

**U.S. Department of the Interior
Bureau of Land Management**

Preliminary Environmental Assessment

August Oil and Gas Lease Sale

March 2012

PREPARING OFFICE

U.S. Department of the Interior
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**Environmental Assessment:
August 2012 Oil and Gas
Lease Sale:**

March 2012

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Chapter 1. Introduction

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The Bureau of Land Management (BLM) Uncompahgre Field Office (UFO) has prepared this environmental assessment (EA) to disclose and analyze the environmental effects of the proposed sale of 22 parcels (29,811.680 acres) during the August 2012 oil and gas lease sale. The EA is a site-specific analysis of potential impacts that could result from the implementation of a proposed action or alternatives to the proposed action. The EA assists the BLM in project planning and ensuring compliance with the National Environmental Policy Act (NEPA).

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, Oil and Gas Leasing Reform-Land Use Planning and Parcel Review, and WO IM 2010-118, Energy Policy Act Section 390 Categorical Exclusion (CX) Policy Revision. That IM requires the field office to complete an EA as appropriate 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 as well as guidance for use of Master Leasing Plans. This EA has been prepared in accordance with IM CO-2010-027 to analyze leasing of 22 nominated parcels.

This Preliminary EA will be available to the public along with the list of available lease parcels and stipulations for a 30-day public comment period. After the end of the public comment period, the BLM will analyze the comments and makes changes as necessary. The final parcel list with stipulations and notices will be available to the public through a Notice of Competitive Lease Sale (NCLS) which will start 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 COSO tentatively scheduled for August 9, 2012. 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. 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. 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 August 2012 Oil and Gas Lease Sale parcel list includes 22 parcels which are identified using the following parcel identification numbers: 6217, 6215, 6206, 6216, 6211, 6189, 6192, 6190, 6205, 6207, 6193, 6194, 6197, 6199, 6200, 6191, 6195, 6196, 6198, 6201, 6202, and 6203. The proposed August 2012 Oil and Gas Lease Sale Parcel List can be found in [Appendix A](#) and [Appendix G](#) contain maps of the subject parcels. [Attachment B](#) contains all or portions of parcels recommended for deferral, and [Attachment C](#) contains all or portions of parcels recommended for inclusion in the lease sale with applied stipulations.

Fourteen parcels (6217, 6190, 6205, 6193, 6197, 6199, 6200, 6191, 6195, 6196, 6198, 6201, 6202, and 6203) are entirely within Delta County, Colorado, while six parcels (6215, 6206, 6216, 6211, 6189, and 6192) are entirely within Gunnison County. Two parcels (6207 and 6194) overlap the Delta and Gunnison county boundary.

Seven parcels (6211, 6215, 6206, 6205, 6198, 6193 and 6203) have split estate where the minerals are federally owned and some of the surface estate is in private ownership. See [Table 1.1](#) below for detailed legal description and acreage information.

Table 1.1. Split Estate Lands Associated with August 2012 Oil and Gas Lease sale

Parcel ID (Total Parcel Acres)	TWP/RNG/SEC	Qtr/Qtr/Aliq.	Split Estate Acres
6211 (299.500)	T11S., R90W., Sec. 2	Lot 1–5, 7, 8, 11—4	299.500
6215 (466.320)	T13S., R89W., Sec. 3	Lot 5–12	246.320
6206 (1681.030)	T13S., R89W., Sec. 2	Lot 36	13.710
6205 (800.00)	T13S., R91W., Sec. 28	NWNE	40.000
6198 (2360.000)	T14S., R92W., Sec. 28	W2NE, N2SE	160.000
6193 (1004.360)	T14S., R91W., Sec. 5	Lot 1	40.200
6203 (2145.610)	T15S., R92W., Sec. 11	SEWNE, S2ENE, E2NWSE, NESWSE	60.000
7 Parcels include Private Lands		Total Acres of Private Land	859.730

The parcels proposed for leasing 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,

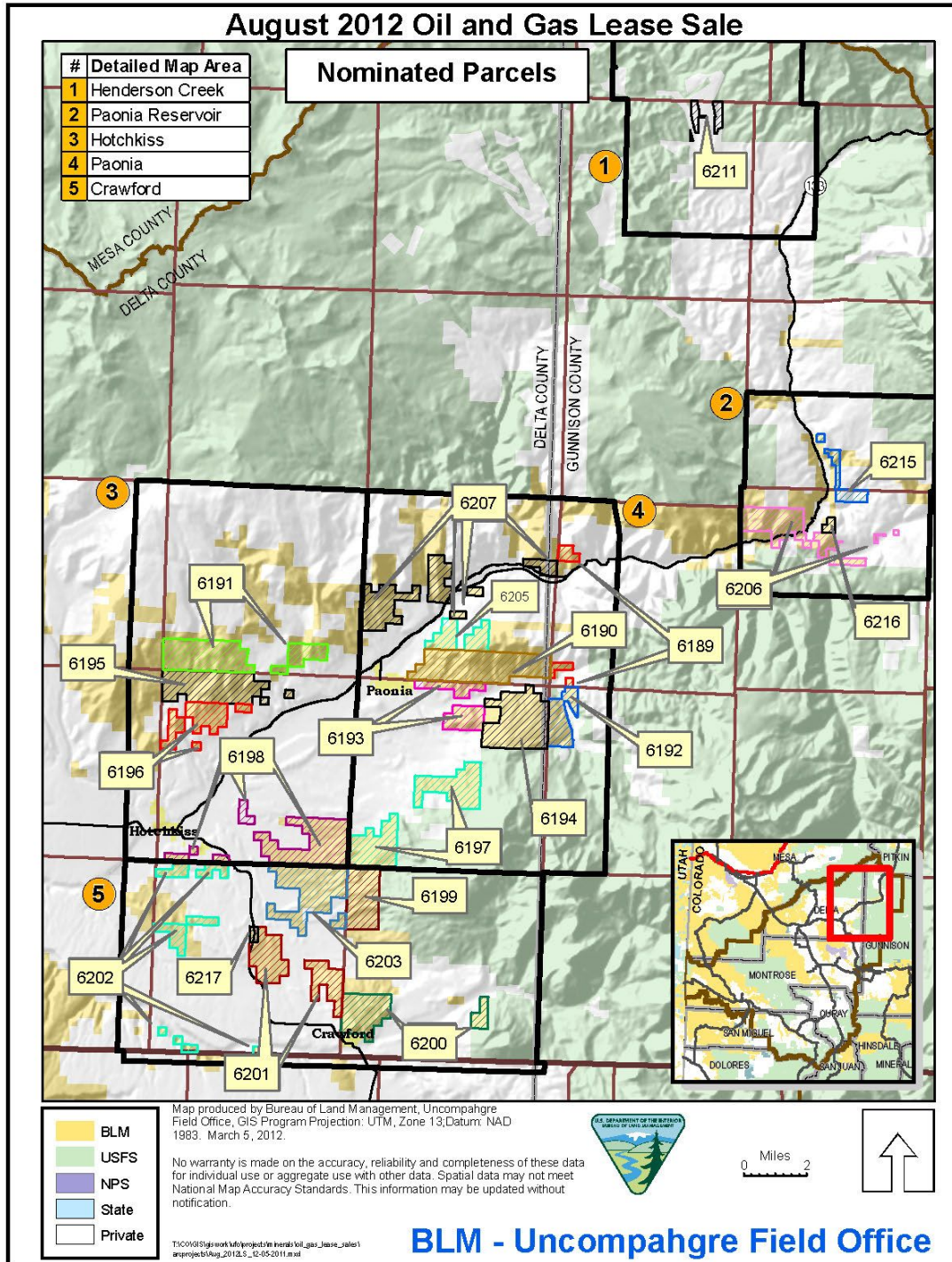


Figure 1.1. General Area Map

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 for Action:

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 conditions of the Mineral Leasing Act of 1920 as described in 43CFR 3100 and 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 August 2012 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 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 which might be affected and considered potential impacts using current office records and geographic information system (GIS) data, they also conducted site visits. The results of the ID team review, including a list of all resources/issues that were selected to be analyzed in further detail within Chapter 3 of this EA.

PUBLIC SCOPING

On December 7, 2011, the BLM UFO issued a press release to the public regarding one of three opportunities to submit comments on the proposed parcels nominated for inclusion into the Colorado August 2012 Federal Oil and Gas Lease sale. The duration of the comment period for the first opportunity was extended until February 9, 2012, as a result of public comments. Public scoping was also initiated by posting the project information on the BLM UFO NEPA register, located online at:

http://www.blm.gov/co/st/en/BLM_Information/nepa/ufo.html

On December 16, 2011, BLM UFO launched the following website which includes maps, ©Google Earth .kml resources, updates, and important documents related to proposed parcels associated with the proposed August 2012 lease sale.

http://www.blm.gov/co/st/en/BLM_Information/nepa/ufo/august_lease_sale.html

BLM Uncompahgre Basin Resource Area Land Use Plan and associated documents are also available online at:

http://www.blm.gov/co/st/en/fo/ufo/uncompahgre_rmp/ufo_rmps_amendments.html

The BLM received 2982 comment letters during the December 7, 2011 through February 9, 2012 public scoping period. Comment letters were received from 17 government agencies, 2904 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.)

Chapter 2. 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 [Appendix 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 28,951.950 acres of federal land and approximately 859.730 acres of split-estate land.

Table 2.1. Parcel Listing

Parcel ID	Acres	County	Parcel ID	Acres	County
6217	80	Delta	6207	2122.97	Delta & Gunnison
6190	2471.37	Delta	6194	2000.1	Delta & Gunnison
6205	800	Delta	2 Parcels	4123.07	Acres
6193	1004.36	Delta	Parcel ID	Acres	County
6197	2408.76	Delta	6215	466.32	Gunnison
6199	1294.56	Delta	6206	1681.03	Gunnison
6200	1363.4	Delta	6216	105.97	Gunnison
6191	2228.89	Delta	6211	299.5	Gunnison
6195	1913	Delta	6189	356.28	Gunnison
6196	1078.04	Delta	6192	679.47	Gunnison
6198	2360	Delta	6 Parcels	3588.57	Acres
6201	1720	Delta			
6202	1232.05	Delta			
6203	2145.61	Delta	TOTAL		
14 Parcels	22100.04	Acres	22 parcels	29811.68	Acres

2.1. Description of 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](#), also described in [Table 2.1 Proposed Action Parcel Listing](#) and [Attachment C](#). The field office review of this alternative has recommended deferral of approximately 445.880 acres associated with lease parcel 6206 as the lands involved include Bureau of Reclamation project lands. Thus, this alternative would consist of 22 parcels, 29,365.800 acres of federal lands and approximately 859.730 acres of split estate lands.

