceptible to wind and water erosion).

Apply the following protective measures on slopes of 30 to 39 percent, including slumps, landslides, and highly erosive soils (susceptible to wind and water erosion). Prior to surface disturbance on slopes of 30 to 39 percent, approval of a reclamation plan may be required by the BLM Authorized Officer.

Such plans would apply protective measures to demonstrate how the following will be accomplished:

Restoration of Site productivity.

Adequate Control of surface runoff .

Protection of off-site areas from accelerated erosion such as rilling, gullyng, piping, and mass wasting.

During extended wet periods, surface-disturbing activities may not be conducted.

On the lands described below:

**EXHIBIT UFO-LN-12**

Lease Number:

**LEASE NOTICE**

**WILD AND SCENIC RIVERS**

For the purposes of protecting: Wild and Scenic Rivers

The lessee/operator is given notice that if the lease were to be developed, all development and related activities should take place beyond ¼ mile of any eligible river segment. Measures must be taken to ensure that the free-flow of the stream and its water quality are not negatively affected. Measures must also be taken to ensure that the fish Outstandingly Remarkable Value is protected.

The segment has a tentative classification of “scenic” due to the relatively natural and undeveloped nature of the study area corridor. The study area may not be altered to the point where it is no longer natural and undeveloped, necessitating reclassification to “recreational.”

On the lands described below:

## EXHIBIT UFO-LN-13

Lease Number:

### LEASE NOTICE

#### SALINE/SELENIUM SOILS

For the purposes of protecting: Saline / Selenium Soils

The lessee/operator is given notice that development proposals within soils of this type may:

Need to conduct site-specific soil sampling and analysis prior to approval of the surface use plan to minimize disturbance on those soil types defined by the Natural Resources Conservation Service with the highest selenium concentrations. This may require relocation to soils with lower selenium concentrations.

Evaluate the proximity to water features to minimize the potential of selenium transport. May require approval of a surface use plan by the Authorized Officer. Protective measures may include how the following will be accomplished:

Adequate control of surface runoff.

Protection of off-site areas from accelerated erosion such as rilling, gullying, piping, and mass wasting.

During extended wet periods, surface-disturbing activities may not be conducted.

May be required to prevent the deep percolation of groundwater within saline/selenium soils. Engineered leak prevention of drilling system pits containing fluids such as flowback and stimulation fluids, produced water, and cuttings. Surface discharge of produced water and mechanical evaporation may be prohibited.

On the lands described below:

**EXHIBIT UFO-LN-14**

Lease Number:

LEASE NOTICE

BAEA WINTER ROOST SITES

For the purposes of protecting: Bald Eagle Winter Roost Sites

The lessee is hereby notified that, a bald eagle winter roost site exists on a portion of the lease tract. Development activities may be modified to prevent impacts to bald eagles protected by the Migratory Bird Treaty Act of 1918 (16 U.S. code, Sec. 703-712, as amended), and the Bald and Golden Eagle Protection Act (16 U.S. Code, Sec. 668-668d, 1940 as amended). In order to avoid violation of these statutes, the lessee should contact the BLM Authorized Officer prior to surveying or other surface activities on the lease tract.

On the lands described below:

**EXHIBIT UFO-LN-15**

Lease Number:

**LEASE NOTICE**

**BIG GAME CRUCIAL WINTER HABITATS**

For the purposes of protecting: Big Game Crucial Winter Habitats

The lessee/operator is given notice that where new mineral development results in excessive surface disturbance on BLM lands in big game crucial winter ranges, the operator may be asked to improve habitat on other BLM lands in order to support existing big game populations (compensatory mitigation).

On the lands described below:

**EXHIBIT UFO-LN-16**

Lease Number:

LEASE NOTICE

AQUATIC WILDLIFE, RIPARIAN ZONES AND WETLANDS

For the purposes of protecting: Aquatic Wildlife, Riparian Zones and Wetlands

The lessee/operator is given notice that the location of proposed development may require moving surface-disturbing oil and gas exploration and development activities up to 200 meters from the ordinary high water mark or riparian/wetland. These activities may require special engineering design, construction and implementation measures to protect water resources of the aquatic habitat.

On the lands described below:

## EXHIBIT UFO-LN-18

Lease Number:

### LEASE NOTICE

#### SURFACE AND GROUND WATER

For the purposes of protecting: Surface and/or Ground Water: Municipal Watersheds and Public Water Supplies

The lessee/operator may be required ensure protection of Municipal Watersheds and Public Water Supplies in the following manner:

Avoid surface occupancy within 1,000 horizontal feet of either side of a classified surface water supply stream segment (as measured from the average high-water mark of a water body) for a distance of 5 miles upstream of a public water supply intake with the classification “Water Supply” by the State of Colorado; or a designated watershed with a protection plan providing domestic water.

Avoid surface occupancy within a 1,000-foot horizontal buffer of all Public Water Supplies using a groundwater well or spring or a designated watershed with a protection plan providing domestic water.

Apply the following protective measures within a distance greater than 1,000 horizontal feet but less than 2,640 horizontal feet of a classified “Water Supply” using a groundwater well ,spring or surface water supply stream segment (as measured from the average high water mark of a water body) for a distance of 5 miles upstream of a public water supply intake with the classification “Water Supply” by the State of Colorado:

- Pitless drilling systems.
- Flowback and stimulation fluids contained within tanks that are placed on a well pad or in an area with down-gradient berming.
- Follow COGCC rules for fracking operations and disclosure.
- Notification of potentially impacted Public Water Systems 15 miles downstream.
- The use of evaporation ponds for means of disposing of produced water shall not be permitted on BLM administered lands or split estate within the municipal watershed.

Collection of baseline water quality data (surface and/or groundwater) consisting of a pre-drilling sample collected beginning within a 100 feet of well pad, or where sufficient water exists to collect a sample per EPA or USGS collection methods. Additional sampling must be conducted during drilling operations and immediately following well completion. Each sample should

analyze at a minimum: pH, alkalinity, specific conductance, major cations, major anions, total dissolved solids, BTEX/GRO/DRO, TPH, PAH's (including benzo[a] pyrene and metals [arsenic, barium, calcium, iron, magnesium, manganese, lead, and selenium]). For municipal watersheds, a coordinated water resources monitoring plan may need to be developed with the BLM and municipality. Each office will determine the sampling sites, intensity, and need for groundwater sampling, depending on site specific geology and risk. Results must be submitted to BLM within 3 months of data collection per Section 317B of the Colorado Oil and Gas Conservation Commission regulations.

On the lands described below:

## EXHIBIT UFO-LN-20

Lease Number:

### LEASE NOTICE

#### SURFACE WATER BODIES

For the purposes of protecting: Surface Water Bodies

The lessee/operator may be required modify or adjust development plans if the proposal is located in the proximity of any of the following:

##### Major River Corridors:

Avoid surface occupancy within 200 meters of bank-full stage or within 100 meters (328 feet) of the 100-year floodplain.

##### Perennial Streams:

Avoid surface occupancy within 300 feet from the edge of the ordinary high-water mark (bank-full stage) of perennial streams.

Review site locations for more suitable locations from 300 to 500 feet from the edge of the ordinary high-water mark (bank-full stage) of perennial streams.

##### Irrigation Ditches, Intermittent/Ephemeral Channels, and other water bodies:

Review site locations including pads, roads, and pipelines for possible relocation of up to 200 meters to a new location to reduce potential impacts to these water features.

##### Additional Mitigation Measures:

Site specific conditions analyzed at the time of development related to surface water features including irrigation ditches, may warrant the following additional protective measures:

- Pitless drilling systems;
- Flowback and stimulation fluids contained within tanks that are placed on a well pad or in an area with down-gradient berming;
- Follow COGCC rules for fracking operations and disclosure;
- Collection of baseline water quality data (surface and/or groundwater) consisting of a pre-drilling sample collected beginning within a 100 feet of well pad, or where sufficient water exists to collect a sample per EPA or USGS collection methods. Additional sampling must be conducted during drilling operations and immediately following well completion. Each sample should analyze at a minimum: pH, alkalinity, specific conductance, major cations, major anions, total dissolved solids, BTEX/GRO/DRO,

TPH, PAH's (including benzo[a] pyrene and metals [arsenic, barium, calcium, iron, magnesium, manganese, lead, and selenium]). For municipal watersheds, a coordinated water resources monitoring plan may need to be developed with the BLM and municipality. Each office will determine the sampling sites, intensity, and need for groundwater sampling, depending on site specific geology and risk. Results must be submitted to BLM within 3 months of data collection per Section 317B of the Colorado Oil and Gas Conservation Commission regulations.

On the lands described below:

**EXHIBIT UFO-LN-21**

Lease Number:

**LEASE NOTICE  
BLM AUTHORIZED FACILITIES**

For the purposes of protecting: BLM Authorized Facilities

The lessee/operator is given notice that BLM authorized facilities are likely to be present on the proposed lease parcels on Federal surface. The lessee may be required to avoid existing authorized facilities to the extent possible. If they cannot be avoided, caution will be taken to ensure no damage to the facility or disruption of use occurs and site specific Conditions of Approval may be applied by BLM to the development proposal. If necessary, authorization holders will be contacted to coordinate activities that may influence their facilities.

On the lands described below:

**ATTACHMENT G**  
**Summary and Response; Public Comments**

Comments received and responded to in this appendix are subject to the crosswalk table below. The parcel identification numbers had to be changed during the process of removing the nominated parcels from the August 2012 lease sale and adding them to the February 2013 lease sale.

<b>Crosswalk: August 2013 Parcels and February 2013 Parcels</b>		
	<b>August 2012 Lease Sale</b>	<b>February 2013 Lease Sale</b>
	<u>6189</u>	<b><u>6623</u></b>
	<u>6190</u>	<b><u>6624</u></b>
	<u>6191</u>	<b><u>6625</u></b>
	<u>6192</u>	<b><u>6604</u></b>
	<u>6193</u>	<b><u>6605</u></b>
	<u>6194</u>	<b><u>6606</u></b>
	<u>6195</u>	<b><u>6607</u></b>
	<u>6196</u>	<b><u>6608</u></b>
	<u>6197</u>	<b><u>6609</u></b>
	<u>6198</u>	<b><u>6610</u></b>
	<u>6199</u>	<b><u>6611</u></b>
	<u>6200</u>	<b><u>6612</u></b>
	<u>6201</u>	<b><u>6613</u></b>
	<u>6202</u>	<b><u>6614</u></b>
	<u>6203</u>	<b><u>6615</u></b>
	<u>6205</u>	<b><u>6616</u></b>
	<u>6206</u>	<b><u>6622</u></b>
	<u>6207</u>	<b><u>6617</u></b>
	<u>6211</u>	<b><u>6618</u></b>
	<u>6215</u>	<b><u>6619</u></b>
	<u>6216</u>	<b><u>6620</u></b>
	<u>6217</u>	<b><u>6621</u></b>
	<b><u>Total Parcels in UFO = 22</u></b>	

## Summary of Public Comments Obtained During Preliminary Draft Review and Responses.

**Number of Issues:** 88

### **Air Resources**

Total Number of Submissions: 49

Total Number of Comments: 60

### **Summary**

General Development Concerns – Commenters expressed concerns for increased road development, traffic, noise and light pollution, impeded views, general environmental degradation and impacts to quality of life. Commenters expressed general concerns for increasing emissions from various sources, especially emissions of VOCs (an ozone precursor), and air toxics.

Topography and Meteorological Concerns – Commenters expressed concerns for the uniqueness of the area including the potential for the terrain to trap air contaminants, the likeliness for inversions to occur, which can impede effective dispersion of air contaminants and could cause degradation to air quality.

Personal Property and Health Impact Concerns – Commenters expressed concerns for personal property including their potential proximity to development activities and the potential health impacts associated with exposure to such activities.

Criticism for Lack of a Full Analysis Prior to Lease Sale – Commenters expressed concerns that Bureau of Land Management (BLM) is negligent for not preparing a full Environmental Impact Statement (EIS) to address potential impacts from leasing and for not fully analyzing impacts to air quality including any cumulative impacts resulting from listed current and foreseeable activities, such as other oil and gas projects (i.e. Bull Mountain) occurring in the area. Commenters prefer this be accomplished prior to leasing.

Concerns for Lack of Baseline Data – Commenters expressed concerns over the lack of environmental baseline data for local air quality and visibility. Commenters prefer this be accomplished prior to leasing.

### **Response**

While BLM is able to estimate the types of potential emissions and related impacts associated with oil and gas development activities, and can assume that a minimum level of development will occur on a given lease, we cannot foresee with reasonable certainty specific geographical locations of well pads and equipment, temporal variance in potential development, and specific equipment configurations and specifications for either individual lease parcels or the ‘sale’ as a whole. The effects of what is potentially an infinite number of scenarios for development are too complex to analyze accurately at the leasing stage of the oil and gas resource development life cycle. The BLM considers the following when determining an appropriate overall project level analysis for oil and gas development activities:

- Existing air quality conditions;
- Magnitude of potential air emissions from the project or activity;
- Magnitude of existing emission sources in the area;
- Proximity to a federally mandated Class I area, sensitive Class II area (as identified on a case-by-case basis by Colorado Department of Public Health and Environment or federal land management or Tribal agencies), an area expected to exceed a National Ambient Air Quality Standard or PSD increment, population centers, non-attainment or maintenance areas; Meteorological or geographic conditions;
- Project duration; and
- Issues identified during project scoping.