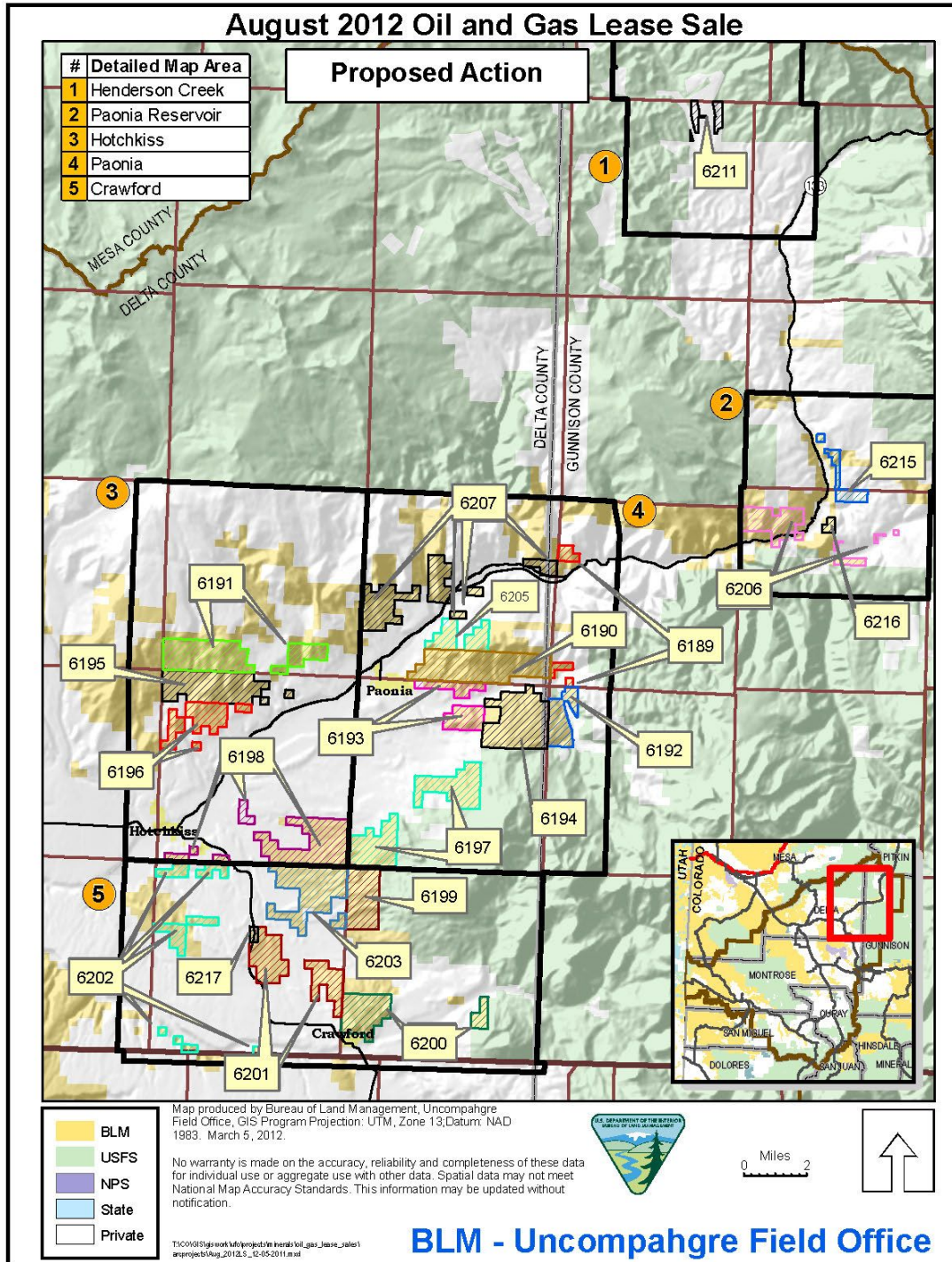


Figure 2.1. Proposed Action

Table 2.2. Proposed Action Parcel Listing

Parcel ID	Acres	County	Parcel ID	Acres	County
6217	80	Delta	6207	2122.97	Delta & Gunnison
6190	2471.37	Delta	6194	2000.1	Delta & Gunnison
6205	800	Delta	2 Parcels	4123.07	Acres

Parcel ID	Acres	County
6193	1004.36	Delta
6197	2408.76	Delta
6199	1294.56	Delta
6200	1363.4	Delta
6191	2228.89	Delta
6195	1913	Delta
6196	1078.04	Delta
6198	2360	Delta
6201	1720	Delta
6202	1232.05	Delta
6203	2145.61	Delta
14 Parcels	22100.04	Acres
Parcel ID	Acres	County
6215	466.32	Gunnison
6206	1235.15	Gunnison
6216	105.97	Gunnison
6211	299.5	Gunnison
6189	356.28	Gunnison
6192	679.47	Gunnison
6 Parcels	3142.69	Acres
TOTAL		
22 parcels	29365.8	Acres

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 are provided in the UBRA RMP and lease notices developed as a result of this alternative are identified in [Attachment F](#) and if applied, are specified per parcel in [Attachment C](#).

2.2. Description of Preferred Alternative

The BLM Preferred Alternative utilized the information provided by [Table 2.2 Preferred Alternative](#) and [Attachment A](#) to develop an additional alternative based on the occurrence of Steep Slopes (those that express a slope of 40% or greater on the landscape). Each of the 22 parcels as nominated for the August 2012 Oil and Gas Lease Sale were reviewed for occurrences of Steep Slopes. This alternative recommends that 21 of the original 22 parcels be offered for sale including appropriate stipulations and lease notices ([see Attachment E](#)). The 21 parcels as proposed in the BLM preferred alternative are comprised of approximately 24,324.050 total acres, 23,478.020 acres is federal lands and approximately 846.030 acres are split-estate lands.

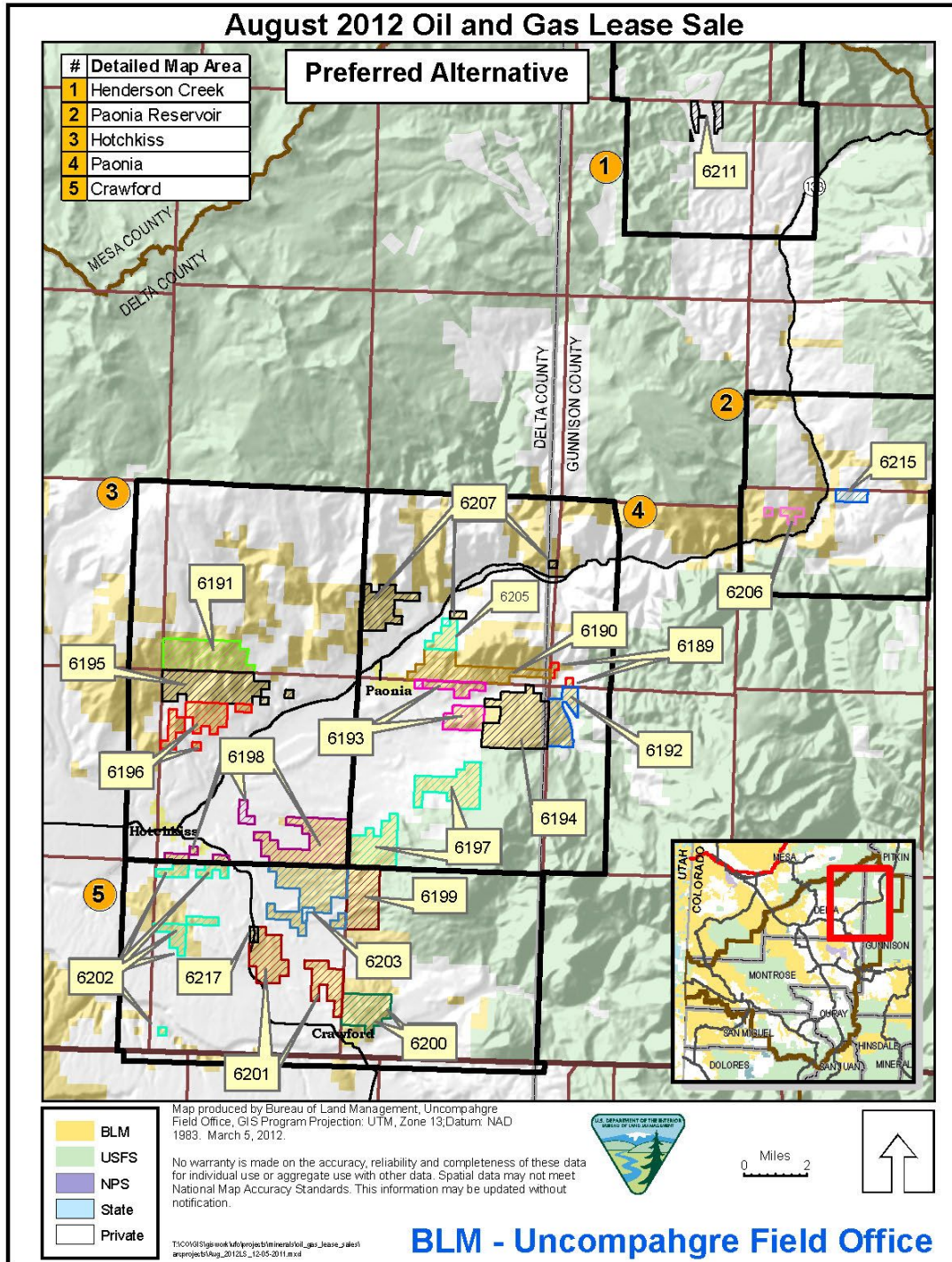


Figure 2.2. Preferred Alternative

Table 2.3. Preferred Alternative, Parcel Listing

Parcel ID	Acres	County	Parcel ID	Acres	County
6217	80	Delta	6207	1163.66	Delta & Gunnison
6190	1521.83	Delta	6194	2000.1	Delta & Gunnison
6205	440	Delta	2 Parcels	3163.76	Acres

			Parcel ID	Acres	County
6193	1004.36	Delta			
6197	2408.76	Delta	6215	246.32	Gunnison
6199	1294.56	Delta	6206	200	Gunnison
6200	962.88	Delta	6211	299.5	Gunnison
6191	1681.54	Delta	6189	93.83	Gunnison
6195	1913	Delta	6192	679.47	Gunnison
6196	1078.04	Delta	6 Parcels	1519.12	Acres
6198	2360	Delta			
6201	1720	Delta			
6202	1030.59	Delta	TOTAL		
6203	2145.61	Delta	22 parcels	24324.05	Acres
14 Parcels	19641.17	Acres			

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 provided in the UBRA RMP and lease notices developed as a result of this alternative are identified in [Attachment F](#) and if applied, 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 August 2012 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 would 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.

It is an assumption that the No Action Alternative (no lease option) may result in a slight reduction in domestic production of oil and gas. This would likely result in reduced Federal and State royalty income. Oil and gas consumption is driven by a variety of complex interacting factors including energy costs, energy efficiency, availability of other energy sources, economics, demographics, and weather or climate. If the BLM were to forego its leasing decisions and potential development of those minerals, the assumption is that the public's demand for the resource would not be expected to change. Instead, the resource foregone would be replaced by other sources that may include a combination of imports, fuel switching, alternative fuels, and other domestic production.

2.4. Alternatives Considered but not Analyzed in Detail

Make all parcels as proposed prior to analysis available for lease under standard terms and conditions and apply UBRA RMP leasing stipulations where necessary (Appendix A of UBRA RMP). This alternative was dismissed from detailed analysis because it is substantially similar

in design to the proposed action. The difference is the proposed action contains additional protections beyond those contained in the standard stipulations of the UBRA RMP.

2.5. Conformance with Land Use Plan

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

Date Approved: July 26, 1989, as amended

The Proposed Action and alternatives conform with the UBRA RMP (BLM, 1989) because they are specifically provided for in the planning decisions. The Land Use Plan (LUP) 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 will 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 will 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 will be open to leasing. A seasonal stipulation on seismic and drilling activities will 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 will be open to leasing. A seasonal stipulation on seismic and drilling activities will 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 will be open to leasing. A seasonal stipulation on seismic and drilling activities will 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 bald 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.

Chapter 3. Affected Environment and Environmental Effects:

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

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

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 shown in [Figure 3.1. Area of Influence](#)