An appropriate analysis in consideration of the items above can only be made when the actual location (proximity to receptors), project specific elements that generate emissions, and the timing are known. An accurate analysis can be performed as part of the National Environmental Policy Act (NEPA) analysis at the development stage, when a project proponent initiates a specific development proposal through an Application for Permit to Drill (APD). Once an APD is received BLM has the authority under 43 CFR 3162.3-1(d)(4) to request any information necessary to conduct, or to require, an appropriate air analysis. Further, while leasing does convey a right to develop the resource, it does not imply or permit an operator to do so in a manner that does not conform to Federal Land Policy Management Act (FLPMA), CAA, or other applicable requirements. Conditions of Approval (COA(s)) will be added to APD approvals to ensure air resource impacts are appropriately mitigated.

### **Air Resources - Climate**

Total Number of Submissions: 6

Total Number of Comments: 13

### **Summary**

General Development Concerns – Commenters expressed concerns for increased traffic, general environmental degradation, and impacts to quality of life as a result of increase GHG emissions and the 'footprint' associated with increased development.

Criticism for Lack of a Full Analysis Prior to Lease Sale – Commenters expressed concerns that BLM is negligent for not fully analyzing potential climate change impacts from the leasing action. Commenters prefer this to be accomplished prior to leasing.

Defer/Postpone Lease Sales – Commenters expressed concern that BLM cannot make an informed decision without an appropriate climate change analysis, and suggest postponing the lease sale until such time that an applicable and appropriate analysis can be made.

### **Response**

The environmental effects section of the proposed action provides adequate disclosure of the state of the science for prediction of climate impacts from an individual project. Please see the

cumulative impacts section for a disclosure of locally occurring, and likely to continue, climate impacts resulting from global concentrations of GHGs and continued land use changes.

### **Air Quality-Process**

Total Number of Submissions: 4

Total Number of Comments: 6

### **Summary**

Lack of Future Analysis Disclosure Concerns – Commenters recommended BLM disclose how it will consider and analyze the potential effects of authorized activities on air resources as part of this planning and decision making process for these leases.

Regional Haze and Class I Area Impact Concerns – Commenters expressed concerns for a lack of analysis that considered Regional Haze, as well as impacts to several surrounding Class I areas, such as the Black Canyon of the Gunnison and West Elk Wilderness Areas .

Monitoring Concerns – Commenters suggest BLM should consider lease stipulations for requiring additional monitoring within lease areas.

### **Response**

BLM Colorado is shifting to a proactive/adaptive management air resource management strategy, and is finalizing the initial draft of an Air Resources Management Plan (ARMP) that will serve as a template guide for how BLM will protect air resources. The ARMP is part of an overall strategy for interagency collaborative air resource management that includes a multipronged approach for monitoring, analyzing (including air modeling), and collaborating on potentially multi-jurisdictional air quality issues. The comprehensive ARMP will provide NEPA monitoring consistent with 40 CFR 1505.2(c) and contains the following programmatic elements:

- Establish analysis levels - that when exceeded, require BLM to complete additional analysis.
  - Mass Emissions thresholds .
  - Monitored Concentration, Visibility, and Deposition thresholds.
  - Production Metrics (throughput, compression, drilling rates, etc... ).
- Require Project Specific Analysis – To be considered on a case-by-case basis that would take the following into consideration to determine the need:
  - Magnitude of potential air emissions from the project or activity;
  - Magnitude of existing emission sources in the area;
  - Proximity to a federally mandated Class I area, sensitive Class II area (as identified on a case-by-case basis by CDPHE or federal land management or Tribal agencies), an area expected to exceed a NAAQS or PDS increment, population centers, non-attainment or maintenance areas;
  - Meteorological or geographic conditions;
  - Project duration; or
  - Issues identified during project scoping.

- Emissions Tracking - The BLM will compile emissions inventories for annual reviews for significant BLM authorized activities to determine if the mass emissions thresholds described above have been exceeded.
- Air Monitoring – Continue to collaborate with multi-jurisdictional federal and state agencies to sustain effective air monitoring networks where appropriate.

### **Air Quality-Health**

Total Number of Submissions: 6

Total Number of Comments: 6

#### **Summary**

Health Related / Toxicological Concerns Specific to VOC Emissions – Commenters expressed concerns that potential VOC emissions within the North Fork Valley require more substantial analysis including quantity and characterization to determine what if any potential health hazards associated with exposure to these compounds exist. Commenters want BLM to evaluate Oil and Gas VOC emissions cumulatively with the area's coal mine methane emissions to determine significance. Commenters expressed concern that the analysis should consider potential impacts to agricultural concerns such as organic farming (including potential pollinator species impacts) and livestock impacts related to VOC emissions and potential ground level ozone formation resulting from atmospheric photochemical reactions.

#### **Response**

A typical air quality analysis does not specifically address potential impacts on individual sectors of the economy, such as organic farming, or specific fauna and flora, based on any available corresponding risk indices associated with a particular level of air contaminants from a project or on a cumulative basis. An appropriate air analysis may, however, include comparisons to the NAAQS and select Air Quality Related Values (AQRV) that are designed and set to alleviate many of these concerns.

The BLM does not have scientific expertise in industrial hygiene to conduct risk assessments for potential human health hazards associated with exposure to known or potentially toxic agents resulting from lease exploration and development. Further, the BLM has no mandate to conduct such science and thus staff could only rely on available data from others to evaluate such impacts. Additionally, the available data are somewhat limited and not easily adapted to the NEPA process. For example, the existing research has been conducted in a variety of contexts, including exposure to chemicals associated with consumer products, occupational settings, or specific contaminated sites, assessments of highly-exposed individuals and estimates across an exposed population (i.e., probabilistic risk assessment). The specific circumstances of each study make it difficult to establish a reasonable basis from which to draw definitive conclusions about the significance of potential exposures associated with lease exploration and development.

Many of the potential HAPs are VOCs that undergo photochemical reactions in the atmosphere

to form ozone. Ozone transport, transformation, and fate would be important factors to consider in any regional exposure analysis, but difficult to assess. For these reasons, BLM does not conduct regional assessments for potential exposure risks.

However, cancer risk assessments for certain pollutants can be done where specific information about release rates, duration, and receptor distance can be established. BLM has done such assessments in the past from single stationary sources, and could consider providing a representative analysis for proposed development at the APD approval stage if the circumstances of such development warrant further assessment. Circumstances that might warrant a cancer risk assessment are those where significant quantities of the target pollutants may be emitted for sustained periods of time and the potential exposure of known receptors to such pollutants is equally sustained.

### **Access**

Total Number of Submissions: 4

Total Number of Comments: 4

### **Summary**

The BLM should analyze the existence and adequacy of road infrastructure to accommodate commercial and emergency vehicles. Potential interruption of existing access routes should be minimized.

### **Response**

See section 3.3.19 of Environmental Assessment (EA) for analysis of Access. Access routes, including the adequacy of existing routes, and potential interruption to existing routes would be addressed at the APD stage.

### **Cultural Resources**

No comments are associated with this issue.

### **Sacred Ground**

No comments are associated with this issue.

### **Cumulative Impacts**

Total Number of Submissions: 20

Total Number of Comments: 25

### **Summary**

The analysis of cumulative impacts is not adequately addressed in this Environmental Assessment. Relying on the existing analysis and assumptions of the Resource Management Plan is not sufficient to support leasing and future development. The leasing stage, not the

development stage, is the appropriate time to analyze cumulative impacts. The current analysis does not address existing mineral leases/development or reasonable foreseeable development including the Bull Mountain Master Development Plan proposal or recent coal activity.

Cumulative analysis of air, economics, realty and geography are not adequate and do not address current conditions. In particular, economics analysis should rely on more recent data and statistics to support analysis. The Plateau Valley area is inaccurately included as part of the analysis area for cumulative impacts.

### **Response**

The BLM reviewed the cumulative effects analysis presented in the Uncompahgre Basin Resource Area RMP (BLM 1989) to determine if it is still adequate. The cumulative effects analysis relies upon information about reasonably foreseeable impacts associated with potential future development of the leases, as well as information compiled in the Uncompahgre Basin Resource Area, Resource Management Plan (RMP) (BLM 1989) as appropriate. Cumulative effects associated with oil and gas leasing in the area were analyzed in greater detail in the Proposed Uncompahgre Basin RMP Environmental Impact Statement (BLM, 1988). As a result of public comments, the discussions of past, present, and reasonably foreseeable future actions were updated to include the current status of identified activities, including the Bull Mountain Master Development Plan. Also, inaccurate mention of Plateau Valley was removed.

### **Edit -Grammar, Punctuation, Spelling, Readability**

Total Number of Submissions: 3

Total Number of Comments: 4

### **Summary**

An acronym was not appropriately spelled out in the document and a reference to Plateau Valley in the air quality section is not appropriate.

### **Response**

"Underground Injection Control" was added to follow the reference to (UIC) in section 3.3.27 of the EA to further clarify this acronym.

The reference to "Plateau Valley" was changed to "North Fork Valley" in the cumulative effects section 3.3.1.1 of air quality in the EA.

### **Environmental Justice**

No comments are associated with this issue.

### **Geology and Minerals**

Total Number of Submissions: 13

Total Number of Comments: 15

## **Summary**

The analysis of impacts from oil and gas drilling is not adequately addressed in this EA particularly as it relates to impacts from hydraulic fracturing, the impacts to coal mine operations and abandoned mine collapse from seismic activity associated with drilling, and the overall impacts drilling would have to the already extensive occurrences of geologic hazards in the Northfork valley. The analysis of impacts from oil and gas drilling should be done at the leasing stage not at the development stage. The 1987 Oil and Gas Technical Report and 1989 RMP does not adequately analyze all the environmental impacts from drilling procedures and technology advancements currently in use. The RMP has not taken into consideration the breakdown of steel casing in well bores in our very saline layers of the Mancos shale or the issue that concrete does not adhere well to shale. In the EA, the BLM does not identify and evaluate all historic oil and gas wells within one mile of the nominated parcels.

## **Response**

BLM added a lease notice to parcels adjacent to or overlapping federal coal to protect the coal resource and existing coal mine operations (see UB-10 in EA which states in part, "...under no circumstances will the BLM approve any oil and gas operations that compromise maximum economic coal recovery or the safety of underground mining operations.") Analyzing the interaction among hydraulic fracturing, related seismicity, and any manmade structure such as a coal mine is beyond the scope of the leasing decision in this EA; rather it would be addressed at the APD level.

When considering the breakdown of casing used in drilling operations, operators who are granted a permit to drill and complete a well must abide by the existing Federal regulations (43 CFR Part 3160) and Colorado Oil and Gas Conservation Commission Rules, which include specific requirements that cementing and casing are selected and installed correctly to existing conditions and extended through any fresh water aquifers. In terms of proposals to develop a well within the Mancos shale, there is additional response to comments in section 3.3.6\Soils.

Evaluation of all historic oil and gas wells within one mile of the nominated parcels is a requirement of the operator to disclose when a site-specific proposal to develop a well is submitted to BLM as part of a complete APD.

## **Geology and Minerals -Oil and Gas**

Total Number of Submissions: 5

Total Number of Comments: 8

## **Summary**

There are a variety of issues concerning the way oil and gas activities were incorporated into this environmental analysis. Comments include encouraging the decision maker to lease the parcels while employing tighter restrictions or lease the parcels because they are located within existing federal units to alleviate gaps that could otherwise see additional, possibly unnecessary development infrastructure. Other commenters submitted a private geologic review stating that there is virtually no oil and gas potential beneath a private subdivision, asserted the RFD scenario is out of date, and objected to the fact that the analysis did not include abandoned wells

drilled within one mile of any of the parcels.

### **Response**

The EA addresses Geology and Minerals in section 3.3.27. The analysis of the alternatives in the EA resulted in development of several lease notices (see attachment F) and applied all available stipulations to the leases consistent with the 1989 UBRA RMP. The proposed lease notices are recommended to be applied to the majority of parcels reviewed under either alternative.

Unitization of leases encompassing the federal mineral resource is encouraged by the BLM as it promotes more logical placement of proposed wells with respect to both the available mineral resource and the associated environmental impacts at the surface. This orderly or logical development practice when effectively employed limits excessive environmental impacts from the infrastructure associated with the development activity.

The BLM analyzed a reasonable range of alternatives to determine the conditions under which leasing and eventual development should occur if allowed to proceed. The BLM believes that the protection provided by existing stipulations and available Conditions of Approval would mitigate impacts and protect the resources identified on a given lease when the BLM is provided a site-specific proposal to develop the federal mineral resources by an operator.

The reasonably foreseeable development (RFD) scenario (1987 UBRA Oil and Gas Technical Report) suggests that some level of fluid mineral potential does exist within the boundaries of the proposed leases, this rationale is one of the main components in which the BLM ties to the resource management plan which ultimately designates the management of public resources and is therefore consulted when federal minerals are nominated for lease. In the case of the leases nominated for this sale, the current RMP does not eliminate any of the federal fluid mineral resource potentially available within the proposed lease areas from consideration at this time. The RFD also predicts ten new well pads per year in the entire UBRA including the North Fork Valley. There are currently 124,078 acres leased in the North Fork Valley, the overwhelming majority of which have never been drilled, and are unlikely to be drilled in the foreseeable future. Development of the federal minerals in the Northfork area has seen one drilling season (May-Nov) where a maximum of 5 federal mineral wells were drilled in the past 6 years. In the most recent drilling season of 2012, only 2 federal wells were drilled which more accurately reflects the annual rate of development. Thus still within reason assumed by the 1987 Oil and Gas technical report serving as the current RFD for the Uncompahgre Basin Resource Area. Evaluation of all historic oil and gas wells within one mile of the nominated parcels is a requirement of the operator to disclose when a site-specific proposal to develop a well is submitted to BLM as part of a complete APD.