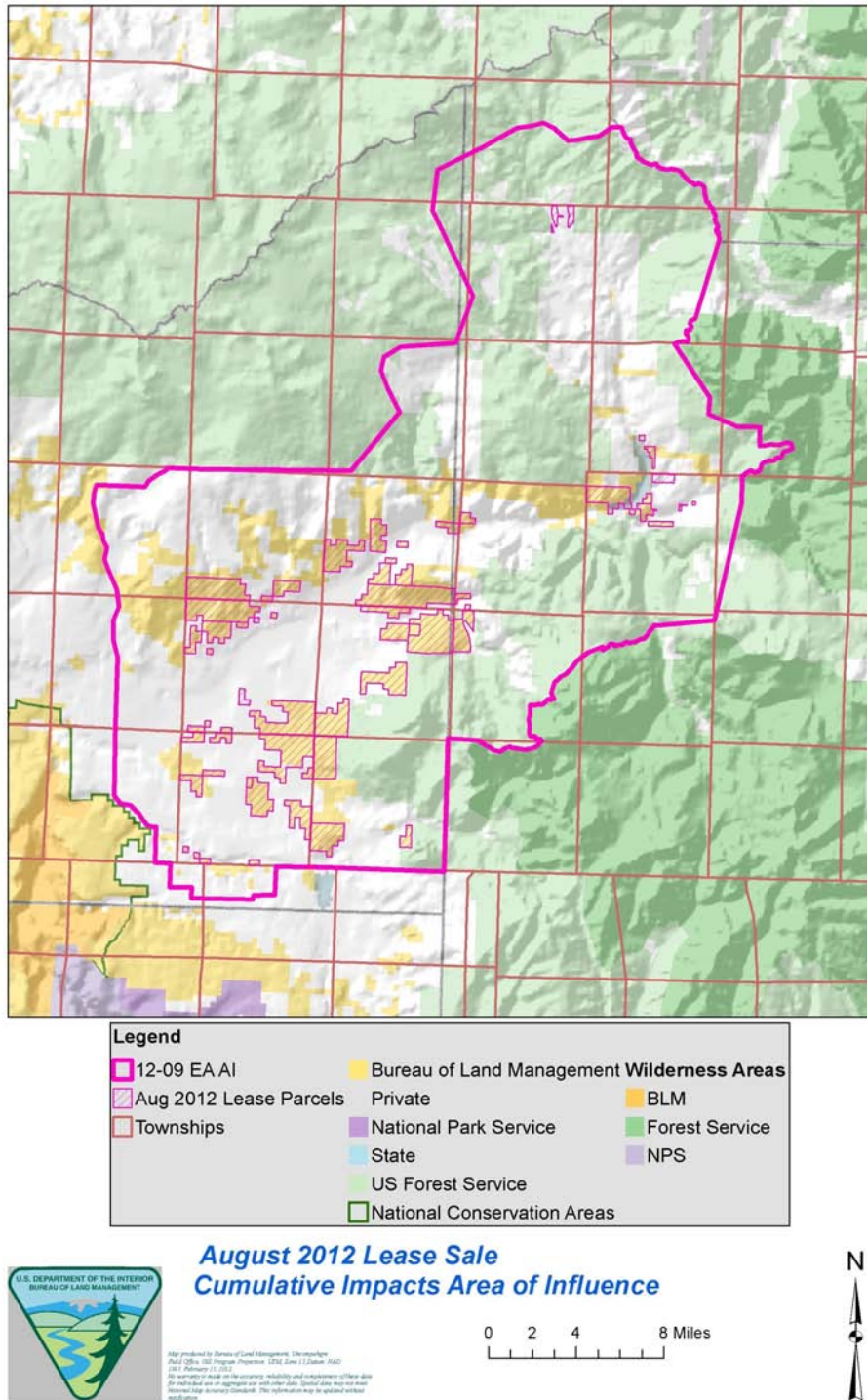


Figure 3.1. Area of Influence

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

Past Actions

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Past, Present, Reasonably Foreseeable Future Actions*

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

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:

- 43 active wells exist in the area. 18 are on private surface/private minerals; 10 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 6 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 and agricultural development. [Table 3.1 Raw Coal](#) Production, below, contains recent production data for the three coal mines in the North Fork Valley.

Mining

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. A coal lease modification to lease COC-036955 for 160 acres was issued on January 21, 2011 for the Bowie No. 2 Mine.
- 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 Year Averages				
Average based on:	Bowie	Elk Creek	West Elk	Totals (NF)
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 for whatever roadless rule 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 at this time. 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.

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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, mountain biking, snowmobiling, and sight-seeing.

Reasonably Foreseeable Future Actions

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

- Oxbow Mining, LLC (Elk Creek Mine) applied for 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 are in the final process of approval. 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 and are undergoing NEPA analysis. They would add approximately 505 acres, and temporary surface disturbances from road and pad construction would occur on about 16.6 acres.

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 includes:

- 17 total permits (APDs) pending.
 - 9 shale well permits including 2 APDs from Gunnison Energy Corp. on private surface/federal minerals.
 - 3 coal-bed methane wells and
 - 5 coal mine wells capturing methane 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 which exceeds the past average. 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 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 60 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

Standard	Definition and or Statement
#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. In addition, applicable leasing protective measures provided through the UBRA RMP, 1989 would eliminate any potential impact.

Areas of Critical Environmental Concern

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

Farmlands (Prime or Unique)

There are no Farmlands (Prime or Unique) 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

Under FLPMA BLM is required to maintain an inventory of lands that possess wilderness characteristics. BLM Instructional Memorandum (IM) 2011-154 provides further guidance on the inventory process. Generally, the characteristics are:

1. 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.
2. Naturalness -- lands must appear to have been affected primarily by the forces of nature, and people's work must be substantially unnoticeable.
3. Outstanding opportunities for solitude, **or** primitive and unconfined type of recreation
 - a. Solitude – visitors can feel alone, secluded and isolated from the sights and sounds of other people.
 - b. Primitive and unconfined recreation – the use of the area is primarily through non-motorized or non-mechanical means with no or minimal recreation facilities.
4. 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 1, 2 and 3 characteristics. Characteristic number 4 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 Environmental Protection Agency (EPA) has the primary responsibility for regulating air quality, including seven nationally regulated ambient air pollutants. These criteria pollutants include carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM₁₀ &

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PM2.5), sulfur dioxide (SO₂) and lead (Pb). Regulation of air quality is delegated to the State of Colorado. Air quality is determined by atmospheric pollutants and chemistry, dispersion meteorology and terrain, and also includes applications of noise, smoke management, and visibility.

Air quality in the areas of the proposed lease tracts is generally good as defined by the Air Quality Index. None of the potential lease tracts are located in any of the areas designated by the EPA as non-attainment areas for any listed pollutants regulated by the Clean Air Act.

Air quality in the planning area is affected primarily by emissions from agricultural, urban, and industrial sources, which are quantified on a countywide basis. [Table 3.4](#) below shows the average annual regional air pollutant emissions for the two counties where lease sale nominations are being analyzed (EPA 2008a).

Table 3.4. Average Annual Air Pollutant Emissions 1996–2001.

County	Emissions (Tons Per Year)					
	CO	NO _x	PM10	PM2.5	SO ₂	VOC
Delta	15,745	1,715	5,563	1,307	135	1,849
Gunnison	15,698	1,063	3,210	1,294	108	1,817

Due to the lack of monitoring stations in the area, more recent monitoring information is not available for most criteria pollutants.

Environmental Effects

Proposed Action

Leasing the subject tracts would have no direct impacts to air quality. Any potential effects to air quality from sale of lease parcels would occur at such time that the leases were developed. 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 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 PM10 and PM2.5) in the project area and immediate vicinity. In addition, increases in the following criteria pollutants: carbon monoxide, ozone (a secondary pollutant, formed photochemically by combining VOC and NO_x emissions), nitrogen dioxide, and sulfur dioxide would also occur due to combustion of fossil fuels during exploration and development activities. Non-criteria pollutants such as carbon dioxide, methane and nitrous oxide (GHGs), 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). Additional low, short-term impacts to air quality may occur due to venting of gas from the wells during exploration. Even with

these increased pollutants, development of only the offered lease parcels is unlikely to result in an exceedance of NAAQ and CAAQ standards, and is likely to comply with applicable PSD increments and other significant impact thresholds. As described above, exploration and development would release VOCs from pits and tanks and from venting and flaring. Engines used for drilling, transportation, gas processing, compressing gas for pipelines, and other uses would contribute to associated air pollutant emissions.

In order to reasonably quantify emissions associated with well exploration and production activities, certain types of information are 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, presented below are the potential development scenarios that could result from selection of the proposed action or the preferred alternative. What can be said is that exploration and production would contribute to incremental increases in overall air quality emissions associated with oil and gas exploration and production into the atmosphere.

The most significant criteria pollutants emitted by oil and gas development are VOCs, PM10 and NOx and for gas production CO. VOCs are a potential problem as they contribute to ozone pollution. The additional VOCs emitted from the new oil and gas development on these leases are likely too small to have a significant effect on the overall ozone levels of the area.

Cumulative Effects

This lease sale, 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 Plateau 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 development in the watershed.

Mitigation

The lessee/operator is given notice that prior to project-specific approval, additional air quality analysis will be required to comply with the National Environmental Policy Act, Federal Land Policy Management Act, and/or other applicable laws and regulations. Analysis may include dispersion modeling for deposition and visibility impacts analysis, control equipment determinations, and/or emissions inventory development. These analyses may result in the imposition of additional project specific air quality control measures.

1) Proposed Lease Notice regarding Air Quality Lease Best Management Practices:

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

Examples of BMPs include the following:

- Tier II or better drilling engines
- Stationary internal combustion engine standard of 2g NO_x/bhp-hr for engines <300HP and 1 g NO_x/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

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 3.5 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.

Table 3.5. Climate Summary From Station Near the Leasing Areas

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
MONTROSE 2, COLORADO (Elevation: 5,690 Feet) Period of Record: 10/1895-12/2007													
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	63.3

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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	34.6
Avg Total Inches Precip.	.57	.53	.72	.86	.87	.53	.86	1.25	1.12	1.04	.66	.65	9.67
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	27.4
Avg Snow Depth in Inches	1.0	0	0	0	0	0	0	0	0	0	0	0	1.0
NORWOOD, COLORADO (Elevation: 7,020 Feet) Period of Record: 4/1924-12/2007													
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	59.9
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	29.9
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	15.47
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	60.3
Avg Snow Depth in Inches	4.0	3.0	1.0	0	0	0	0	0	0	0	1.0	2.0	1.0
PAONIA 1 SW, COLORADO (Elevation: 5,580 Feet) Period of Record: 1/1893-12/2007													
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	64.1
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	35.2
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	15.56
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	47.2
Avg Snow Depth in Inches	4.0	2.0	0	0	0	0	0	0	0	0	0	2.0	1.0

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 CO₂e). 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 (CO₂), methane (CH₄), nitrous oxide (N₂O) 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.

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

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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. The Deep Creek segment is free-flowing as defined by the act, and possesses a fish ORV due to the presence of what is thought to be a genetically pure strain of greenback cutthroat trout.

BLM will include as part of the draft RMP a suitability report which determines which segments, from among the eligible segments, are suitable for protection under the WSRA. Until that report is finalized, BLM manages 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.”

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 6215 in both the proposed action and the preferred alternative..

From the Final Eligibility Report:

Description: Deep Creek is a perennial headwater stream that drains from the Ragged Mountains and discharges into Paonia Reservoir. High flows on this stream typically occur during spring snowmelt. The lower terminus of this segment is the confluence of Deep Creek with Paonia Reservoir along the North Fork of the Gunnison River, while the upper terminus is the upstream limit of BLM-managed lands.

Lower Terminus - Latitude: 38° 57' 16.77" N; Longitude: 107° 20' 1.39" W

Upper Terminus - Latitude: 38° 58' 40.89" N; Longitude: 107° 18' 13.85" W

Table 3.6. River Segment Ownership (in Miles):

BLM	USFS	State	Private	Total Length	% Federal
0.58			1.97	2.55	22.7%

Table 3.7. Land Ownership within One-Half Mile Wide Corridor (in Acres):

BLM	USFS	State	Private	Total Acres	% Federal
127.7			680.2	807.9	15.8%

The portion of this segment within the proposed lease sale area for parcel 6215 is entirely on private land. The stream length within the parcel is 0.42 miles, and the size of the WSR study area within the parcel is 141 acres.

Outstandingly Remarkable Values: Fish

1. Fish - Based upon the best available genetic information, this river segment harbors a genetically pure population of greenback cutthroat trout (*Oncorhynchus clarki stomias*), a

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species listed as threatened under the Endangered Species Act. This is one of 37 known greenback populations on the west slope of Colorado.

Preliminary Classification: Scenic

Rationale - An unsurfaced road crosses Deep Creek via an unhardened ford within and near the upper terminus. The remaining river channel and associated corridor are primitive and undeveloped. There are irrigation diversions upstream from this reach.

Table 3.8. Interim Protection for Agency-Identified WSR Eligible Streams

Issue	Protection under Eligible Designation
Study Boundary	Minimum of one-quarter mile from the ordinary high water mark on both sides of the active channel Boundary may include adjacent areas needed to protect identified values
Preliminary Classification	Wild, scenic, and recreational classes as defined by statute Manage segment at preliminary classification
Private Land: Administration Acquisition	Affect private land uses through voluntary partnership with state/local governments and landowners No regulatory authority No ability to acquire interest in land under the Act's authority prior to designation
Water Resources Project	River's free-flowing condition protected to the extent of other agency authorities
Land Disposition	Agency discretion to retain lands within river corridor in federal ownership
Mining and Mineral Leasing	Protect free flow, water quality, and ORVs through other agency authorities
Actions of Other Agencies	Affect actions of other agencies through voluntary partnership
Protect Outstandingly	No regulatory authority conferred by Act; agency protects through other authorities
Remarkable Values (ORVs)	Section 11(b)(1): limited financial or other assistance to encourage participation in the acquisition, protection, and management of river resources

Source: Interagency Wild and Scenic River Coordinating Council, Wild and Scenic Rivers Study Process

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, which will become effective when signed at the end of the revision process.