### **Geology and Minerals - local seismicity**

Total Number of Submissions: 13

Number of Comments: 16

### **Summary**

The EA fails to analyze the direct, indirect and cumulative impacts of leasing on a wide variety

of geologic hazards in the North Fork Valley. The BLM must evaluate geologic faults and seismicity prior to the lease sale. It is suspected that seismic events are linked to deep well injection and hydraulic fracturing associated with oil and gas development. The North Fork Valley includes numerous faults which if moved could impact the entire valley if for instance the Paonia reservoir dam is compromised due to an abnormal increase in seismic activity.

### **Response**

Comments suggesting seismic events are related to deep well injection and hydraulic fracturing in areas around the world that are experiencing similar types of oil and gas activity were considered but found to be non-substantive. The COGCC evaluates proposals to develop or convert wells into injection wells. Hydraulic fracturing of wells and disposal of water in deep water injection wells located in the North Fork area has not been linked to earthquakes in the surrounding area. In addition, analysis of both hydraulic fracturing and injection well seismic activity is beyond the scope of this recommendation to lease federal oil and gas resources because BLM does not know if, or where, operators will propose to drill specific wells. Further, BLM's will conduct additional site-specific NEPA analyses for specific APDs to determine whether drilling particular wells, and associated development patterns, will have any significant impacts to a variety of resources.

### **Fire and Fuels**

Total Number of Submissions: 3

Total Number of Comments: 4

### **Summary**

A BLM plan is necessary for the area in case of wildfire. The susceptibility of the area to wildfire is a reason for withdrawal of the tracts. The EA does not adequately address fire risk or fire hazard in regards to the industrial activities and potential infrastructure. The Proposed Action would introduce flammable structures and materials into the environment that are not now present, thus changing the nature of the existing fuel complex and presenting new challenges to fire fighters when ignitions occur.

### **Response**

The BLM – Uncompahgre Field Office has an existing Fire Management Plan (2008), of which analysis goes beyond the scope of this Environmental Assessment. In addition, there are local and regional Mobilization Guides prepared annually to address wildland fire Response (available online at [http://gacc.nifc.gov/rmcc/dispatch\\_centers/r2mtc/Nav/Publications.html](http://gacc.nifc.gov/rmcc/dispatch_centers/r2mtc/Nav/Publications.html)). The Environmental Assessment addresses the history of wildfires in the area and acknowledges fire is a natural process in these environments (see section 3.3.23. Fire).

The Fire/Environmental Effects/Mitigation section provides mitigation measures to prevent wildland fire ignitions surrounding potential activities and infrastructure. Additional mitigation measures would be assessed upon submission of an APD (Form 3160-3) to the BLM for approval. Fire risks and hazards will be addressed at the APD level.

### **Extend Comment Period**

Total Number of Submissions: 14

Total Number of Comments: 14

### **Summary**

The BLM should extend the comment period for review of the EA so the public may have adequate time to submit meaningful comments. There is far too much information to absorb in such a short time. In addition, there are limitations to the BLM's Commenting system. The commenting system accepts comments from users who have Internet Explorer as their browser; all other browsers can view but cannot submit comments through the system.

### **Response**

On March 7, 2012, the preliminary Environmental Assessment (EA) and unsigned draft FONSI were available for public review online and at the Montrose Public Lands Center. Written comments were accepted through the ePlanning Comments Works system at <http://on.doi.gov/UFOAugustLeaseSale> or by traditional mail submitted to BLM, Uncompahgre Field Office, 2465 S. Townsend Ave., Montrose, CO 81401. Comments were due by Friday, April 6, 2012.

On April 3, 2012, the deadline for providing comments regarding the Bureau of Land Management's preliminary Environmental Assessment was extended from April 6, 2012, to April 20, 2012. In addition, written comments were accepted online at <http://on.doi.gov/UFOAugustLeaseSale>. Other avenues for submitting comments were available including mail to BLM, Uncompahgre Field Office, 2465 S. Townsend Ave., Montrose, CO 81401 or by email to [blm\\_co\\_ufo\\_leasing@blm.gov](mailto:blm_co_ufo_leasing@blm.gov).

### **Floodplains**

Total Number of Submissions: 1

Total Number of Comments: 1

### **Summary**

The BLM is relying on some future date to address impacts to floodplains rather than assessing the impacts in this NEPA document.

### **Response**

Some of the known potential impacts are described in this lease sale environmental assessment (see section 3.3.14). However, a full analysis will not be conducted until a lessee submits an Application for Permit to Drill (APD) (Form 3160-3) to the BLM for approval. A NEPA analysis will be done for each APD and any stipulations needed based on analysis would be attached to the standard lease form. Any applicable mitigation measures may also be applied at that time.

### **Finding Of No Significant Impact (FONSI)**

Total Number of Submissions: 44

Total Number of Comments: 52

### **Summary**

The BLM cannot make a determination of a Finding of No Significant Impact due to the significant nature of the impacts from leasing and the public controversy surrounding the proposed action. The FONSI incorrectly states that impacts are not expected to be significant and that there is no controversy. Mitigation cannot render impacts insignificant. Cumulative impacts should lead the BLM to determine that impacts are significant.

The determination in the FONSI was not coordinated with other interested parties and agencies. The scientific controversy surrounding Greenhouse Gases is enough to question the determination of a FONSI.

### **Response**

The FONSI is a document that explains the reasons why an action will not have a significant effect on the human environment and, why, therefore, an EIS will not be required. The FONSI addresses the relevant context and intensity factors found in 40 CFR 1508.27. The degree to which effects are likely to be highly controversial is defined in 40 CFR 1508.27 (b)(4) and controversy in this context means disagreement about the nature of the effects, not expressions of opposition to the proposed action or preference among the alternatives. Due to the unknown development potential in most of the leases, the BLM cannot at this time provide site-specific analysis. When additional information is known about potential development, the BLM will develop site-specific analysis of the impacts and address any needed mitigation. The BLM has analyzed the cumulative impacts of leasing with another set of assumptions in the EIS associated with the 1989 UBRA RMP. This analysis identified the potential impacts of future development of oil and gas across the field office. These two analyses disclose the potential impacts associated with leasing and potential development of the lease parcels, however, the precise impacts of any development remain speculative.

### **Forests**

No comments are associated with this issue.

### **Health**

Total Number of Submissions: 12

Total Number of Comments: 13

### **Summary**

BLM must analyze the impacts of drilling and fracturing because these activities pose a threat to human health. Transport of fracturing fluids and the process of hydraulic fracturing is a threat to human health. At the surface, hydraulic fracturing produces Benzene, Toluene, Ethylbenzene, Xylenes and ground level ozone which results in a major threat to human health.

### **Response**

Regardless of the activity, exposure to air pollutant concentrations greater than the National Ambient Air Quality Standards (NAAQS) has been shown to have a detrimental impact on human health and the environment. The EPA has delegated regulation of air quality under the federal Clean Air Act to the State of Colorado. The Colorado Department of Public Health and Environment (CDPHE), Air Pollution Control Division (APCD) administers Colorado's air quality control programs and is responsible for issuing permits for emission sources. The State has established the Colorado Ambient Air Quality Standards (CAAQS), which can be more, but not less stringent than the NAAQS. In addition to the criteria pollutants, regulations also exist to control the release of hazardous air pollutants (HAPs). HAPs are chemicals that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects. The mitigation portion of section 3.3.1.1 Air Quality, explains that although COAs cannot take away lease rights or prevent development, they can provide defensible assurances that air quality violations, and unacceptable impacts to Air Quality Related Values (AQRVs) will not occur. And, when analyzing the proposal to develop the resources, an appropriate air analysis would include comparisons to the NAAQS and select Air Quality Related Values (AQRV) that are designed and set to alleviate many of the commentors concerns.

In addition, analyzing the potential effects of hydraulic fracturing, related to human health is beyond the scope of the leasing decision analyzed in this EA because BLM does not know if, or where, operators will propose to drill specific wells. BLM's site specific NEPA analyses for specific APDs will determine whether drilling particular wells and associated development patterns, will have any significant impacts to resources that could impact human health and the environment.

### **Hydraulic Fracturing**

Total Number of Submissions: 25

Total Number of Comments: 26

### **Summary**

Impacts to all resources from horizontal hydraulic fracturing were not analyzed in the EA nor the 1989 RMP. Effects from hydraulic fracturing methods were not disclosed in the EA. The analysis in the EA regarding hydraulic fracturing does not disclose geologic hazards such as faults, and the potential for drilling, fracturing and disposal into water disposal wells to encourage unnatural seismic events and accelerate potential for additional movement where geologic hazards occur in the north fork valley. There is insufficient data regarding the environmental risks associated with fracking methods, which the BLM did not investigate in this EA. Analysis of fracturing should include all the chemicals and their effects to the human environment in this EA, once exposure occurs, there is no way to stop the damage.

### **Response**

Analyzing the potential effects of hydraulic fracturing, related to faults and/or geologic hazards is beyond the scope of the leasing decision analyzed in this EA because BLM does not know if, or where, operators will propose to drill specific wells. BLM's site specific NEPA analyses for

specific APDs will determine whether drilling particular wells and associated development patterns, will have any significant geologic impacts.

### **Hydraulic Fracturing -Water Resources**

Total Number of Submissions: 39

Total Number of Comments: 41

#### **Summary**

Hydraulic Fracturing (fracking) is a relatively new technology that has yet to be fully analyzed in any BLM NEPA documents. There are numerous cases where contamination from fracking is evident. Not only does fracking contaminate ground and surface water but it also could deplete the irrigation water that the North Fork depends on for agriculture. Allowing fracking to occur in close proximity to public water supplies could contaminate water supplies due to the permeability of distribution lines. Also, the seismic activity associated with fracking could destroy the irrigation systems and coal mines.

#### **Response**

Section 3.3.15/Groundwater/Mitigation/LN-18 provides mitigation measures to prevent contamination of groundwater in concert with the existing Federal regulations (43 CFR Part 3160). In addition, the Colorado Oil and Gas Conservation Commission Rules require design standards for hydraulic fracturing to prevent contamination, including protective casing programs and design standards to ensure well integrity. The BLM may also require operators to move wells up to 200 meters to prevent impacts to any resources.

Oil and gas operators can purchase water from willing sellers if there is water available and must use the same water court system as any other citizen if they seek to acquire water rights. Much of the water used in the hydraulic fracturing process is recycled water produced from other wells.

Setback distances would be required near any public water supply infrastructure, irrigation systems or coal mines to prevent impacts to those resources. A complete site-specific analysis of impacts would be completed at the Application for Permit to Drill (APD) stage. A lessee must submit an APD (Form 3160-3) to the BLM for approval and must possess an approved APD (i.e. a drilling permit) prior to any surface disturbance in preparation for drilling. A NEPA analysis will be done for each APD or group of APDs and any stipulations attached to the standard lease form must be complied with before an APD may be approved.

### **Hydraulic Fracturing -Coal Mine Areas**

Total Number of Submissions: 3

Total Number of Comments: 3

#### **Summary**

The analysis of impacts is not adequately addressed in this EA related to hydraulic fracturing and the potentially related seismic activity on coal mine operations.

**Response**

BLM added a stipulation to parcels adjacent to or overlapping federal coal to protect the coal resource and existing coal mine operations (see UB-10 in EA which states in part, "...under no circumstances will the BLM approve any oil and gas operations that compromise maximum economic coal recovery or the safety of underground mining operations." Analyzing the interaction among hydraulic fracturing, related seismicity, and any manmade structure such as a coal mine is beyond the scope of the leasing decision of this EA; rather it would be addressed at the APD level.

**Invasive Species Including Non-native and Pest Species**

No comments are associated with this issue.

**Lands and Realty**

Total Number of Submissions: 3

Total Number of Comments: 3

**Summary**

The BLM should add lease stipulations to the proposed leases to protect Western's transmission powerlines and access routes.

**Response**

UFO Lease Notice-21 (BLM Authorized Facilities) will be attached to all affected lease parcels in the sale. Specific concerns associated with Western's transmission powerlines and access routes will be considered at the APD level. Additionally, BLM has the authority to move well locations up to 200 meters and apply necessary mitigation if analysis warrants.

**Native American Religious Concerns**

No comments are associated with this issue.

**NEPA -Adequacy of Analysis**

Total Number of Submissions: 36

Total Number of Comments: 53

**Summary**

The BLM has not adequately addressed the requirements of NEPA and has failed to take a "hard look" at the proposed actions impacts. The EA cannot claim that there are no impacts from leasing and put off analysis until the APD stage. The EA fails to address impacts to adjoining parcels, irretrievable commitment of resources, unavoidable adverse impacts, short-term use versus long term productivity and effectiveness of the proposed mitigation measures. The EA did not adequately address scoping comments and ignores the impacts on people in the community.

**Response**

The BLM adequately analyzed the potential impacts of leasing for oil and gas and to determine whether impacts are expected to be significant. The BLM developed three alternatives as part of the NEPA process:

- The proposed action,
- The preferred alternative, and
- The no action alternative.

While the leasing of BLM land for oil and gas has no direct impacts, the BLM addressed the reasonably foreseeable potential impacts of future development of these parcels. This involved making assumptions about the type and scale of development, which allowed the BLM to address the potential indirect impacts from leasing these parcels. Due to the unknown development potential in most of the leases, the BLM cannot at this time provide site-specific analysis. When additional information is known about potential development, the BLM will develop site-specific analysis of the impacts and address any needed mitigation. This information is typically available following filing an application for a permit to drill (APD). Environmental effects and proposed mitigation for the proposed action and alternatives are addressed in Chapter 3 of the EA. These include identification of potential impacts to surrounding communities and parcels. The BLM used scoping comments to identify and narrow issues to be analyzed in the EA, and as a source of information for the analysis. The BLM has also narrowed the preferred alternative based on issues raised in comments. The results of public participation are described in Chapter 4.0 of the EA. Also, the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity, and any irreversible or irretrievable commitments of resources that would be involved in the proposal if it is implemented (40 CFR 1502.16) are elements to be addressed in an EIS.

## **NEPA -EIS**

Total Number of Submissions: 65

Total Number of Comments: 76

## **Summary**

Given the magnitude of the proposed action and impacts to the communities of the North Fork Valley that this lease sale will create, the BLM must prepare a site-specific EIS to disclose the significant impacts before the proposed lease sale can proceed. A true NEPA hard look analysis is required before the BLM can proceed with the lease sale, and must include the preparation of a comprehensive EIS incorporating all past, present and reasonably foreseeable future impacts from mineral development projects in the North Fork Valley area. Currently, the only NEPA analyses prepared for this lease sale are the EA and RMP documents, which do not constitute adequate consideration of reasonably foreseeable post-leasing development. The stipulations and lease notices considered in the EA would not reduce impacts to a level of insignificance. There are new technologies associated with extracting oil and gas that would result in significant effects from this action and are not considered in an EIS. Therefore tiering to the outdated RMP-EIS cannot provide the necessary analysis to support a FONSI for the individual action. The BLM has no choice but to fully investigate the cumulative impacts that would result from this lease sale, something that must be done in an EIS.

## **Response**

The BLM prepared an Environmental Analysis (DOI-BLM-CO-S050-2012-0009-EA) to analyze the potential impacts of leasing for oil and gas and to determine whether impacts are expected to be significant. The BLM developed three alternatives as part of the NEPA process:

- The proposed action,
- The preferred alternative, and
- The no action alternative.

While the leasing of BLM land for oil and gas has no direct impacts, the BLM addressed the reasonably foreseeable potential impacts of future development of these parcels. This involved making assumptions about the type and scale of development. Due to the unknown development potential in most of the leases, the BLM cannot at this time provide site-specific analysis. When additional information is known about potential development, the BLM will develop site-specific analysis of the impacts and address any needed mitigation. The BLM has analyzed the cumulative impacts of leasing with another set of assumptions in the EIS associated with the UFO RMP. This analysis identified the potential impacts of future development of oil and gas across the Field Office. These two analyses disclose the potential impacts associated with leasing and potential development of the lease parcels, however, the precise impacts of development remain speculative. The BLM further narrowed its preferred alternative in response to information received during public comment in order to address potentially significant impacts. Based on this analysis, the BLM determined that the impacts of leasing will not be significant.

## **Noise**

Total Number of Submissions: 10

Total Number of Comments: 10

## **Summary**

The noise levels caused by oil and gas activity should be analyzed in this EA rather than analyzed when exploration and development is proposed and applications for permit to drill are submitted. Use of existing rural roads by industrial traffic would displace wildlife and increase the ambient noise levels above what they are now to the dwellings and residences along rural roads. Assumption in the current analysis that characterizes noise levels as being low to moderate is an understatement.

## **Response**

Section 3.3.24 of EA analyses potential effects related to noise concerns. Lease Notice - 07 addresses concerns regarding excessive noise effects.

## **Paleontological**

No comments are associated with this issue.

## **Process and Procedure**

Total Number of Submissions: 23

Total Number of Comments: 31

### **Summary**

The BLM needs to address all impacts at the leasing stage because the leaseholder is then given the right to develop, and an irretrievable commitment of resources has occurred. The stipulation and lease notices developed are not strong enough to protect resources and should have been reviewed and amended consistent with IM-2010-117 on leasing reform. These stipulations in the EA should have been reviewed by the IDCR team as related in the IM. The BLM should have done a Master Leasing Plan for the North Fork. The BLM should have had a public hearing for the lease sale EA. Public comments were not adequately addressed at the scoping stage.

### **Response**

The Environmental Assessment was prepared in accordance with WO-IM-2010-117 to analyze leasing of twenty-two nominated parcels. It serves to verify conformance with the approved land use plan, provides the rationale for deferring or dropping parcels from a lease sale, and provides rationale for attaching lease stipulations to specific parcels. Each lease would be issued subject to stipulations identified in the 1989 UBRA RMP. Also, if situations or conditions are known to exist that could affect lease operations, a lease notice may be applied. Several lease notices were developed as a result of the proposed action and applied to the majority of parcels reviewed under the alternatives.

The BLM analyzed a reasonable range of alternatives to determine the conditions under which leasing and eventual development should occur if allowed to proceed. The BLM IDCR team determined that existing stipulations and the additional lease notices that highlight the potential conditions of approval that are available to mitigate impacts are sufficient to protect the resources identified in the proposed leased areas.

In accordance with WO-IM-2010-117 a Master Lease Plan (MLP) must be prepared when:

- 1) A substantial portion of the area to be analyzed in the MLP is not currently leased;
- 2) There is a majority Federal mineral interest;
- 3) The oil and gas industry has expressed a specific interest in leasing and there is a moderate or high potential for oil and gas confirmed by the discovery of oil and gas in the general area; and,
- 4) Additional analysis or information is needed to address likely resource or cumulative impacts if oil and gas development were to occur where there are:
  - Multiple use or natural/cultural resource conflicts;
  - Impacts to air quality; impacts on the resources or values of any unit of the National Park System, national wildlife refuge, or National Forest wilderness area, as determined after consultation or coordination with the NPS, the FWS, or the FS; or,
  - Impacts on other specially designated areas. The BLM prepared an Environmental Analysis to analyze the potential impacts of leasing for oil and gas and to determine whether impacts are expected to be significant.

The development potential in the proposed parcels is unknown. BLM made assumptions in the EA about the type and scale of development, which allowed the BLM to address the potential indirect impacts from leasing these parcels. The analysis in an MLP is generally done for an area that meets the aforementioned criteria and would be based on a larger scale of analysis.

The BLM used scoping comments to identify and narrow issues to be analyzed in the EA, and as a source of information for use in the analysis. The BLM has also narrowed the preferred alternative based on issues raised in comments. The BLM has carefully considered public input and believes that the methods used were sufficient to identify and refine issues and analysis for the proposed action and alternatives.

### **Range Management**

Total Number of Submissions: 2

Total Number of Comments: 4

### **Summary**

In Summary the comments deal with the sustainability of the agricultural community, especially when the community is dependent upon public land grazing. The comment from the West Elk Livestock Association contends livestock grazing is not as detrimental as oil and gas drilling and has ecological positive effects when livestock grazing is practiced in a holistic manner that promotes a sustainable ecosystem in all facets. In addition, the longevity and genetic sustainability of Black Welsh Mountain Sheep in North America was brought forward.

### **Response**

In all aspects the action of leasing oil and gas parcels does not have an effect on the sustainability of agriculture. In the future if an application to drill (APD) is received then an environmental analysis will be completed and mitigation measures will be applied to address environmental concerns including those associated with livestock grazing and agriculture sustainability. An example of mitigation measure could be fencing all gas pads and pits to reduce or eliminate contact with livestock, looking at storm water retention to protect water sources or the piling of topsoil and the treatment of noxious weeds.

### **Recreation**

Total Number of Submissions: 16

Total Number of Comments: 25

### **Summary**

The EA did not adequately address direct, indirect, and cumulative impacts of leasing on a wide variety of recreational uses such as biking (road and mountain), hiking, camping, hunting, fishing, walking, jogging, horseback riding, cross country skiing, snowmobiling, swimming, boating, wildlife viewing and ATV riding. The BLM has not thoroughly analyzed the impacts (short or long term) on the area's outstanding deer and Rocky Mountain elk hunting, North Fork's fishing, road biking along the Scenic Byway, and the public lands surrounding the communities that are highly valued for their recreational uses such as the Paonia Reservoir

Recreation Area, Young's Peak, Jumbo Mountain, confluence of the Gunnison River, and Black Canyon National Park. The EA ignores the fact that leasing is an irretrievable commitment of resources and multiple recreation uses are incompatible with drilling activities in any form. The BLM has not thoroughly analyzed each parcel's recreation qualities and should provide adequate stipulations to address impacts to recreation before approving any leases. More adequate analysis should lead to deferrals of parcels due to the impacts to popular recreation sites and other recreation opportunities.

### **Response**

Portions of parcels 6190, 6205, and 6193 were deferred due to potential unknown impacts on future planning proposals for a Jumbo Mountain Special Recreation Management Area. Additional analysis of impacts to recreation opportunities and sites would be completed at the APD stage prior to surface impacts. These would include impacts to adjacent recreation areas, traffic and other impacts to varied recreation uses. Should impacts to recreation be determined at this stage, additional mitigation measures may be designed to reduce site-specific impacts. The EA addressed the potential impacts and associated indirect effects of future development of these leases to the extent feasible at this time (see sections 3.3.11. Terrestrial, Wildlife, 3.3.12. Aquatic, Wildlife, 3.3.19. Access, 3.3.20. Transportation, 3.3.25. Recreation, and 3.3.26. Visual Resources). Additions have been made to 3.3.25. Recreation section under the Affected Environment and Cumulative Effects to address recreation areas adjacent to the nominated parcels.

### **Rights of Way**

No comments are associated with this issue.

### **RMP**

Total Number of Submissions: 103

Total Number of Comments: 133

### **Summary**

The BLM cannot properly tier this lease sale EA to the 1989 UBRA RMP. The 1989 RMP, accompanying EIS, and technical report for oil and gas does not 1) analyze the significant site-specific impacts of oil and gas development and leasing on the North Fork's resource values, including organic agriculture and agri-tourism 2) does not contain sufficient measures to prevent, minimize and mitigate significant impacts 3) does not consider current industry extraction technologies – specifically the use of hydraulic fracturing. These parcels must be deferred until the 1989 plan revision is complete in order to provide the adequate NEPA analysis and resource protection measures.

### **Response**

The EA adequately tiered to the 1989 UBRA RMP to address the potential cumulative impacts of oil and gas leasing and development to the extent reasonably foreseeable at this time. While the site-specific or technology-specific direct impacts of leasing and development were not addressed in the North Fork area in the RMP and associated EIS, the EA discloses the potential

impacts of leasing and potential development in this area to the extent reasonably foreseeable. When further information is known about the type and scale of potential development in the North Fork area, including the use of completion technologies, additional site-specific NEPA analysis will be completed to address these impacts. Based on analysis in the RMP concerning the potential significant impacts associated with the oil and gas development, the UFO has attached stipulations identified in the RMP shown to mitigate these impacts. The BLM has also narrowed its preferred alternative to further address potential significant impacts. Finally, the BLM has identified potential mitigation measures that can be applied at the site-specific level should future analysis identify potential significant impacts. These are highlighted in the attached Lease Notices and the associated analysis. The BLM has the discretion to modify surface operations to change or add specific mitigation measures when supported by scientific analysis. All mitigation/conservation measures not already required, as stipulations, would be analyzed in a site-specific NEPA document, and be incorporated, as appropriate, into conditions of approval of the permit, plan of development, and/or other use authorizations.

### **Safety -Crime Rates**

Total Number of Submissions: 5

Total Number of Comments: 5

### **Summary**

In other parts of the country there have been increased crimes due to the influx of transient oil and gas workers. These impacts are a problem for local law enforcement personnel and would be a detrimental social impact. The communities of the North Fork do not want to be a victim of a boom and bust cycle. The BLM must postpone the sale of these parcels until a new RMP is in place to prevent this impact.

### **Response**

BLM projects that a low level of development will occur as a result of this lease sale. The potential for crime rates to increase or decrease as a result of choosing any of the alternatives presented in this EA is purely speculative. The ability for BLM to analyze for such speculation is beyond the scope of the recommendations of this EA on the decision to lease. BLM will however, conduct site specific NEPA analyses for specific APDs in order to determine whether drilling particular wells will have any significant resource impacts. Currently it is unknown if or where operators will propose to drill specific wells and BLM therefore cannot predict specific development patterns, and their resultant effects.

### **Scenic Byways**

Total Number of Submissions: 2

Total Number of Comments: 2

### **Summary**

The EA did not adequately address impacts to the Scenic Byway from increased traffic due to oil and gas development such as risk of accidents and safety concerns.

## **Response**

Portions of parcels 6215, 6216, and 6206 were deferred due to proximity of West Elk scenic byway northwest of County Road 12. The EA addressed the potential impacts of future development of these leases including increased traffic and associated indirect effects to the extent feasible at this time (see sections 3.3.17. Wastes, Hazardous, or Solid, 3.3.19. Access, 3.3.20. Transportation, and 3.3.25. Recreation). Additional site-specific analysis will be done at the APD stage when access needs and associated traffic impacts are known. Mitigations will be addressed as needed at that time.