The suitability report will determine whether this segment is suitable or not suitable for inclusion in the NWSRS. If it 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.

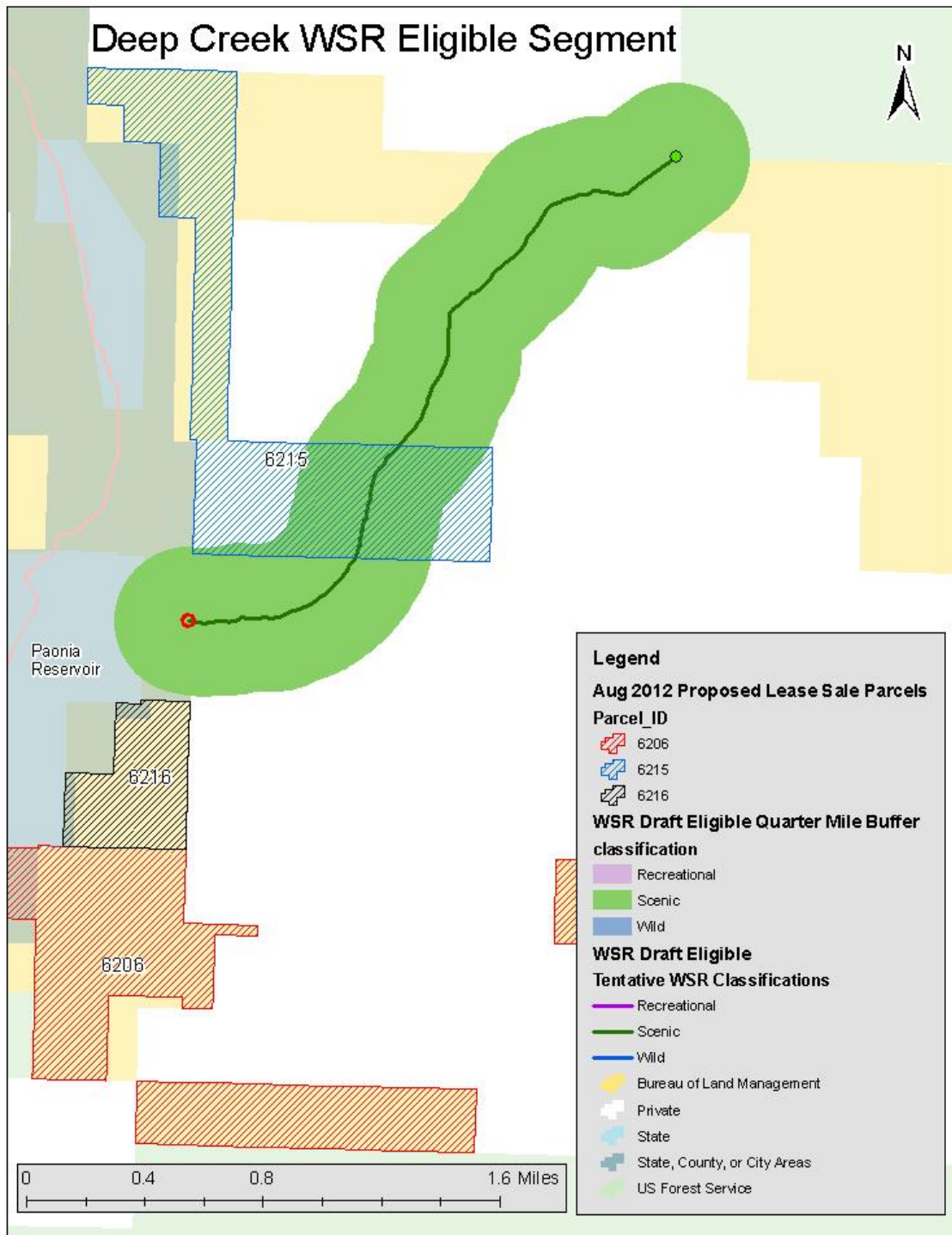


Figure 3.2. Deep Creek Wild and Scenic River Eligible Segment

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.

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. 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.”

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 following lease notice is proposed to assist in mitigating impacts from oil and gas development activities upon parcel 6215 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..

If the lease were to be purchased and subsequently developed, 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 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.”

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.

Within the sections evaluated, 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

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

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 Area of Potential Effect (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

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

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. 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, and 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](#) above 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.



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 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 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*		
Mancos Shale	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		
Dakota Sandstone				
*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 metal. 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).

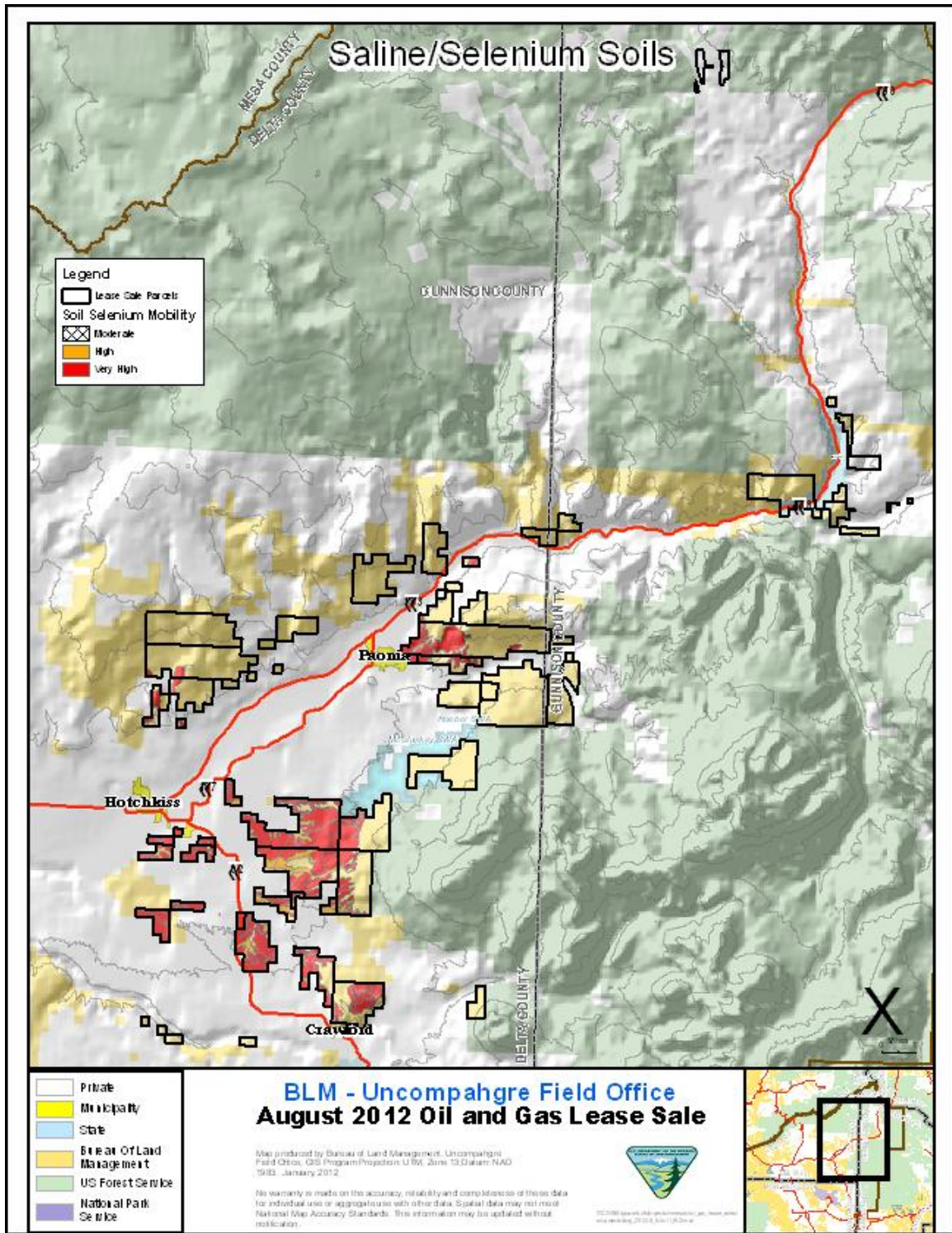


Figure 3.5. Saline and Selenium Soils

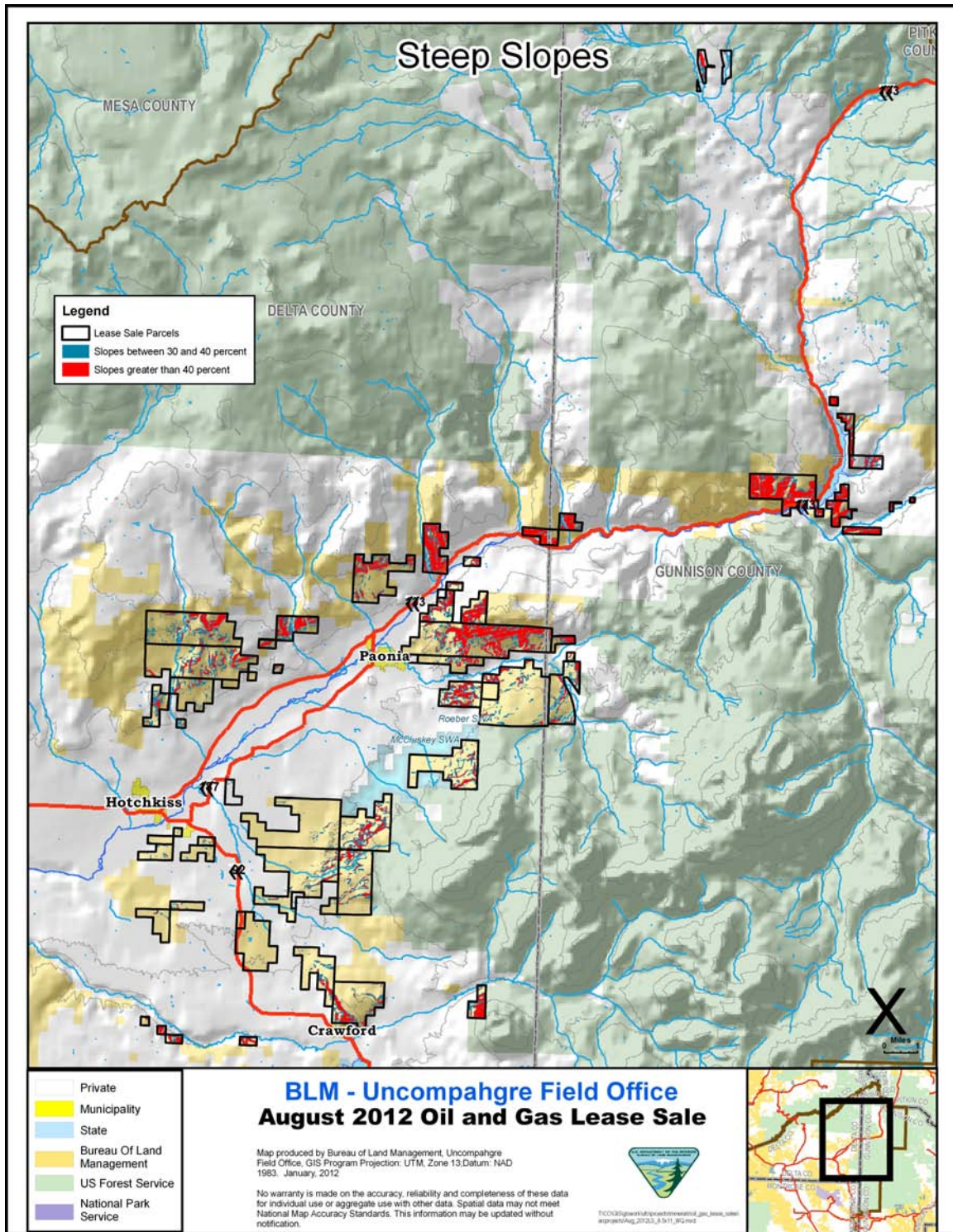


Figure 3.6. Steep Slopes

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 Steep Slopes](#), 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 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). 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.
- Development 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

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 (6197, 6199, 6198, and 6203) if offered for lease are 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, the following Exhibit should be applied to the following parcels; **6189, 6190, 6191, 6192, 6193, 6194, 6195, 6196, 6197, 6198, 6199, 6200, 6201, 6202, 6203, 6205, 6207, 6217:**

1. **CO-34 -ENDANGERED SPECIES ACT SECTION 7 CONSULTATION STIPULATION**

The full text of CO-34 is located in [Appendix F](#). The stipulation will be used should analysis show that activities in areas with high selenium concentrations would cause transport of selenium to surface waters containing Threatened or Endangered fish species. As stated in 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 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 environmental effects of sediment transport described above if development were to occur, the following Lease Notices should be applied to all proposed parcels:

2. Steep Slopes

- 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:
 1. Restoration of Site productivity.
 2. Control of surface runoff .
 3. Protection of off-site areas from accelerated erosion such as rilling, gullyng, piping, and mass wasting.
 4. During extended wet periods, surface-disturbing activities may not be conducted.
- 1. 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.