## **Socioeconomics**

Total Number of Submissions: 64

Total Number of Comments: 88

## **Summary**

The analysis of socio-economic impacts is not adequately addressed in this EA. The demographics of the area have been changing rapidly. The damage done by oil and gas drilling will outweigh any benefits accrued. The analysis of socio-economic effects must be done at the leasing stage, not the APD stage. There will be a negative impact from the increased stresses on public services (traffic, schools, police, fire, ambulance, healthcare, etc.) The negative impacts to the community will be long-term, even if the physical impacts to the environment are short-term. The current RMP for Uncompahgre (1989) does not include the recent economic developments of the region, especially the rise in tourism, organic agriculture, and popularity for retirees. The quality of life and environmental benefits of living in the North Fork Valley would be severely degraded by oil and gas leasing. The Socioeconomic Baseline Assessment Report (2010) was not used in the creation of this EA. There will be negative social effects due to an increase in greenhouse gas emissions as a result of an increase in oil and gas leasing. The EA requires a more rigorous valuation of ecosystem services in the region. The area of influence used for the analysis should have contained the surrounding cities of Delta, Montrose, Grand Junction, etc. as they are connected to the North Fork Valley as a regional unit.

## **Response**

BLM expects that this lease sale will result in a low level development. The reasonably foreseeable development scenario (1987 UBRA Oil and Gas Technical Report) predicts ten new well pads per year in the entire UBRA including the North Fork Valley. There are currently 124,078 acres leased in the North Fork Valley, the overwhelming majority of which have never been drilled, and are unlikely to be drilled in the foreseeable future. BLM does not know how many of the proposed leases will be purchased, nor how many APDs if any, will be submitted for each of the leases. Without this information, BLM cannot determine quantifiable socioeconomic effects. If leases are purchased and operators submit APDs, then the applicable stipulations and available conditions of approval would reduce any potentially negative effects on the social and economic values of local residents. In addition, BLM's site specific NEPA analyses for specific APDs will determine whether drilling particular wells will have any significant impacts. Currently it is unknown if or where operators will propose to drill specific wells and BLM therefore cannot predict specific development patterns, and their resultant effects.

The Socioeconomic Baseline Report (2010) has been incorporated into the EA. The area of influence for the analysis was the immediately adjacent communities of the North Fork Valley, as these residents would be most affected by any possible well development. The predicted number of wells resulting from this sale is expected to be low, so the effect on larger, more distant communities in the region is expected to be minimal.

### **Socioeconomics - Agriculture, Organic Farms, Wineries**

Total Number of Submissions: 60

Total Number of Comments: 67

#### **Summary**

The North Fork Valley has developed a thriving agriculture sector which will be severely negatively affected by oil and gas development. Many of the farms produce organic products and will lose a great deal of their marketability from people's perception of the area, even if no accidental spill or large scale pollution occurs. The agricultural sector is dependent on clean air and water which is threatened by oil and gas development. The organic certification of farms would be at risk due to contamination from oil and gas development. The North Fork Valley is a unique agricultural area that grows produce that is difficult, if not impossible, to grow elsewhere in the state.

#### **Response**

BLM expects that this lease sale will result in a low level of development. The reasonably foreseeable development scenario (1987 Oil and Gas Technical Report) predicts ten new well pads per year in the entire UBRA which includes the North Fork Valley. There are currently 124,078 acres leased in the North Fork Valley, the overwhelming majority of which have never been drilled, and are unlikely to be drilled in the foreseeable future. This low level of development is unlikely to affect the general perception of the North Fork Valley as a productive and healthful source of agricultural goods, organic or otherwise. If leases are purchased and operators submit APDs then the applicable stipulations and available conditions of approval would reduce any potentially negative effects on the social and economic values of local residents, including agricultural concerns. According to the affected environment section for air resources, groundwater, and surface water, it is very unlikely that well development will lead to degradation of air or water quality. In addition, BLM's site specific NEPA analyses for specific APDs will determine whether drilling particular wells will have any significant impacts. Currently it is unknown if or where operators will propose to drill specific wells and BLM therefore cannot predict specific development patterns, and their resultant effects.

### **Socioeconomics - Property Values**

Total Number of Submissions: 40

Total Number of Comments: 46

#### **Summary**

Oil and gas development will sharply lower the property values of surrounding homes, farms, and other businesses. Oil and gas drilling, and the resultant loss of environmental quality, will

cause local citizens to move away and disincentives any prospective buyers, further depressing the housing market in the North Fork Valley. Many individual's primary investment is the inherent value of their home or farm, which will be drastically reduced by oil and gas development. A loss of organic status by a farm, due to oil and gas development, will decrease its value to a potential buyer, thus harming the current owner. Any reductions in property values would reduce county tax revenue, which would disrupt local services.

### **Response**

BLM expects that this lease sale will result in a low level of development. The reasonably foreseeable development scenario (1987 Oil and Gas Technical Report) predicts ten new well pads per year in the entire UBRA which includes the North Fork Valley. There are currently 124,078 acres leased in the North Fork Valley, the overwhelming majority of which have never been drilled, and are unlikely to be drilled in the foreseeable future. This low level of development is unlikely to affect the average property value of residences, farms, and other businesses and private property, as explained in the affected environment section for socio-economics. If leases are purchased and operators submit APDs then the applicable stipulations and available conditions of approval would reduce any potentially negative effects on the social and economic values of local residents, including property value concerns. According to the affected environment section for soils, groundwater, and surface water, it is very unlikely that well development will lead to the loss of organic status for local farms. In addition, BLM's site specific NEPA analyses for specific APDs will determine whether drilling particular wells will have any significant impacts. Currently it is unknown if or where operators will propose to drill specific wells and BLM therefore cannot predict specific development patterns, and their resultant effects.

### **Socioeconomics -Proximity to Communities, Schools, Private Land**

Total Number of Submissions: 14

Total Number of Comments: 14

### **Summary**

Many of the proposed parcels are closely neighboring schools and residences, which will impose a large social and economic cost on the community; they should either be removed or at least moved away from populated areas. Some of the parcels are very close to water sources and organic farms, endangering those resources if the well were to have an accident. The close proximity of the parcels to populated areas only worsens the damage to the aesthetic values of the region.

### **Response**

BLM expects that this lease sale will result in a low level of expected development. The reasonably foreseeable development scenario (1987 Oil and Gas Technical Report) predicts ten new well pads per year in the entire UBRA which includes the North Fork Valley. There are currently 124,078 acres leased in the North Fork Valley, the overwhelming majority of which have never been drilled, and are unlikely to be drilled in the foreseeable future. Wells therefore are unlikely to be drilled directly adjacent to municipalities, schools, and private residences. If leases are purchased adjacent to these locations, and operators submit APDs then the applicable

stipulations and available conditions of approval would reduce any potentially negative effects on the social and economic values of local residents. In addition, BLM's site specific NEPA analyses for specific APDs will determine whether drilling particular wells will have any significant impacts. Currently it is unknown if or where operators will propose to drill specific wells and BLM therefore cannot predict specific development patterns, and their resultant effects. Also, as a result of public comments, under the preferred alternative, a portion of parcel #6610 that is located close to a school would be deferred from the lease sale under the preferred alternative.

### **Socioeconomics -Tourism, Agri-Tourism**

Total Number of Submissions: 18

Total Number of Comments: 18

#### **Summary**

Oil and gas development would lead to a decrease in tourism, the amount of which needs to be quantified in the EA. The increase in traffic, noise, and pollution, as well as the decrease in aesthetic value in the region will severely diminish any income based on tourism. Oil and gas development will greatly decrease recreational visitation to the region, thus damaging the local economy, the effects of which must be quantified.

#### **Response**

BLM expects that this lease sale will result in a low level of expected development resulting from this lease sale. The reasonably foreseeable development scenario (1987 Oil and Gas Technical Report) predicts ten new well pads per year in the entire UBRA which includes the North Fork Valley. There are currently 124,078 acres leased in the North Fork Valley, the overwhelming majority of which have never been drilled, and are unlikely to be drilled in the foreseeable future. BLM does not know how many of the proposed leases will be purchased, nor how many APDs, if any, will be submitted for each of the leases. Without this information, BLM cannot determine quantifiable socioeconomic effects. If leases are purchased and operators submit APDs then the applicable stipulations and available conditions of approval would reduce any potentially negative effects on the social and economic values of local residents.

In addition, BLM's site specific NEPA analyses for specific APDs will determine whether drilling particular wells will have any significant impacts. Currently it is unknown if or where operators will propose to drill specific wells and BLM therefore cannot predict specific development patterns, and their resultant effects.

#### **Soil**

Total Number of Submissions: 14

Total Number of Comments: 18

#### **Summary**

The Environmental Assessment doesn't address the impacts to prime and unique soils on farmlands in the North Fork Valley. There are also numerous areas where steep slopes, poor geology and fragile soils exist. These soils contain high levels of salinity and selenium. Irrigation

ditches are likely to be impacted with sediment and possibly completely destroyed.

### **Response**

None of the soils on BLM land may be classified as “prime and unique soils” because they must be irrigated to be eligible. There are 112 irrigated acres in the proposed lease sale parcels that are located on private land and are classified as “prime and unique soils.” The impacts to those soils would be reduced by the mitigation measures in 3.3.6 Soils/Environmental Effects/Mitigation.

Section 3.3.6 Soils/Environmental Effects/Mitigation/Steep slopes, provides mitigation measures to prevent development on slopes greater than 40% and special development measures on slopes between 30-39%. Those measures include locating development away from landslide areas, fragile soils and areas susceptible slumping. Section 3.3.6 Soils/Environmental Effects/Mitigation/CO-34-Endangered Species Act Section 7 Consultation Stipulation, provides measures to prevent the transport of saline/selenium soils to water features.

### **Soil -Erosion, Sediment**

Total Number of Submissions: 3

Total Number of Comments: 3

### **Summary**

Large storm events in last few years as well as the Wake fire in 1994 have left soils susceptible to further erosion and landslides. Cutting new roads and disturbing more areas will only make the situation worse.

### **Response**

3.3.6 Soils/Environmental Effects/Mitigation/Steep slopes, provides the ability to move development away from landslide areas and fragile soils to more appropriate locations. Surface reclamation plans would be required on development with slopes between 30-39%. The plans would provide protective measures such as controlling runoff, protection of off-site areas to prevent accelerating erosion, and restoration of the site upon completion.

### **Soil -Selenium**

Total Number of Submissions: 4

Total Number of Comments: 5

### **Summary**

The BLM needs to more thoroughly analyze the potential impact of increased selenium concentrations on Colorado River fish. There is always the possibility that mitigation and engineering designs fail to prevent increased selenium concentrations in waterbodies. The Gunnison Basin Selenium Task Force specifically identified the parcels that should not be leased due to the high concentrations of selenium.

### **Response**

A lessee must submit an Application for Permit to Drill (APD) (Form 3160-3) to the BLM for review and approval, and must receive a drilling permit before creating any surface disturbance in preparation for drilling. BLM will prepare a site-specific NEPA analysis for each APD, including analysis of selenium transport and potential impacts to Endangered Colorado River Fish. Any applicable stipulations must be complied with before an APD may be approved.

Section 3.3.6 Soils/Environmental Effects/Mitigation/Exhibit CO-34-Endangered Species Act Section 7 Consultation Stipulation, provides measures to prevent the transport of saline/selenium soils to water features and notifies lessees of BLM's statutory obligations under the Endangered Species Act.

### **Soil -Steep Slopes**

Total Number of Submissions: 10

Total Number of Comments: 12

**Summary** Many of the parcels in the preferred alternative still contain steep slopes that could cause numerous problems including erosion, fires and loss of site productivity. Steep slopes should be considered an NSO rather than just a lease notice. Since the lease notice may or may not be placed on an APD, additional parcels with steep slopes and public water supplies should be deferred until they can be enforced as stipulations after completion of the RMP revision. In addition to an NSO on steep slopes >40%, it should also apply to slopes >15% on Mancos shale due to the fragile nature of these soils.

### **Response**

Section 3.3.6 Soils/Environmental Effects/Mitigation/Steep slopes, provides mitigation measures to prevent development on slopes greater than 40% and special development measures on slopes between 30-39%. While the 1989 RMP provides a timing limitation to protect areas with highly erodible and saline soils, it does not contain a "no-surface occupancy" (NSO) stipulation for steep slopes. Therefore, the mitigation measures can only be enforced as a Condition of Approval (COA) at the APD stage. The review of each APD will determine the COAs that will be applied for each site. Rather than prohibiting all activities on Mancos shale slopes greater than 15%, and steep slopes greater than 40%, the BLM may require mitigation measures and best management practices used to control runoff and site disturbance. These measures have proven effective on BLM land and are supported by the scientific literature. Additionally, the preferred alternative has been designed to limit development on parcels where these mitigations measures would not be as effective. In response to public comments, under the preferred alternative, the BLM would defer parcels which express a slope of 40% or greater on 50% or more of the proposed parcel area. See attachment D for complete descriptions of parcels or portions of parcels nominated that would be deferred for steep slopes under the preferred alternative.

### **Special Status Species -Plant**

Total Number of Submissions: 2

Total Number of Comments: 4

## **Summary**

The BLM failed to mention the presence or potential habitat of sensitive plant species on parcels, including Debeque milkvetch, clay-loving wild buckwheat, and Colorado hookless cactus. BLM must evaluate suitability for these species prior to leasing. Many sensitive species are present in all of the proposed lease parcels.

Debeque milkvetch is a BLM G2/S2 species.<sup>62</sup> Rocky Mountain Wild's internal GIS screen indicates that parcels 6189, 6190, 6192, 6193, 6194, 6202, 6203, 6205, and 6207 could contain Debeque milkvetch based on Colorado Natural Heritage Program data. BLM should survey the parcels for Debeque milkvetch to determine whether the species is present.

EA contains no mention or discussion of the possible presence of clay-loving wild buckwheat, despite comments submitted by USFWS of that species possible location in the Planning Area. Although the project area is outside the current known range for clay-loving wild buckwheat and Colorado hookless cactus, potential habitat occurs within the project area. There are reports that clay-loving wild buckwheat historically occurred south of Hotchkiss, Colorado. Parcels should be evaluated for suitability for these species prior to leasing.

## **Response**

Section 3.3.9 of the Environmental Assessment identifies habitat for several BLM sensitive species which could potentially occur in the vicinity of lease parcels (Table 3.11). Based on Colorado Natural Heritage Program data (2011), known occurrences for Debeque milkvetch are located north of the Uncompahgre Field Office boundary and none within the UFO or the North Fork area. Debeque milkvetch is a CNHP G2/S2 species. This is not a BLM ranking. Debeque milkvetch is a BLM sensitive for the Grand Junction and Glenwood Springs Field Offices within the Northwest District, not within the Uncompahgre Field Office or Southwest District. Like many rare plant species, Debeque milkvetch is closely tied to a geologic formation (Atwell member of the Wasatch formation). The proposed parcels do not contain this member of this geologic formation. Parcels 6206, 6211, 6215, 6216, contain Wasatch and Ohio Creek formation. If current knowledge of the range of this species changes in the future, CO-34 on all parcels provides the opportunity to reassess the potential for this species at the APD stage NEPA analysis.

Also, current information from surveys and the Colorado Natural Heritage Program indicate that it is unlikely that clay-loving wild buckwheat or Colorado hookless cactus would be present on the proposed parcels. All parcels would be subject to Exhibit CO-34 to alert the lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal. CO-34 on all parcels provides protections and the opportunity to reassess the potential for these species to be present at the APD stage NEPA analysis.

## **Special Status Species -Fish**

Total Number of Submissions: 3

Total Number of Comments: 3

## **Summary**

The BLM's EA fails to identify presence of four additional Colorado River fish species (Colorado pikeminnow (*Ptychocheilus lucius*), Humpback chub (*Gila cypha*), Bonytail chub (*Gila elegans*), and Razorback sucker (*Xyrauchen texanus*)). Also, presence of greenback cutthroat trout on the Western Slope is new information that has not been analyzed in any of the NEPA documents to which the proposed leasing is tiered. Additional stipulations are recommended for Parcels 6205 and 6207 for Recovery and Conservation Waters for roundtail chub. If these stipulations cannot be added, they recommend deferring these parcels until these stipulations can be incorporated into the RMP. Another commenter voiced concerns for keeping the watershed intact in order to maintain healthy aquatic ecosystems.

### **Response**

In accordance with BLM NEPA Handbook (1790-1), the EA focused on federally listed threatened, endangered or candidate species that potentially could occur or have the potential habitat within the lease parcels. The EA stated that "Federally listed threatened, endangered or candidate species that potentially could occur or have potential habitat in the vicinity of lease parcels include Canada lynx, greenback cutthroat trout, Colorado hookless cactus, and Gunnison sage grouse." The remaining list of special status species includes those not expected within the project area. The following species are currently not known to occur within the planning area: humpback chub (*Gila cypha*), Colorado pikeminnow (*Ptychocheilus lucius*), razorback sucker (*Xyrauchen texanus*), and bonytail chub (*Gila elegans*). Since these species are not expected within the project area, no further discussion of these species follows in the effects section. When BLM reviews an APD, it will confirm whether any of these species, or a new federally listed species, is known to occur within the area. If so, CO-34 provides protections for those species consistent with BLM's statutory obligations under the Endangered Species Act.

As a result of public comments, section 3.3.9 of EA has been edited to clarify which special status species are not known to occur within the project area. To address any new information or the presence of new listed species, the UFO RMP requires clearances and mitigation for special status species before surface-disturbing activities may occur, as explained in the EA. Stipulation CO-34, Lease Notice-16, and Lease Notice-20 are incorporated into the EA to address concerns regarding special status species, including roundtail chub.

Information suggesting the presence of greenback cutthroat trout on the Western Slope may post-date the UFO RMP, however, protections for federally listed species were developed and analyzed in the plan. New genetic research on the distribution of native cutthroat trout species across Colorado by Metcalf et al. appears to indicate that the Uncompahgre Field Offices does not contain any populations of pure Greenback cutthroat trout. The status of native cutthroat trout in the areas affected by this lease sale is uncertain, but they are most likely to be considered Colorado cutthroat trout (BLM Sensitive Species). Existing stipulations will provide protection for these populations as the status of the species is evaluated by USFWS and the scientific community. The UFO RMP requires clearances and mitigation for special status species before surface-disturbing activities may occur. At the APD stage, the BLM would apply protections for Recovery and Conservation Waters for roundtail chub (parcels 6205 and 6207), cutthroat trout (parcels 6206, 6207, 6215 Greenback; 6207, 6215 Colorado), and Colorado Cutthroat trout expansion habitat (parcels 6189-94, 6197-98, 6200, 6206-07, 6215-17) through the

implementation of CO-34, LN-16 and LN-20. LN-16 may require moving surface-disturbing activities up to 200 meters (656 feet) of the ordinary high water mark and may require special engineering design, construction and implementation measures to protect water resources of the aquatic habitat. LN-20 avoids surface occupancy within 200 meters (656 feet) of bank-full stage or within 100 meters of the 100-year floodplain on major river corridors and 300 feet from the edge of ordinary high-water mark of perennial streams. In addition, stipulation CO-34 provides the avenue to determine the correct mitigation and timing restrictions on the proposed activities needed to protect these habitats consistent with the Endangered Species Act.

### **Special Status Species -Wildlife**

Total Number of Submissions: 8

Total Number of Comments: 17

### **Summary**

The BLM does not adequately address the presence of many sensitive species in the area. There are several species not mentioned in the EA, including Mexican spotted owl, yellow-billed cuckoo, black-footed ferret, Gunnison's prairie dog, North American wolverine, humpback chub, Colorado pikeminnow, razorback sucker, bonytail chub, and *Eriogonum pelinophilum*, white-tailed prairie dogs, black-footed ferrets, northern leopard frog. BLM needs to modify existing stipulations or defer parcels containing known or potential habitat for federally listed species until the RMP revision is complete.

It is also recommended that BLM consult in accordance with Section 7 on the proposed action, especially because the potential for increased selenium run-off associated with development could affect rare fish populations. The process that BLM relies on, using general stipulations to protect listed species is inappropriate, and BLM is instead required to comply with ESA Section 7 consultation obligations. Reliance on CO-34 to fulfill BLM's obligations under the ESA does not identify the means to avoid or minimize effects on listed species or habitat, and is not in compliance with ESA section 7 consultation obligations. There were concerns expressed that BLM has not updated information for mapping or assessment of habitat suitability for Canada lynx. Comments recommend that parcels 6197, 6206 and 6211 should be evaluated for suitability and defer leasing these parcels until BLM can determine that leasing and development will not jeopardize the species.

In addition, comments expressed that BLM's EA is inadequate in its analysis of impacts to Gunnison sage-grouse. Parcels 6189, 6190, 6192, 6193, 6194, 6195, 6196, 6197, 6198, 6199, 6200, 6201, 6202, 6203, 6205, 6207 and 6217 contain historic Gunnison Sage-grouse habitat. . The current UFO RMP did not address impacts from oil and gas development on Gunnison sage-grouse. BLM must analyze direct, indirect and cumulative impacts to Gunnison sage grouse local Crawford populations as well as the greater population.

Also, there were concerns expressed that additional lease stipulations must be applied to golden eagle and peregrine falcon active nests and bald eagle winter roost sites in order to avoid violating Bald and Golden Eagle Protection Act. Concerns were raised that oil and gas development would disrupt habitat for golden eagle and "yellow tailed" hawks.

And there was a recommendation that deferring parcels 6189 and 6190 to protect riparian areas is necessary until the RMP is amended in order to adequately protect bald eagles.

There was also a concern that a timing limitation for drilling activities is not adequate to protect active nest sites.

### **Response**

Section 3.3.9 of the Environmental Assessment (EA) addresses the analysis of threatened, endangered and sensitive species. In section 3.3.9, the EA states, "Site-specific biological resource surveys would be required at the APD stage, and depending on the location and nature of the proposed development and results of the surveys, Endangered Species Act Section 7 consultation with USFWS would be required if development would impact Federally listed species." As a result of comments received section 3.3.9., was edited to clarify which species are not known to occur in the project area. Table 3.11 TES1 lists, by parcel, all known or potential special status species that may be impacted by future development activities.

The EA includes a list of potential mitigation measures that could be applied as conditions of approval for future development to protect Special Status, Migratory Bird, and Terrestrial and Aquatic Wildlife species. These measures include timing limitations, completing surveys prior to construction, developing site-specific mitigation plans for impacted species, utilization of remote telemetry equipment and related production equipment on well heads to reduce vehicular traffic and specific mitigations relative to migratory birds. Table 3.12 TES2 (Proposed Action) and 3.13 TES3 (Preferred Alternative) also lists parcels that include lease stipulations for bald eagle winter concentration areas (UB-03), bald eagle winter roost sites (UB-LN14) and raptor nest sites (UB-LN-04). All lease parcels are subject to CO-34 (EA, Attachment F), which provides protections for all threatened, endangered, candidate, or other special status plant or animal species. As described in the EA, site-specific analysis would be conducted at the APD stage to identify and to mitigate potential impacts to special status species. At that time, BLM would fulfill its obligations to consult with USFWS on Federally listed species that may be affected by the future site-specific proposed activity.

In addition, in response to public comments, BLM made the following change in the EA, Environmental Effects, "The proposed action of leasing the proposed parcels has No Effect to any federally listed species or critical habitat, and No Impact to BLM sensitive or migratory bird species." The EA addressed the status of potential sensitive species which could occur, Section 3.3.9 (Threatened, Endangered, and Sensitive Species), states, "That Canada lynx and Gunnison sage-grouse potentially could occur or have potential habitat in the vicinity of lease parcels." BLM made the change to address those not mentioned before. That black-footed ferret is not expected within the project area. Black-footed ferrets are assumed to be extirpated from the entire UFO boundary. Currently in Colorado they are known only at the reintroduction site in Coyote Basin and Wolf Creek in northwestern Colorado. White-tailed prairie dogs are listed in the third paragraph as a BLM sensitive species that may have habitat within the area. Gunnison sage grouse historic habitat was mapped as the best guess of where this species once ranged. Most of this habitat is no longer suitable habitat for Gunnison sage grouse due to changes from

human development and fragmentation in the past. The closest occupied Gunnison sage-grouse habitat to proposed lease parcels is greater than 2.5 miles to the southwest of the project area and separated by private lands. As with other Special Status Species, the act of leasing has no effect on these species, and a more detailed analysis will result at the APD stage (see above explanation). The identification of Gunnison sage grouse as its own species may post-date the UFO RMP, however the BLM Manual for Special Status Species Management (6840) provides policy and guidance for the conservation of BLM special status species and the ecosystems upon which they depend on BLM-administered lands. For the occupied habitat for the Crawford population (all of which is outside the project area to the south), the Gunnison Gorge NCA RMP designated an Area of Critical Environmental Concern and special management for the Gunnison sage grouse.

The bald eagle was once listed as threatened under the Endangered Species Act, but was delisted in 2007 (72 FR 37346 37372). This species is still protected under the Bald and Golden Eagle Protection Act, and is considered a BLM Sensitive Species, and thus is analyzed in the Threatened, Endangered, and Sensitive Species section. Protections have been provided in the EA for bald eagle (UB-03, LN-14 on known locations) and other raptors (LN-04 on all parcels). UB-03 is a timing limitation prohibiting surface use during critical winter periods in CPW mapped winter concentration areas. LN-14 provides protections for the known bald eagle roost and notifies the lessee that activities may be modified to prevent impacts. LN-04 provides protections for raptor nests and notifies the lessee that seasonal constraints may be required to prevent impacts. Details of how these measures will be implemented would be determined at the APD stage. BLM also applied LN-04 to specific parcels, notifying potential lessees that "Raptor surveys are required to be completed using BLM approved methods prior to any ground disturbing activities."

### **Travel and Transportation**

Total Number of Submissions: 28

Total Number of Comments: 29

### **Summary**

The EA did not adequately address impacts from increased traffic due to oil and gas development such as an increase in noise, pollution, risk of accidents and safety concerns, congestion, and road maintenance.

**Response** The EA addressed the potential impacts of future development of these leases including increased traffic and associated indirect effects to the extent feasible at this time (see sections 3.3.1. Air Resources, 3.3.17. Wastes, Hazardous, or Solid, 3.3.19. Access, 3.3.20. Transportation, 3.3.24. Noise, and 3.3.25. Recreation). Additional site-specific analysis will be done at the APD stage when access needs and associated traffic impacts are known. Mitigations will be addressed through site-specific analysis at that time.

### **Vegetation**

Total Number of Submissions: 2

Total Number of Comments: 2

### **Summary**

Much of the North Fork landscape has existing vegetation concerns and issues. Oil and gas exploration and development in the few areas where vegetation is still in good condition will degrade vegetation in these areas as well. Exploration and development in the areas where vegetation is currently degraded has not been adequately analyzed by BLM. Exploration and development which destroys or degrades vegetation will impact other natural values and uses which depend on healthy vegetation.