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

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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.

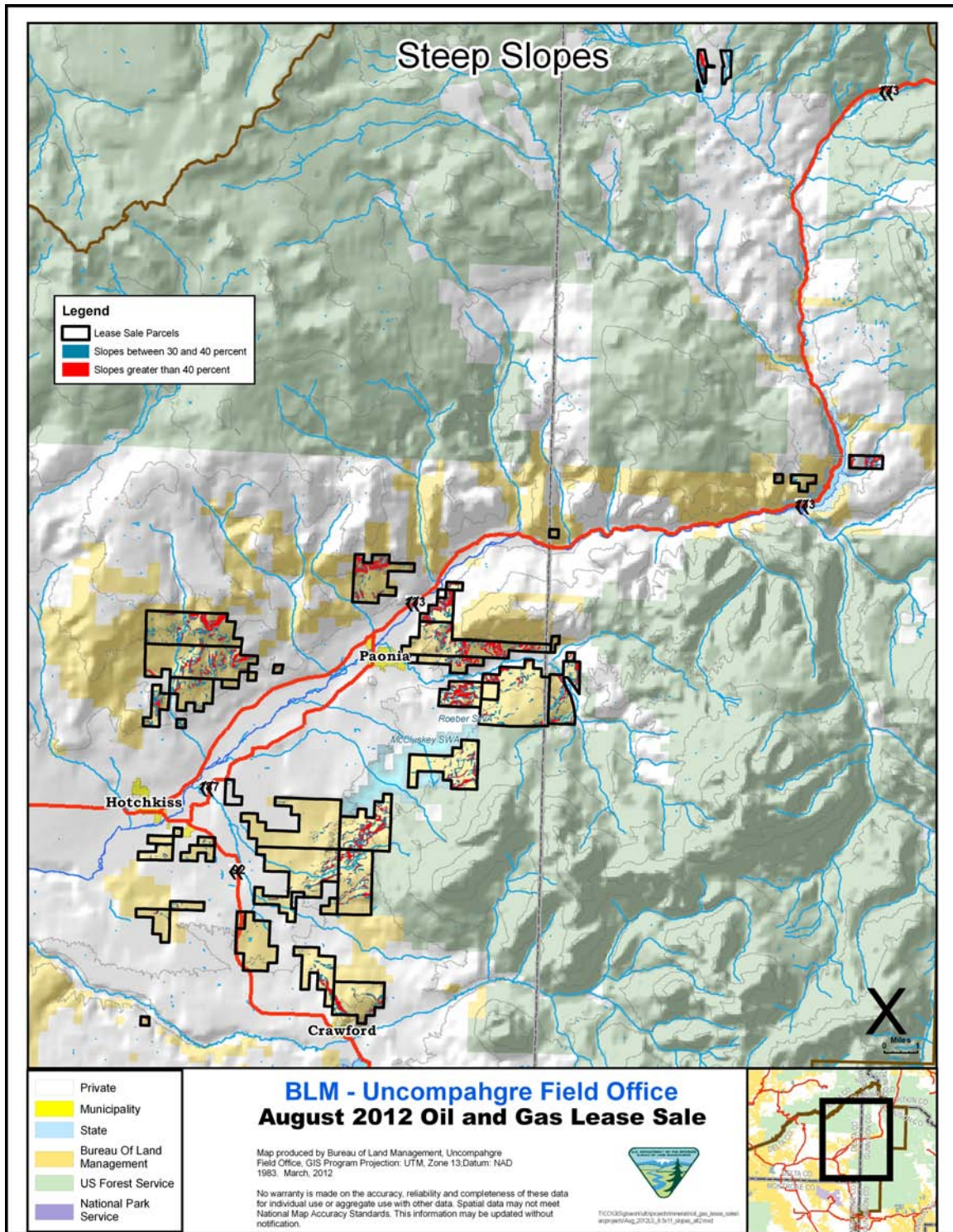


Figure 3.7. Steep Slopes — Preferred Alternative

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.

3.3.6. Vegetation

Affected Environment

The parcels occur across a variety of vegetation types, as shown in [Table 3.10](#) Major Upland Vegetation Types 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 3.10. Major Upland Vegetation Types and Acreages by Parcel*

Parcel ID	Mountain Shrub	Grease-wood/bad-land	Grass-Forb	Aspen-Doug fir	Pinyon-juniper	Pinyon-juniper /mountain shrub	Pinyon-juniper /sagebrush	Sage-brush	Saltbush
6189	25	1	188	6	14	87			
6190	128	536	833		310	196	389	5	
6191	89	62	615	17	64	947	340		6
6192	69	33	376	19	24	255	42		
6193		208	203		129	342	116		
6194	626	38	516	38	19	777	37		
6195		93	669			664	495		
6196		56	203		15	207	554		
6197	303	221	488	111	279	736	202	30	6
6198		201	319		256		241	261	927
6199		168	278		356	87	206	106	
6200	108	123	185	108	491	135	202	17	
6201		448	167		252	15	293	154	372
6202		206	124		199	82	73	15	491
6203		686	405		301	17	155	168	183
6205	105	53	24	152	51	338	23		
6206	526	15	237	582	26	142			
6207	116	108	497	10	137	847	318		
6211	265			21					
6215	164		31	153		80			
6216	5			88		9			
6217		42	6				17	6	

*Only 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.

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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.

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 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. 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 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

3.3.7. Invasive and 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 (*Halogeton 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 actual APD, Conditions of Approval will 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. Environmental protections, or BMP's, such as pre-inventory and treatment of noxious weeds prior to ground disturbing activities, or required power washing of vehicles before entering the lease will 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 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 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.

3.3.8. 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](#))

Greenback cutthroat trout (GBCT) are found in Anthracite, Deep and Terror Creeks. Anthracite Creek (parcel 6206) is classified as “Greenback Cutthroat Trout, present; Non-Natives are Present; Non-Native Stocking.” The Terror Creek reach within parcel 6207 is classified as “Greenback Cutthroat Trout, present; Non-Natives not Present.”

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 6189, 6190 and 6103) and peregrine falcon (parcel 6200). 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 6215. Terror creek contains a CRCT core population approximately 1.3 miles upstream from parcel 6207. Henderson creek contains a CRCT core population approximately 1 mile downstream of parcel 6211.

Table 3.11. TES 1. Potential Special Status Species by Proposed Parcel.

Parcel IDs	6189	6190	6191	6192	6193	6194	6195	6196	6197	6198	6199	6200	6201	6202	6203	6205	6206	6207	6211	6215	6216	6217	
Aquatic TES Species																							
Aquatic Habitat Recov. and Conserv. Waters													X		X			X					
High Selenium Concentrations		X2			X		X	X	X	X	X	X2	X	X2	X			X-2					X
Federally Listed Species																							
Lynx Analysis Unit									X			X					X-2		X				
Lynx Denning/Winter Habitat												X											
Lynx Potential Habitat																	X		X				
Lynx Winter Habitat																	X-2		X				
Greenback cutthroat trout																	X	X		X			
Plant Potential rare plant species (Sclerocactus glaucus)	X	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-2	X2	X	X	X	X	X	X	X	X	X	X2				X2		X-2					
Gunnison Sage Grouse Potential													X	X2	X								X
Special Status Species (BLM, Migratory Birds)																							
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-2		X2			
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			
Bald eagle winter foraging area	X-2	X2	X-2	X	X	X	X	X	X	X	X	X2	X	X2	X	X2	X-2	X-2		X2	X-2	X	
Bald eagle winter concentration	X-2	X			X					X				X	X	X-2	X-2						
Bald eagle roost site										X													
Peregrine falcon nesting territory												X2											
Potential northern goshawk habitat																X							
Potential Ferruginous hawk habitat	X	X		X	X	X	X	X	X	X	X	X2	X	X2	X	X	X	X-2					X

Potential Brewer's sparrow habitat	X-2			X	X	X			X	X	X	X2	X	X	X		X-2					X
Known sensitive plant locations (<i>Lomatium concinnum</i>)		X			X				X				X	X	X	X						X
Potential rare plant species (<i>Lomatium concinnum</i>)	X-2	X2	X-2	X	X	X	X	X	X	X	X	X2	X	X2	X	X2	X-2	X-2	X	X2	X-2	X
Potential habitat for spotted bat			X-2				X	X		X		X2	X	X2	X			X-2				
Potential habitat for Townsend's big-eared bat, fringed myotis	X-2	X2	X-2	X	X	X	X	X	X	X	X	X2	X	X2	X	X2		X-2	X	X2	X-2	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	X2	X	X2	X	X		X				
Golden eagle active nest sites	X	X			X																	

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²Acres of impact reduced in Preferred Alternative due to deferral

Environmental Effects

Proposed Action

The proposed action of leasing the proposed parcels would not impact any Federally listed, BLM sensitive or migratory bird species. However, potential future development of the parcels may impact these species ([Table 3.11 TES1 above](#)). 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. 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."

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 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 would 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 TES species Stipulations

Parcel IDs	61189	61190	61193	61198	61202	61205	61206	61207	6197	6198	6199	6200	6201	6202	6203	6204	6205	6206	6207	
CO-34 TES Species	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					
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

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.

To reduce the potential environmental effects to bald eagles if development were to occur, stipulation UB-03 would be applied to parcels (6189, 6190, 6193, 6198, 6202, 6205, 6206, 6207):

Bald Eagle winter concentration areas UBRA Stipulation UB-03:

- To protect bald eagle winter concentration areas a no surface use seasonal timing limitation from December 1 through April 30 is required.

To reduce the potential environmental effects described above if development were to occur, the following Lease Notice should be applied to proposed parcel 6198:

Bald Eagle Winter Roost Sites UB-LN-14

Parcel: Portion of 6198; Legal Description: T14S R92W Sec. 28 W2NE, N2SE

- 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.

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 [Appendix F](#). The BLM will rely on CO-34 to fulfill its obligations under the Endangered Species Act with respect to all listed species.

In particular, the stipulation will be used should analysis show that activities in areas with high selenium concentrations would cause transport of selenium to surface waters containing Threatened or Endangered fish species. As stated in 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 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, stipulation LN UFO-04 should be applied to all parcels.

Raptor Nest Sites UB-LN-04

- The lessee is hereby notified that raptor nests may exist on portions of the lease tract. If raptor nests are present, seasonal constraints in the location of drilling operations may be required 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 3 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 No 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 acres vs. 2011.63 acres under proposed action). Additionally, through deferring of parcels or portions of parcels for steep slope concerns, impacts to some species would be reduced ([Table 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.

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 ([Table TES3 below](#)).

Table 3.13. TES3 -Parcels with TES species Stipulations

Parcel IDs	618 9	61 90	61 91	61 92	61 93	61 94	61 95	61 96	61 97	61 98	61 99	62 00	62 01	62 02	62 03	62 05	62 06	620 7	62 11	62 15	62 17	
CO-34	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	D	X			X					X				X		X	D	X2				
LN-14 Bald Eagle Winter Roost										X												
LN-04	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

²Acres of impact reduced in Preferred Alternative 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.

3.3.9. 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 6189, 6190 and 6103) and peregrine falcon (parcel 6200). 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 intensity, duration, and frequency of noise won't be known until the APD stage, and 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 5th 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 and Colorado Plateau Region (16)

Species	Estimated Population Trend
American Bittern	No Data
Brewer's Sparrow	-1.95
Golden Eagle	-1.29
Lewis' Woodpecker	-1.56
Willow Flycatcher	-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 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 migratory birds 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 migratory bird species or their habitat from the No Action Alternative.

3.3.10. Wildlife, Terrestrial (includes a finding on Standard 3)

Affected Environment

A variety of wildlife habitats and their associated species occur within the proposed parcels. 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. 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.