### **Response**

Leasing the parcels will not directly result in any vegetation destruction or disturbance. Analysis of direct vegetation impacts cannot be adequately addressed until an ADP is filed. At that time, the amount, degree, and location of disturbance would be identified to BLM, at which point vegetation impacts could be more accurately described. As a condition of APD approval, best management practices including weed control and revegetation requirements would be attached as mitigation measures if necessary to protect vegetation health. In addition, well sites may be moved up to 200 meters to avoid disturbing areas with sensitive or intact vegetation. These measures should prevent degradation of the vast majority of vegetation within areas still supporting vegetation in reasonably good condition. Over the long term, these measures are expected to produce healthy plant communities in areas that are disturbed by development activities thereby supporting those natural values and processes that rely on healthy vegetation.

### **Visual Resource Management**

Total Number of Submissions: 13

Total Number of Comments: 14

### **Summary**

The BLM has not thoroughly analyzed the impacts of leasing on visual resources and the scenic landscape within and/or around the nominated parcels, including visual impacts to the West Elk Scenic Byway and local residents' viewsheds. The BLMs management approach is contrary to the existing view shed. The proposed mitigations and lack of restrictions will be ineffective in preserving the scenic vistas. Additional analysis should lead to deferrals of parcels in order to preserve the visual and scenic values for which the valley is known.

### **Response**

Portions of parcels 6215, 6216, and 6206 were deferred due to proximity of West Elk scenic byway northwest of County Road 12. Additional analysis will be done at the site-specific level when an APD is received and development activities are known. Identified impacts to visual resources will be addressed through the mitigation measures discussed in the EA as Conditions of Approval despite the Visual Resource Management classification. The EA addressed the potential impacts and associated indirect effects of future development of these leases to the extent feasible at this time (see sections 3.3.19. Access; 3.3.20. Transportation; 3.3.25. Recreation; and 3.3.26. Visual Resources and Lease Notice 06).

## **Visual Resource Management - Light Pollution**

Total Number of Submissions: 5

Total Number of Comments: 5

### **Summary**

The BLM has not thoroughly analyzed the impacts to light pollution within and/or around the nominated parcels.

### **Response**

Additional analysis will be done at the site-specific level when an APD is received and development activities are known. Identified impacts to visual resources and dark skies will be addressed through the mitigation measures discussed in the EA as Conditions of Approval. The EA addressed the potential impacts and associated indirect effects of future development of these leases to the extent feasible at this time (see sections 3.3.26. Visual Resources and Lease Notice 06).

## **Wastes, Hazardous or Solid**

Total Number of Submissions: 4

Total Number of Comments: 4

### **Summary**

The impacts from the release of toxic chemicals from hydraulic fracturing and other drilling and production operations have not been analyzed. The EA has not addressed the impacts from the release of volatile organic compounds from the produced natural gas, as well as indirect release of noxious gasses from the equipment used to produce and deliver the natural gas. The unsafe demands on truck drivers to deliver hazardous loads of chemicals under unsafe work schedules results in health problems and aberrant social behaviors which stress local health and law enforcement services.

### **Response**

The potential impacts from hydraulic fracturing and other drilling operations are addressed in Section 3.3.15/Groundwater of the EA. All commercial truck drivers are regulated by U.S. Department of Transportation regulations strictly controlling the number of hours they are allowed to drive as well as work-to-rest ratios. Affiliation with a union is not a factor. All commercial truck drivers are expected to adhere to these requirements. The statement that there are no known hazardous or solid wastes present on the lease parcels refers to the current conditions on the properties. The statement that hydraulic fracturing is highly likely on all parcels may be likely. Section 3.3.15 of this Environmental Assessment covers the potential impacts of drilling operations (including hydraulic fracturing) on groundwater. Extensive mitigation is discussed and would be a part of any drilling permits. Air quality impacts are analyzed extensively in Section 3.3.1 of the Environmental Analysis. Included therein is a discussion of BMP's (best management practices) which may be required as mitigation.

## **Water Resources**

Total Number of Submissions: 17

Total Number of Comments: 21

### **Summary**

The BLM has not adequately addressed impacts to water in this EA. Having oil and gas activities in the area will destroy clean water. There are numerous water bodies within 1 mile of the proposed parcels in Gunnison County including Paonia Reservoir. The BLM should be aware there are several literature sources that point out the landslide potential in the area and the State impaired water bodies. The BLM should have baseline water quality data prior to oil and gas development.

### **Response**

Section 3.3.16., Surface Water/Environmental Effects/Mitigation, specifically addressed perennial streams, irrigation ditches, intermittent/ephemeral channels and other water bodies, including 303(d) listed water bodies and existing water quality data. The mitigation measures include buffer setbacks, pitless drilling systems, use of low VOC completions, and collection of baseline water quality data. Section 3.3.6 Soils/Environmental Effects/Mitigation, addresses mitigation measures designed specifically for slumps, landslides and highly erosive soils. The use of best management practices and mitigation is the primary mechanism for maintaining and protecting water quality consistent with the Clean Water Act. Site specific conditions may warrant protective measures such as moving disturbance away from landslide areas and control of surface runoff. Mitigation measures also include baseline water quality monitoring prior to oil and gas development.

### **Water Resources -Domestic Water, Infrastructure**

Total Number of Submissions: 27

Total Number of Comments: 30

### **Summary**

The BLM has ignored the impacts by saying the act of Leasing does not create impacts. Additional water quality sampling will be required to ensure public water supplies aren't contaminated by oil and gas activities. Water quality sampling will only detect a problem after it has occurred but will not fix the problem once a well is contaminated. Water supplies for the Town of Paonia and other public water suppliers should be protected to provide clean water to all of the domestic water users. In addition, private domestic wells could be contaminated.

### **Response**

A lessee must submit an Application for Permit to Drill (APD) (Form 3160-3) to the BLM for review and approval and must receive a drilling permit before creating any surface disturbance in preparation for drilling. BLM will prepare a site-specific NEPA analysis for each APD. Any applicable stipulations must be complied with before an APD may be approved. The Lease Notices described in the EA advise potential lessees that applicable mitigation measures (e.g., conduct additional water sampling) may be applied to the well permit as conditions of approval.

Section 3.3.15/Groundwater/Mitigation specifically addresses domestic wells. The measures

included in this mitigation provide protections against contamination of domestic wells by insuring surface casing is extended through the fresh water aquifer and insuring cementing complies with the existing Federal regulations (43 CFR Part 3160) and Colorado Oil and Gas Conservation Commission Rules. This section is also designed to protect Public Water Suppliers, such as Sunshine Mesa Domestic Water Company and the Town of Paonia's domestic water system. These mitigation measures are intended to prevent the contamination of domestic water by providing buffer distances and design standards. The associated water quality monitoring is to ensure the mitigation measures are effective.

### **Water Resources - Groundwater**

Total Number of Submissions: 14

Total Number of Comments: 20

#### **Summary**

The BLM did not adequately address the effectiveness of mitigation measures responsible to prevent the contamination of water supplies. How will the BLM enforce those mitigation measures unless they are onsite daily? Another great threat to water supplies is the impact to water tables. The BLM should acknowledge the impacts to groundwater they identified necessitate further analysis because the mitigation measures proposed cannot prevent all contamination. Human error can result in spills that no amount of mitigation can prevent. Spills occur regularly in other oil and gas fields in Colorado. Buffer distances for public water supplies should be extended to cover the entire lease sale area and green completions should be better described to prevent the use of any toxic chemicals as described by the EPA. The hydrologic studies and baseline water quality monitoring should be done prior to leasing not after.

#### **Response**

Staff from both the BLM as well as COGCC performs regular and routine enforcement of mitigation measures and regulations. COGCC also relies on the public to report spills when they are found and report any other activities. Section 3.3.15/Groundwater/Mitigation requires hydrologic studies to ensure water supplies are not degraded in volume or quality when drilling may occur near groundwater springs used for water supplies. The mitigation measures in 3.3.15/Groundwater/Mitigation are designed to address the impacts to groundwater. It is possible that not all impacts can be mitigated. Existing Federal regulations (43 CFR Part 3160) and COGCC Rules are designed to help prevent the impact of human error. Buffer distances are based on commonly accepted practices used elsewhere on BLM lands in Colorado. Until the locations of development are known, site specific studies cannot be conducted. Individual springs and wells will require specific hydrogeologic investigations specific to those sites.

### **Water Resources - Public water supplies**

Total Number of Submissions: 13

Total Number of Comments: 13

#### **Summary**

Public water supplies including the Town of Paonia, Hotchkiss, Sunshine Mesa Domestic Water,

and Stucker Mesa Domestic Water and others will be affected by oil and gas activities. The BLM incorrectly stated that there are no public watershed protection measures in place or source water protection plans. The lease notices proposed by the BLM for the protection of public water supplies are only notices and do not have the enforcement of stipulations.

### **Response**

Section 3.3.15/Groundwater/Mitigation, are designed specifically to protect a Public Water Supplier like Hotchkiss and Paonia and prevent development in a designated watershed with a protection plan. Additional mitigation measures would protect those public water providers without a protection plan or designated watershed. Setback distances of up to 1000' and protective measures such as pitless drilling systems within 2640', flowback and stimulation fluids contained within tanks on a well pad, use of low VOC completions, prohibition of evaporative ponds, and collection of baseline water quality data, would be required. Lease notices advise lessees that Conditions of Approval may be applied to well permits when BLM reviews an Application for Permit to Drill (APD). These measures are in addition to those under existing Federal regulations (43 CFR Part 3160) and COGCC Rules. In response to public comments BLM would defer under the preferred alternative portions of parcels that overlapped delineated watersheds for the Town of Paonia and Sunshine Mesa Domestic Water Company. In addition, the EA has been updated to reflect the ordinances passed by the Towns of Paonia and Hotchkiss and the status of their source water protection plans.

### **Water Resources - Surface Water (ditches canals)**

Total Number of Submissions: 41

Total Number of Comments: 46

**Summary** The BLM did not adequately analyze impacts to irrigation water supplies and surface water quality including potential for contamination from spills. Irrigation water supplies are critical to the agricultural viability of the valley. Without a clean water supply many of the organic farmers will go out of business. Contamination is likely to occur at some point. Salinity is already a problem in the valley and extends through the lower basin states to California. It is contradictory for the BLM to contribute more salinity to an existing problem. Large storm events have occurred over the last several years and could wash contaminants into waterways. The mitigations proposed have little ability to mitigate the impacts stated particularly since they have language in them that does not require anything. Any protections provided to public drinking water supplies should also be provided to irrigation water supplies since a spill could threaten food supplies before it was even reported.

### **Response**

Section 3.3.16/Surface Water/Water Rights, describes each of the irrigation ditch companies and the parcels on which oil and gas development could impact the quantity of the ditch companies' water supplies. Spills and their impact on irrigation ditches were not specifically addressed because, as accidents, the timing and location of their occurrence is speculative. The 1989 Uncompahgre Basin RMP addressed accidental fluid discharges and the potential to contaminate surface water.

3.3.16/Surface Water/Mitigation/LN-20/Protection of Surface Waters within the lease area,

provides a list of mitigation measures including buffer distances as well as design criteria such as pitless drilling systems, flowback and stimulation fluids contained within tanks on a well pad, use of low VOC completions, prohibition of evaporative ponds, and collection of baseline water quality data, that would be required to protect irrigation water supplies. These measures are in addition to those under existing Federal regulations (43 CFR Part 3160) and COGCC Rules. These measures would also prevent sediment and salt delivery to water bodies. COGCC requires all structures be designed for the 100 year storm event. The chance of exceeding the 100 year event in any one year is 1%. All storm flows are directed away from storage facilities and the facilities must maintain sufficient freeboard to contain the 100 year event. Extreme events can occur in any given year and could cause damaging impacts. The mitigation measures proposed are widely used and accepted elsewhere on BLM lands in Colorado. The proposed lease notice would give less notice of potential Conditions of Approval that may be applied to well permits at the APD Stage.

### **Water Resources -Quantity**

Total Number of Submissions: 4

Total Number of Comments: 4

#### **Summary**

Water depletions are discussed but there doesn't appear to be any mitigation to address the depletions. Groundwater depletions are not adequately addressed but could dramatically affect the North Fork Valley. The BLM must estimate a range of expected water withdrawals from the lease sale area.

#### **Response**

Water Quantity is addressed in section 3.3.16/Surface Water/Water Rights. The Programmatic Biological Assessment prepared by the US Fish and Wildlife estimates the water depletion of each well at 1.2 acre-feet. Oil and Gas operators can purchase water from willing sellers if there is water available. Operators must use the same water court system as any other citizen if they seek to acquire water rights. The vast majority of water used in hydraulic fracturing of wells is recycled produced water from other nearby wells and not fresh water.

### **Wetlands and Riparian Zones**

Total Number of Submissions: 1

Total Number of Comments: 1

#### **Summary**

Oil and Gas development activities on parcel 6202 could impact wetlands on neighboring private land through ground and/or surface water contamination.

#### **Response**

After review of public comments and through further analysis of the alternatives, portions of parcel 6202, south of the private property in question, also express steep slopes of greater than 40%. The BLM preferred alternative recommends that these portions of parcel 6202 with steep

slopes of greater than 40% be deferred; see Attachment D for detailed description. As a result of this proposed steep slope deferral, the portion of parcel 6202 the commentor is concerned with regarding wetlands on neighboring private lands would also be deferred under the preferred alternative.