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

	619	618	617	616	615	614	613	612	611	610	609	608	607	606	605	604	603	602	601	600	599	598	597
Elk Winter Concentration Area		X	X2		X		X	X	X	X	X	X	X		X	X	X2	X2		X2	X2		
Mule Deer Critical Winter Range	X	X	X		X	X	X	X	X	X	X	X2	X	X2	X	X2		X2		X2			

²Acres 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 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. 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.

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 (Hebblewhite 2008, Sawyer 2006, 2009) indicate that residual unavoidable adverse impacts to ungulates increases dramatically when well pad densities exceed one pad/mile² (corresponding with a road density of approximately ½ mile of road/mile²) (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/mile² (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. UB-04 would be in effect for the following parcels

Parcel IDs	61 89	61 90	61 91	61 92	61 93	61 94	61 95	61 96	61 97	61 98	61 99	62 00	62 01	62 02	62 03	62 05	62 06	62 07	62 11	62 15	62 16	62 17
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

Where mineral development requires surface facility densities exceeding one well pad per square mile in big game crucial winter ranges, compensatory mitigation (improving adjacent habitats to the extent necessary to maintain existing big game populations) may be required.

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 No 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 reduced acres related to deferral of parcels or portions of parcels from 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 alternative A).

Cumulative Effects

The cumulative effects of the Preferred Alternative on terrestrial 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 ([Table 3.17 below](#)).

Table 3.17. UB-04 would be in effect for the following parcels:

Parcel IDs	61 89	61 90	61 91	6 1 9 2	61 93	61 94	61 95	61 96	61 97	61 98	61 99	62 00	62 01	6 2 0 2	62 03	62 05	62 06	62 07	6 2 1 1	62 15	62 17
UB-04 Big Game	X	X	X ²		X	X	X	X	X	X	X	X ²	X- 2	X	X	X- 2	X ²	X ²		X ²	X
LN-15 Big Game	X	X	X ²		X	X	X	X	X	X	X	X ²	X- 2	X	X	X- 2	X ²	X ²		X ²	X

²Acres 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 3 would be the same as described under the proposed action.

No Action Alternative

3.3.11. 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	6189	6190	6191	6192	6193	6194	6195	6196	6197	6198	6199	6200	6201	6202	6203	6205	6206	6207	6211	6215	6216	6217
Potential habitat for aquatic wildlife	X2		X2	X		X	X	X	X		X	X2	X	X2	X		X2	X2	X	X2		

²Acres of impact reduced in Preferred Alternative due to deferral

Environmental Consequences

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 was to occur, the following Lease Notices should be applied to parcels 6189, 6191, 6192, 6194, 6195, 6196, 6197, 6199, 6200, 6201, 6202, 6203, 6206, 6207, 6211, 6215 (all parcels with potential habitat for aquatic wildlife):

Aquatic Habitat UB-LN-16

May require moving surface-disturbing oil and gas exploration and development activities up to 200 meters away from the ordinary high water mark or wetland. These activities may require

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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.

3.3.12. Wetlands and Riparian Zones

Affected Environment

Some of the parcels contain riparian areas as shown in the [Table 3.19 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 3.19. Riparian Resources per Parcel

Parcel ID	Stream Name	Miles
6189	Bear Cr	0.6
	Slide Cr	0.3
	Pond Cr	0.1
6191	Jay Cr	1.1
	Foote Ditch	0.9
	Roatcap Cr	0.7

6192	Sams Cr	0.8
	Lake Fork Minnesota Cr	0.2
	Minnesota Cr	0.2
	Lion Gulch	0.03
6194	Sams Cr	0.1
	Minnesota Cr	0.03
6195	Love Gulch	1.2
	Jay Cr	1.1
	Short Draw (ephemeral)	0.9
6196	Jay Cr	0.7
	Short Draw (ephemeral)	0.6
6197	McDonald Cr	0.7
	Reynolds Cr	0.5
	Lucas Cr	0.5
6199	McDonald Cr	1.1
6200	Smith Fork	0.04
6202	Smith Fork	0.08
6203	McDonald Cr	2.6
	Cottonwood Cr	1.1
6206	North Fk Gunnison River	1.0
	Cottonwood Cr	0.8
	Thompson Cr (ephemeral)	0.8
	Anthracite Cr	0.3
6207	Terror Cr	0.9
	Coal Gulch	0.3
	North Fk Gunnison River	0.2
6215	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 man-made ponds, which have been mapped through analysis of aerial photography, and are listed by parcel in the [Table 3.20](#) below. 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 3.20. Natural or Man-made Ponds per Parcel.

Parcel IDs	6190	6194	6196	6197	6200	6201	6202	6203	6205	6206
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. Impacts would most likely take place along access roads and pipeline routes. 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. These include: 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 6189, 6191, 6192, 6194, 6195, 6196, 6197, 6199, 6200, 6201, 6202, 6203, 6205, 6206, 6207, 6215 to reduce the potential environmental effects described above.

1. Wetlands and Riparian Areas

Activities in or near riparian areas may require special engineering design, construction and implementation measures, including relocation of up to 200 meters away from the ordinary high water mark or riparian/wetland area.

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. 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 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 vegetation under the No Action Alternative.

3.3.13. 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.

3.3.14. 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:

1. Narrative Standards – Groundwater shall be free from pollutants that are in concentrations shown to be:
 - a. Carcinogenic, mutagenic, teratogenic, or toxic to human beings and/or,
 - b. A danger to the public health, safety, or welfare.
2. Numeric Standards – Classified by the commission within a specific area
 - a. Domestic Use - Quality (37 parameters)
 - b. Agricultural Use - Quality (21 parameters)
 - c. Surface Water Quality Protection
 - d. Potentially Usable Quality
 - e. Limited Use and Quality
3. Statewide Standards
 - a. Radioactive material standards (7 parameters)

- b. Interim organic pollutant standards (145 parameters)
4. 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. When there is an activity that affects or has the potential to affect groundwater quality, this information can be submitted 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.

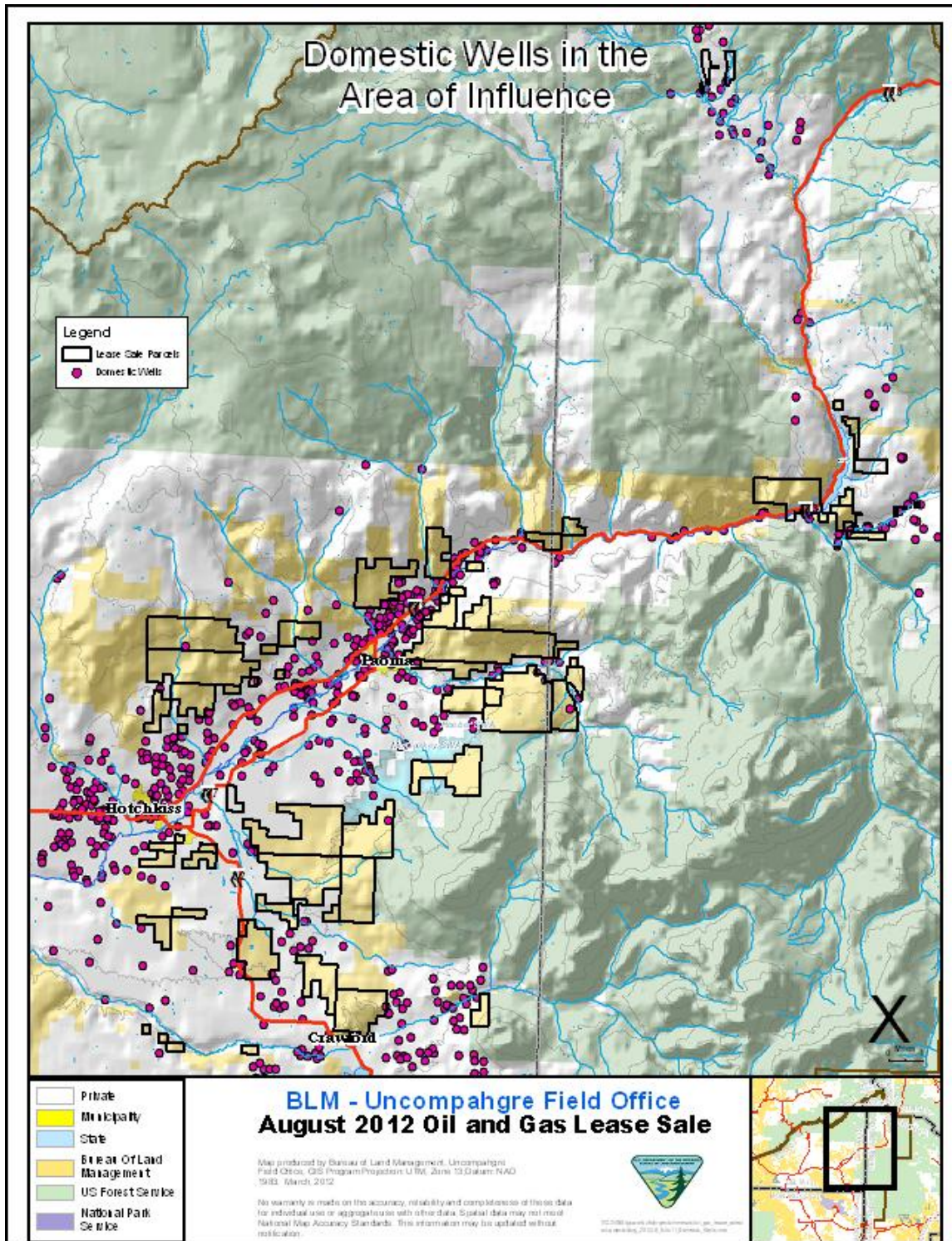


Figure 3.8. Depicts the wells within the Area of Influence in the CDWR database listed as “domestic wells” with issued permits.

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

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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.

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; 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, 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 Notices should be applied:

1. Municipal Watersheds and Public Water Supplies:

- Avoid surface occupancy within a 1,000-foot horizontal buffer around 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 Public Water Supply using a groundwater well or spring:
 1. Pitless drilling systems.
 2. Flowback and stimulation fluids contained within tanks that are placed on a well pad or in an area with down-gradient berming.
 3. Use of green completions.
 4. Notification of potentially impacted Public Water Systems 15 miles downstream.
 5. 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.
 6. 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 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 designated watersheds, a coordinated water resources monitoring plan may need to be developed with the BLM and Public Water Supplier. The sampling sites, intensity, and need for groundwater sampling, depending on site specific geology and risk, will be determined at the time of development.
 7. Sufficient surface casing should be extended through all fresh water domestic aquifer zones and should be drilled with fresh water mud. Cementing should comply with all Federal and State requirements to ensure aquifer integrity.
 8. Hydrologic studies may be required to ensure municipal and domestic springs are not degraded in volume or quality.

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 proportionality reduced.

Groundwater wells

In a review of the Colorado Division of Water Resources well permit database, there are approximately 81 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.

3.3.15. 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, revised in 2002, granting authority to the Colorado Water Quality Control Commission 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 Water Quality Classifications](#) below lists the water quality classifications for the surface waters influenced by the Lease parcels:

Table 3.21. Water Quality Classifications

4th Level Watershed	Stream Segment	Stream Classification 1-5
	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	Aq Life Cold 1 Recreation P Water Supply Agriculture

	its source to its confluence with the North Fork of the Gunnison.	
	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](#) below 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

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:

1. 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
2. form floating debris, scum, or other surface materials sufficient to harm existing beneficial uses; or
3. 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
4. are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life; or
5. produce a predominance of undesirable aquatic life; or
6. cause a film on the surface or produce a deposit on shorelines.

Selenium

Selenium is a naturally occurring soluble 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 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."

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.

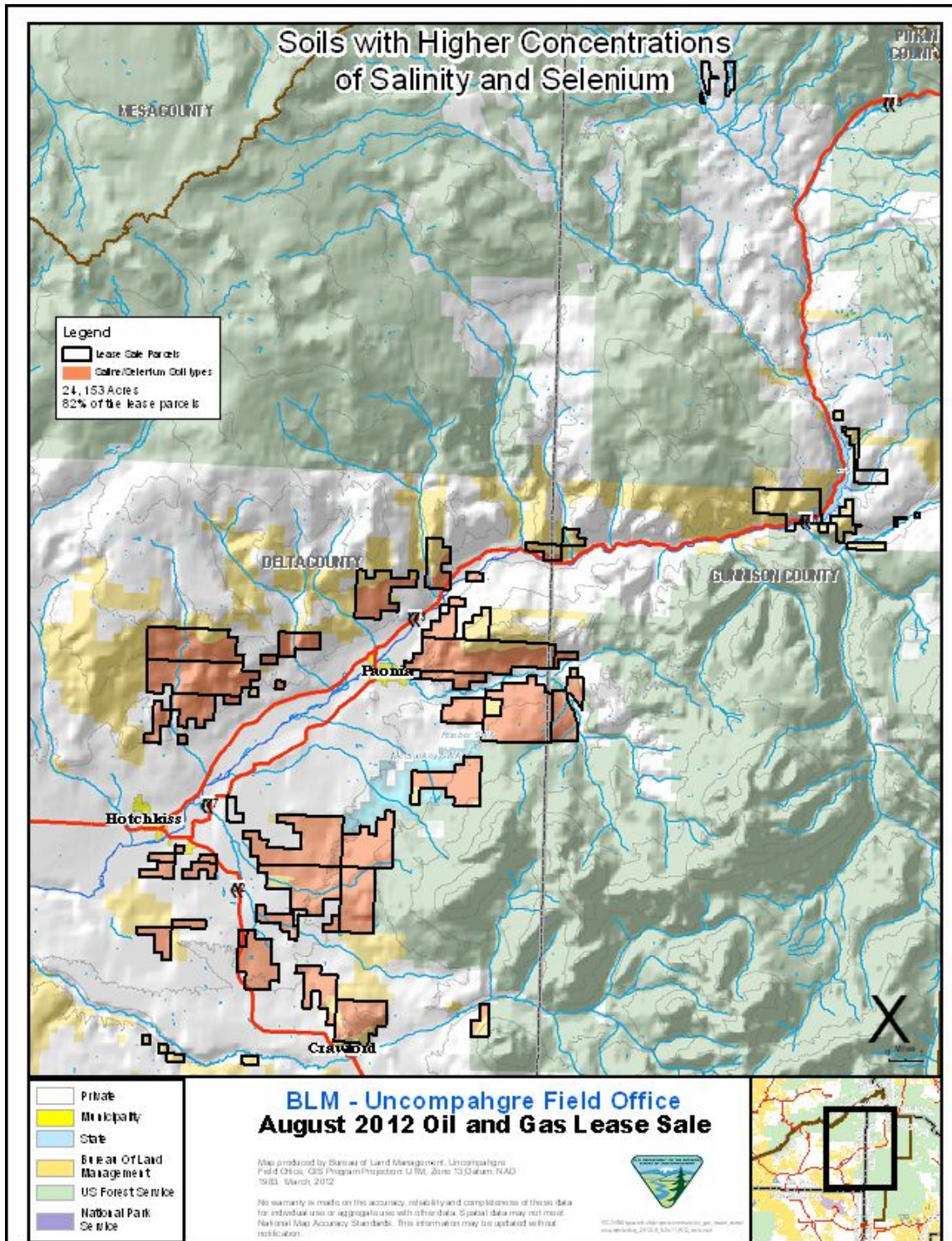


Figure 3.9. Depicts the lease parcel area and those portions of the parcels with soil types derived from Mancos Shale.

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

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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 contaminate source inventory in 2004 are shown in the [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

None of the Municipal Water Suppliers above have developed a protection plan. In the absence of protection plans, those Municipal Water Suppliers submitted comments to the BLM with varying methodologies of determining the lease parcels that may affect their water supplies.

In addition to the Municipalities with completed source water assessments, there are numerous small water providers in the area, some regulated by the State of Colorado if they serve more than 25 taps, and some that serve fewer than 25 taps. Several of these Public Water Systems have source water assessments completed by the State, but again, 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 Affected by Proposed Parcels-Provided by Public Input.

Parcel IDs	6189	6190	6191	6192	6193	6194	6195	6196	6197	6198	6199	6200	6201	6202	6203	6204	6205	6206	6207	6211	6212	6213	6214	6215	
Surface Water Supplies																									
Town of Hotchkiss			X				X	X																	
Mountain Coal Company																	X								
Bowie																			X						
Groundwater Supplies																									
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. WQ2 below](#) 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. WQ2. Irrigation Providers Affected by Proposed Parcels as Provided by Public Input

Parcel IDs	6189	6190	6191	6192	6193	6194	6195	6196	6197	6198	6199	6200	6201	6202	6203	6204	6205	6206	6207	6211	6212	6213	6214	6215	
Irrigation Ditch Companies																									

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	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	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									

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.

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. None of the other parameters exceeded State acute or chronic standards (ERO, 2011). Selenium was not included in the suite of dissolved metals.

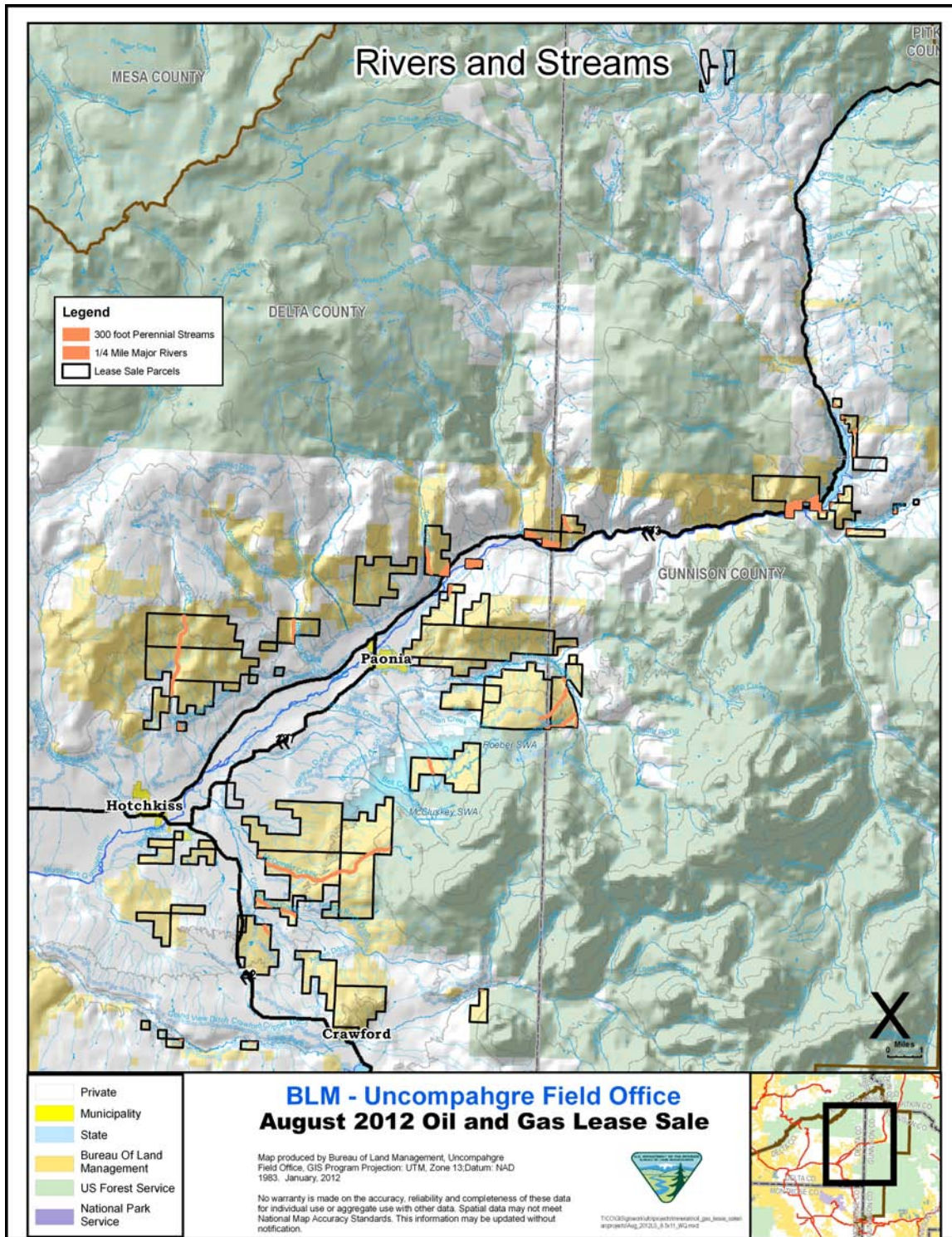


Figure 3.10. Rivers and Streams

Environmental Effects

Proposed Action

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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. 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 3.3.5, 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:

1.) Municipal Watersheds and Public Water Supplies:

- 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

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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.

- Apply the following protective measures within a distance greater than 1,000 horizontal feet but less than 2,640 horizontal feet 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:
 1. Pitless drilling systems.
 2. Flowback and stimulation fluids contained within tanks that are placed on a well pad or in an area with down-gradient berming.
 3. Use of green completions.
 4. Notification of potentially impacted Public Water Systems 15 miles downstream.
 5. 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.
 6. Collection of baseline water quality data (surface and/or groundwater) consisting of a pre-drilling sample collected beginning within 100 feet of well pad, or where sufficient water exists to collect a sample per 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 designated watersheds, a coordinated water resources monitoring plan must be developed with the BLM and Public Water Supplier. The sampling sites, intensity, and need for groundwater sampling, depending on site specific geology and risk, will be determined at the time of development.

2.) Protection of Surface Waters within the lease area.

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.
- Use of green completions.
- 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]). The sampling sites, intensity, and need for groundwater sampling, depending on site specific geology and risk, will be determined at the time of development.

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, the same public water systems would continue to be affected as described in the Proposed Action as provided by public input.

Water Rights

There are approximately 46 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, the same irrigation providers would continue to be affected as described in the Proposed Action as provided by public input.

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.

3.3.16. 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.

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.

3.3.17. 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.

3.3.18. Access

Affected Environment

Various types of existing access routes (highways, county roads, BLM roads) will be utilized to access the proposed lease parcels. 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, construction standards will be determined on a case-by-case basis as appropriate for the local topography, soils, vegetation and amount and type of traffic.

Cumulative Effects

At the development phase, conditions of approval will be applied to minimize cumulative effects to existing access routes and minimize construction of new routes.

Mitigation

Upon submission of an actual 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.

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.

3.3.19. 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 development is proposed. At the APD stage, further analysis will be conducted, including analysis of transportation/access. If subsequent development were to occur, traffic could increase with possible delays in some areas depending on the proposed level of development.

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. At the development phase, conditions of approval will be applied to minimize cumulative effects to highways, county roads, and existing and/or designated routes and minimize construction of new routes.

Mitigation

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 03) in order to encourage appropriate transportation considerations be applied to proposals to explore or develop the fluid mineral resources from the nominated parcels.

1. The lease area is within a Limited Off-Highway Vehicle (OHV) designation area.

Motorized and mechanized travel is 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: 6215, 6216, 6206, 6207, 6205, 6190, 6189, 6192, 6194, 6197, 6193, 6191, 6198, 6195, 6196, 6199, 6203, 6200, 6201, 6217, and 6202.

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: 6215, 6206, 6207, 6205, 6190, 6189, 6192, 6194, 6197, 6193, 6191, 6198, 6195, 6196, 6199, 6203, 6200, 6201, 6217, and 6202.

No Action Alternative

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

3.3.20. Realty Authorizations

Affected Environment

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.

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

At the development phase, conditions of approval will be applied to minimize cumulative effects to existing facilities.

Mitigation

Upon submission of an actual development proposal, 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 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.

*Chapter 3 Affected Environment and
Environmental Effects:
No Action Alternative*

Further, pursuant to an Interagency Agreement (IA) between BLM and Reclamation in 1983, BLM will not issue permits, leases, or licenses on acquired or withdrawn lands under Reclamation's management without Reclamation's consent and concurrence on all conditions and stipulations.

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

1. BLM Authorized Facilities

Authorized facilities are likely to be present on the proposed lease parcels on Federal surface. The lessee shall 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.

In addition, Parcel 6206 includes some Reclamation withdrawn lands and facilities for the Paonia Project, including portions of the Paonia Reservoir and Paonia State Park. In accordance with the Interagency Agreement mentioned above it is recommended that BLM defer the withdrawn Reclamation lands upon the parcel in order to protect Reclamation facilities.

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 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.

3.3.21. Range Management

Affected Environment

There are several livestock grazing allotments within the proposed August 2012 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 (e.g. 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

The act of leasing oil and gas parcels has no direct potential impact on livestock grazing within the area. However, the initial exploration and development activities that might be proposed as a result of leasing activities would. These activities would increase roads and other types of infrastructure in the proposed lease areas. The effects of this infrastructure, especially roads and the increase in use of the area could lead to increased harassment of livestock, grazing strategies foiled due to gates being left open, and increases in livestock losses, especially calves, due to increases in diseases (e.g. dust pneumonia).