### **Wild and Scenic Rivers**

Total Number of Submissions: 2

Total Number of Comments: 2

### **Summary**

BLM's interim protections for WSR Eligible segments are inadequate to protect the water quality and ORV (greenback cutthroat trout) of the eligible Deep Creek segment. The leaseholder's right to develop the mineral resource would threaten the eligibility and tentative "scenic" classification of Deep Creek.

### **Response**

BLM Wild and Scenic River Manual (8351) requires protective management of eligible segments: "When a river segment is determined eligible and given a tentative classification (wild, scenic, and/or recreational), its identified outstandingly remarkable values shall be afforded adequate protection, subject to valid existing rights, and until the eligibility determination is superseded, management activities and authorized uses shall not be allowed to adversely affect either eligibility or the tentative classification, i.e., actions that would change the tentative classification from a wild river area to a scenic river area or a scenic river area to a recreational river area. [ . . . ] Each segment shall be managed to protect identified outstandingly remarkable values (subject to valid existing rights) and, to the extent practicable such values shall be enhanced" [emphasis added] Any proposed action that would result in adverse impacts to water quality would also adversely impact the fish ORV, and therefore could not be approved.

Similarly, any proposed action that could cause the tentative classification of this segment as "scenic" to drop to "recreational" could not be approved. To be classified as "scenic" a segment must be largely primitive and undeveloped and have no substantial evidence of human activity. If the parcel were to be leased, the lease-holder would have rights to the mineral resource, but their activities would be limited to those consistent with BLM's protective management guidance in Manual 8351. Existing protective management of the eligible segment of Deep Creek is adequate to protect its water quality, fish ORV, eligibility and tentative "wild" classification. Since the segment was determined to be eligible prior to any leasing, and protective management is currently in place, the new leases would not confer "valid existing rights" that supersede WSR protections. When the Uncompahgre Planning Area Final Wild and Scenic River Suitability Report is issued with the revised Resource Management Plan, it will supersede the eligibility status of this segment, either by continuing protection of the segment if it is determined to be suitable, or by releasing it from further study and WSR-specific protections if it is not found suitable.

### **Wildlife -Terrestrial**

Total Number of Submissions: 19

Total Number of Comments: 25

### **Summary**

Crucial winter habitats and migratory corridors are known to be limiting factors on big game populations in Colorado. Commenters expressed concerns that the protections and mitigation for effects to big game populations relies primarily on Timing Limitations and does not prevent post-drilling displacement and population declines. Concerns were also expressed for disruptions of habitat (loss, fragmentation) and life functions of raptors and numerous wildlife species (e.g. chemical contamination, noise and air pollution, impacts from increased truck traffic, etc.) and the lack of detailed analysis of effects to these species. Commenters expressed concern for key wildlife migration routes and recommended deferring parcels (6189-6203, 6205-6207) until the RMP is amended.

CPW also disputes the EA statement "most displaced wildlife would be expected to return to the area after drilling is completed" as not supported by the best available information (Sawyer et al. 2006, 2009, Sawyer and Neilsen 2010).

One commenter voiced concerns that the EA (public draft pg 63 and 66) implied that "impacts to 'common species' are somehow not relevant according to NEPA." Additionally, one pointed out that "every parcel identified in the Preferred Alternative has significant black bear and mountain lion habitat" and that the EA contains "no analysis of black bear or mountain lion within the Planning Area" and that the 1989 RMP also does not consider these species.

Commenters also expressed concern for proximity of parcels (6194, 6197 and 6198) to two State Wildlife Areas (McCluskey and Roeber) and the impacts from noise and human activities that would severely limit the value of these areas to wildlife and thus the public's investment in these areas. The EA made no reference to these areas or the effects to them. One commenter expressed concerns of impacts from fracking and cites a "2010 Natural Gas Operations from a Public Health Perspective study" and concerns that "40% of the chemicals have been found to have ecological effects ... harm aquatic and other wildlife."

### **Response**

Table 3.15 W1 of EA, lists by parcel, big game species crucial habitat by parcel that may be impacted by future development activities. The EA discloses potential impacts to big game species, including the following, "Even though, at this time, the proposed action of leasing has no direct effects on wildlife in the area, documented ungulate displacement distance and avoidance buffers from well pads and roads... indicate that residual unavoidable adverse impacts to ungulates increases dramatically when well pad densities exceed one pad/mile<sup>2</sup> .... residual adverse impacts occur from reduced habitat effectiveness regardless of the use of Timing Limitation Stipulations on drilling activities or other site specific Best Management Practices designed to reduce impacts ... . Impacts to big game populations are considered extreme when well pad densities exceed four pads/mile<sup>2</sup> ....". Based on these potential future impacts at the development stage, stipulations and lease notices were added to parcels in crucial big game habitat (Table 3.16). These include UB-04 and UB-LN-15.

As stated in the EA, "Although the proposed action of leasing itself has no direct effects on wildlife in the area, future potential drilling could impact wildlife species and their habitat. Any impacts to specific species would be addressed at the APD stage and appropriate mitigation would be developed." Current information on how and when these lease parcels would be developed is extremely speculative. Without more information, it is impossible to conduct a detailed analysis of development-related impacts such as wildlife habitat fragmentation, noise disturbance, or discharge of fracking chemicals. After leasing, if an operator submits a proposed action for development, BLM will perform additional site-specific NEPA analysis.

The EA includes a list of potential mitigations measures that could be applied as conditions of approval for potential future development to protect Special Status Species, Migratory Birds, and Terrestrial and Aquatic Wildlife. These include timing limitations, completing surveys prior to construction, developing site-specific mitigation plans for impacted species, utilization of remote telemetry equipment and related production equipment on well heads to reduce vehicular traffic and specific mitigation relative to migratory birds. While Sawyer et al. (2006, 2009) and Sawyer and Neilsen (2010) are important research, this body of work comes from the Jonah Field in Wyoming where the level of development is unprecedented. To suggest a similar level of development in the North Fork is unrealistic. The formation depth, formations targeted, topography, and vegetation type are completely different.

Section 3.3.11 and 3.3.12 described the affected environment for terrestrial and aquatic wildlife. The statement that "most of these species are common and have wide distributions" was not meant as a value statement that they are not worthy of additional analysis but rather that they currently do not present specific concerns such as those associated with Special Status Species (e.g., population declines and habitat limitations). Within the Environmental Effects portions of these sections, the word "wildlife" and "aquatic wildlife" are meant to represent all species (common or not) within the planning area. This includes large predators such as black bear and mountain lion. These and many other species are listed as occurring within the planning area as part of the Affected Environment section. Because the timing, extent, and location of specific development activities are not foreseeable at the time of leasing, insufficient information is available to conduct a detailed analysis of effects of future development activities. Accordingly, the Environmental Effects section is written in general terms of effects to the various species. More specific information in an APD will allow BLM to prepare a more detailed analysis based on the type of proposal and the site-specific wildlife species issues that may arise.

The following was added to the EA in the Affected Environment section: "A variety of wildlife habitats and their associated species occur within the proposed parcels. All species are important members of native communities and ecosystems. Unlike those species discussed in the previous two sections (3.3.9 and 3.3.10), species discussed in this section are generally more common and have wide distributions within the state, region and field office. ..."

The EA inadvertently omitted that Parcels 6194, 6197 and 6198 are adjacent to the Roeber and McCluskey State Wildlife Areas. As with analysis of effects to species, effects to Roeber and McCluskey State Wildlife Areas would be assessed at such time as the BLM receives a more

detailed APD. The following has been added to the EA in section 3.8.10: "Parcels 6194, 6197 and 6198 are adjacent to, but do not contain any portions of the Roeber and McCluskey State Wildlife Areas." in Affected Environment. "Also at that time, effects to Roeber and McCluskey State Wildlife Areas would be assessed." in Environmental Effects, Proposed Action.

The following was also added to the EA analysis of the proposed action to address comments: "Effects to general wildlife would be similar to those described in the Threatened, Endangered, and Sensitive Species section above. At the time an exploration or development proposal is presented to the BLM for these lease parcels, additional NEPA analysis will take place to assess the effects of that proposal and BLM may recommend modifications or disapprove proposed activities that would have significant effects to wildlife species. Additionally, UB-LN-04 protects non-special status raptors as well as special status raptors."

### **Wildlife -Aquatic**

Total Number of Submissions: 2

Total Number of Comments: 9

### **Summary**

The EA fails to identify BLM's obligatory responsibilities under the Colorado River Cutthroat Trout Conservation Agreement (2006)<sup>1</sup>. CRCT CAS requires protecting both existing and potential habitat; agencies agree to protect existing and potential cutthroat waters from adverse effects and ensure that planning documents are consistent with this Strategy. All lease parcels within ¼ mile of coldwater fisheries should be permanently withdrawn to protect habitat required for supporting sensitive native fish species (CRCT, GBCT). (Parcels 6206, 6207, 6211, 6215). Parcels 6189, 6190, 6192, 6193, 6200, 6202, 6205, 6206, 6207, 6211 and 6215 in the Preferred Alternative have been identified by Colorado Parks and Wildlife as being located in a Colorado River cutthroat trout watershed. There is no analysis of potential impacts, and no mitigation measures to protect CRCT. EA is negligent in not addressing the implementation of protective measures and stipulations for water resources and aquatic habitat; lack of significant discussion of the importance of the water quality and watersheds and associated drilling impacts to CRCT and GBCT habitat Consultation should take place for any actions affecting Greenback cutthroat trout. EA fails to mention the Greenback Cutthroat Trout Conservation Agreement and the Greenback Cutthroat Trout Recovery Plan. Request deferral of parcel 6215 from this lease sale to protect Wild and Scenic River eligibility status (freeflow of the stream, water quality and ORV [GBCT]). "...stipulations currently attached are weak in strength and could result in significant direct and indirect impacts to the watershed" One commenter stated that USFWS "has determined in their Biological Opinion for this lease sale that several parcels are located within streams containing federally listed Greenback cutthroat trout."

<sup>1</sup>CRCT Conservation Team. 2006. Conservation agreement for Colorado River cutthroat trout (*Oncorhynchus clarkii pleuriticus*) in the States of Colorado, Utah, and Wyoming. Colorado Division of Wildlife, Fort Collins. 10p.

### **Response**

The Colorado River Cutthroat Trout Conservation Agreement contains general Goals and

Objectives for the management of CRCT within portions of Utah, Colorado, Wyoming, New Mexico and Arizona. The EA recognizes that CRCT are found in some parcels, and that the CRCT expansion habitat is within many parcels (Table 3.11). Additional mitigation has been added to Table 3.12 and 3.13 for (LN-16, LN-20) to clarify that these also apply to Special Status aquatic species. LN-16 (Wildlife, Aquatic) was already included in Section 3.3.12 (Wildlife, Aquatic) and LN-20 (Surface Water Bodies) was already included in Section 3.3.16 (Surface Water). The EA states that "Potential future activities could have impacts to connected, downstream habitats for aquatic wildlife" (See Threatened, Endangered and Sensitive Species section 3.3.9 for aquatic TES species). Through the measure identified in these lease notices, in combination with BLM's performance of its responsibilities under the Endangered Species Act (as reflected in stipulation CO-34), the BLM will provide protections to this species, at the development stage, consistent with the CRCT Conservation Agreement.

As previously explained in response to other similar comments relative to Consultation with USFWS, the act of leasing will have no effect on federally listed species or Critical Habitat. Until an operator submits an APD, BLM has insufficient information to predict effects on listed species. The EA failed to reference the Greenback Cutthroat Trout Recovery Plan because there is no effect to the species from this action and no specific need to reference a Recovery Plan at this time. Since GBCT are a federally threatened species, there is a Recovery Plan (1998) but not a Conservation Agreement. The Greenback Recovery Team began discussions on writing a Conservation Agreement back in 2003-2004 when it appeared that the USFWS might consider removing the Greenback from the threatened species list. Because the Greenback was not delisted, no Conservation Agreement was written.

See response above about the addition of LN-16 and LN-20. Following further NEPA analysis at the development stage, and consultation with the USFWS (if required), the BLM may apply the mitigation measures described in these two lease notices, as well as the measures available consistent with CO-34, to protect the Wild and Scenic River eligibility status (free-flow of the stream, water quality and ORV [sensitive fish]) of Deep Creek in the event that an operator submits and APD (See Section 3.3.2 Wild and Scenic Rivers).

The commenter's statement regarding a "Biological Opinion" for the lease sale is erroneous. USFWS' statement that several lease parcels are located within streams containing federally listed GBCT was provided during the comment process and not as part of consultation. The USFWS does not provide a Biological Opinion until BLM initiates formal consultation and submits a Biological Assessment. BLM would initiate consultation, as necessary, when site-specific impacts are known.

#### **Non-Substantive comments**

Total Number of Submissions: 44

Total Number of Comments: 51

#### **Lands with Wilderness Characteristics**

Total Number of Submissions: 1

Total Number of Comments: 1

**Summary**

The BLM's EA indicates there are no Lands with Wilderness Characteristics. However, during the Wild and Scenic River discussions held by the BLM in 2011 there was discussion on the study areas that might be considered for this designation. Since the final analysis has not taken place it is inaccurate to state there are no lands of this type that would be affected by oil and gas leasing.

**Response**

BLM's inventory of lands with wilderness characteristics in the project area is current. In 2011 BLM updated its inventory of lands with wilderness characteristics in the Uncompahgre Planning Area. All BLM surface ownership in the proposed lease sale area was inventoried. No BLM lands in the proposed lease sale area were found to possess wilderness characteristics.