Mitigation

Upon submission of an application to drill, Conditions of Approval will be attached to the permit to drill 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.

3.3.22. 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 6191, 6195, and 6196) and the 1996 Converse Fire (parcel 6207), have occurred on over 4000 acres of the landscape. In 1999, about 130 acres of prescribed fire, was used in and near parcel 6200, as part of the Sand Mountain Prescribed Fire. Currently, fuel mitigation treatments are taking place on about 526 acres, on and near parcels 6207, 6205, and 6190, 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 6196, 6197, 6199, and 6194.

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.

3.3.23. 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.

1. Lease Notice UFO-LN-07 Noise

The lessee is hereby notified that, the operator drilling on Federal mineral estate shall 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 will be expected 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.

The lessee shall 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.

3.3.24. Recreation

Affected Environment

The nominated lease parcels are within areas that are sparsely populated which allows for dispersed recreational opportunities. Recreational uses include sightseeing tours, boating, big game and small game hunting, mountain lion hunting, Off-Highway Vehicle (OHV) riding, mountain biking, horseback riding, 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 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.

3.3.25. 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 30 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

Parcel #	Approximate Acreage	1989 RMP VRM Class
6189	191	Assumed III*
6189	155	III
6190	994	Assumed III*
6190	1465	III
6191	95	Assumed III*
6191	2134	III
6192	831	III
6193	327	Assumed III*
6193	698	III
6194	2080	III
6195	118	Assumed III*
6195	1881	III
6196	72	Assumed III*
6196	1057	III
6197	1516	III
6197	806	Assumed III*
6198	1005	Assumed III*
6198	1367	III
6199	1072	III
6199	204	Assumed III*
6200	1389	Assumed III*
6201	1757	Assumed III*
6202	1246	Assumed III*
6203	1708	III
6203	429	Assumed III*
6205	609	Assumed III*
6205	182	III
6206	1617	Assumed III*
6207	1161	Assumed III*
6207	975	III
6211	296	Assumed III*
6215	437	Assumed III*
6216	106	Assumed III*
6217	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: 6207, 6215, 6195, 6206, 6216, 6189, 6205, 6202, 6198, 6217, 6201, 6203, and 6200.

All or portions of the following parcels are adjacent to the nearby communities of Crawford, Hotchkiss, and Paonia: 6193, 6190, 6200, and 6198.

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 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 06) in order to encourage appropriate visual considerations be applied to proposals to explore or develop the fluid mineral resources from the nominated parcels.

1. 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: 6207, 6215, 6195, 6206, 6216, 6189, 6205, 6202, 6198, 6217, 6201, 6203, 6200, 6193, and 6190.

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: 6207, 6215, 6195, 6206, 6205, 6202, 6198, 6217, 6201, 6203, 6200, 6193, and 6190.

No Action Alternative

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

3.3.26. 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:

6189: Km, Kmv; 6190: Km, Kmv; 6191: Km, Kmv; 6192: Km; 6193: Km; 6194: Km;

6195: Km; 6196: Km; 6197: Km; 6198: Km; 6199: Km; 6200: Km, Tmi; 6201: Km;

6202: Jmwe, Km; 6203: Km; 6205: Km, Kmv; 6206: Kmv, Two; 6207: Km, Kmv;

6211: Two; 6215: Kmv, Two; 6216: Kmv, Two; 6217: 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 [spell out] (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

Environmental impacts to specific geologic formations and mineral resources would be analyzed at the APD stage.

Cumulative Effects

None

Mitigation

It is recommended that all or portions of parcels 6189, 6190, 9191, 6192, 6205, 6206, 6207, 6215, and 6216 have stipulation UB-10 "COALBED METHANE/COAL MINING STIPULATION" applied (see Attachment C).

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 6189, 6191, 6192, 6206, 6207 have stipulation UB-10 "COALBED METHANE/COAL MINING STIPULATION" applied (see Attachment C).

No Action Alternative

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

3.3.27. 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.

3.3.28. Socio-Economics

Affected Environment

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 29,811.68 acres (7.8%). 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 43 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, whether deserved or not, 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). Much of the tourists to the area are drawn by the natural amenities, participating in dispersed camping, hunting, and other outdoor activities. Lastly, it would be fair to assume that a majority of the retirees, representing nearly a third of all income in the area, have elected to live in the valley due in some part to the presence of the local natural amenities.

Parcels nominated for lease are offered for sale during an oral auction. The minimum acceptable bid for a parcel is \$2.00 per acre. Because the sale is conducted as an auction, the minimum bid is often increased, sometimes substantially, until bidding ceases. The increased bid is called a bonus bid. The sum of the minimum bid and the bonus bid, if any, is collected the day of the sale. Additionally the first year's rental of \$1.50 an acre or fraction of an acre must be paid at the time of the sale. Annual rental is \$1.50 per acre or fraction of an acre for the first five years of the lease term, increasing to \$2.00 per acre or fraction of an acre for any subsequent year. Because parcels are auctioned, there can be no guarantee that each parcel will be sold, and an estimate cannot be made in advance of the sale of the revenue produced from selling the parcels.

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. Therefore, this EA discusses potential effects that could occur in the event of development.

Economic benefits from developing leases would include increased revenue to federal, state and local governments due to royalty payments. Positive economic impacts to the area would be 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 minor 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. 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 would likely affect consumer's perceptions about the area in the long-term, serving to negatively impact local agriculture, tourism, and the attraction to retirees. These impacts could result in significant economic costs to the North Fork Valley that may or may not outweigh the benefits derived from well development. These various effects would need to be examined closely during the APD process, once exact locations of wells were determined, to measure the overall 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 43 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 EA proposes another 29,811.68 acres be leased. 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

In terms of the economic costs of development, as explained in the proposed action, the local community could use part or all of its share of leasing and royalty payments to alleviate negative economic costs to the community.

Preferred Alternative

The direct and indirect effects of the Preferred Alternative on socio-economics 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 socio-economics 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

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.

Chapter 4. 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.

Chapter 5. List of Preparers

Table 5.1. List of Preparers

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, Socio-Economics
Linda Reed	Realty Specialist	Access, Realty Authorizations
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
Teresa Pfifer	Lands and Realty Staff Supervisor	Access, Realty Specialist
Chad Meister	COSO Air Quality	Air Quality and Climate Change
David Epstein	COSO Socio-Economics	Socio-Economics

Appendix A. Legal Descriptions: Parcels Nominated for Lease

[Appendix A](#)

ATTACHEMENT A

NOMINATED LANDS
December 12,2011
NOTICE OF COMPETITIVE LEASE SALE
OIL AND GAS

The Colorado State Office is offering competitively 23 parcels containing 30733.550 acres of Federal lands in the State of Colorado for oil and gas leasing on August 9th, 2012. 22 of the oil and gas parcels totaling 28911.680 acres are located on Federal lands managed by the Uncompahgre Field Office in the State of Colorado. The Grand Junction Field Office includes one of these parcels (6204) totaling 921.870 Acres of Federal lands in the State of Colorado available for oil and gas leasing.

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: 6217 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: 6215 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 466.320 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.

ATTACHEMENT A

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: 6206 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 1681.030 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;

ATTACHEMENT A

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: 6216 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: 6211 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: 6189 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

ATTACHEMENT A

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: 6192 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;
Sec. 7: Lot 1-4;
Sec. 7: E2W2;
Sec. 7: E2;
Sec. 7: EXCEL HES 104 & 87;

Gunnison County
Colorado 679.470 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;

ATTACHEMENT A

Sec. 6: SENE;

BLM; MDO: UBRA

PARCEL ID: 6190 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: 6205 SERIAL #:

T. 0130S., R 0910W., 6TH PM
Sec. 27: NENE,S2NE,E2SW,SE;
Sec. 28: E2,E2SW,SWSW;

Delta County
Colorado 800.000 Acres

ATTACHEMENT A

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: 6207 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

ATTACHEMENT A

Sec. 13: Lot 1,2;
Sec. 13: NE;
Sec. 16: Lot 3-5,7-11;
Sec. 19: Lot 2-4;
Sec. 19: SWNE,E2NE,SE,SW,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,SE,SW;
Sec. 20: Lot 1;
Sec. 21: Lot 2;

BLM; MDO: UBRA

PARCEL ID: 6193 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: 6194 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;

ATTACHEMENT A

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: 6197 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: 6199 SERIAL #:

T. 0150S., R 0910W., 6TH PM
Sec. 6: Lot 1-7;

ATTACHEMENT A

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.

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,SENW,NESW;

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

BLM; MDO: UBRA

PARCEL ID: 6200 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.

BLM; MDO: UBRA

PARCEL ID: 6191 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

ATTACHEMENT A

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: 6195 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

ATTACHEMENT A

PARCEL ID: 6196 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.

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: 6198 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.

The following lands are subject to Exhibit UB-01 to protect highly erodible and/or saline soil areas:

ATTACHEMENT A

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: 6201 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,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;

ATTACHEMENT A

BLM; MDO: UBRA

PARCEL ID: 6202 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: SENW;
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: 6203 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

ATTACHEMENT A

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

Appendix B. Legal Descriptions: Parcels Available for Lease with Deferred Portions. Proposed Action

[Appendix B](#)

ATTACHMENT B

PROPOSED ACTION

**Parcels Available for Lease with Deferred Portions
August 2012 - Colorado Competitive Oil & Gas Lease Sale**

PARCEL ID: 6206 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 1681.030 Acres

DEFER THE FOLLOWING WITHDRAWN RECLAMATION LANDS TO PROTECT RECLAMATION FACILITIES.

PARCEL ID: 6206 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 445.880 Acres

Appendix C. Legal Descriptions: Parcels Available for Lease with Applied Stipulations and Lease Notices. Proposed Action

[Appendix C](#)

ATTACHMENT C

PROPOSED ACTION

Parcels Available for Lease with Applied Stipulations August 2012 - Colorado Competitive Oil & Gas Lease Sale

The Colorado State Office is offering competitively 22 parcels containing 28911.680 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: 6217 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 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-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit LN-19 to protect Surface 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.
All lands are subject to Exhibit LN-22 to protect Air Quality.
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-03 to limit impacts from motorized and mechanized use

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: 6215 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 466.320 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-15 to protect Big Game Crucial Winter Habitats.
All lands are subject to Exhibit LN-16 to protect Wildlife, Aquatic.
All lands are subject to Exhibit LN-17 to protect Wetlands and Riparian Zones.
All lands are subject to Exhibit LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit LN-19 to protect Surface 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.
All lands are subject to Exhibit LN-22 to protect Air Quality.
All lands are subject to Exhibit LN-12 to protect Wild and Scenic Rivers.

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: 6206 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 Wildlife, Aquatic.
All lands are subject to Exhibit LN-17 to protect Wetlands and Riparian Zones.
All lands are subject to Exhibit LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit LN-19 to protect Surface 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.
All lands are subject to Exhibit LN-22 to protect Air Quality.

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: 6216 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 Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-19 to protect Surface 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.

All lands are subject to Exhibit LN-22 to protect Air Quality.

BLM; MDO: UBRA

PARCEL ID: 6211 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 Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-19 to protect Surface 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.

All lands are subject to Exhibit LN-22 to protect Air Quality.

PVT/BLM; MDO: UBRA

PARCEL ID: 6189 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 Wildlife, Aquatic.

All lands are subject to Exhibit LN-17 to protect Wetlands and Riparian Zones.

All lands are subject to Exhibit LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-19 to protect Surface 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.

All lands are subject to Exhibit LN-22 to protect Air Quality.

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: 6192 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;
Sec. 7: Lot 1-4;
Sec. 7: E2W2;
Sec. 7: E2;
Sec. 7: EXCEL HES 104 & 87;

Gunnison County
Colorado 679.470 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 Wildlife, Aquatic.
All lands are subject to Exhibit LN-17 to protect Wetlands and Riparian Zones.
All lands are subject to Exhibit LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit LN-19 to protect Surface 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.
All lands are subject to Exhibit LN-22 to protect Air Quality.

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: 6190 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 Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit LN-19 to protect Surface 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.
All lands are subject to Exhibit LN-22 to protect Air Quality.

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: 6205 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-17 to protect Wetlands and Riparian Zones.
All lands are subject to Exhibit LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit LN-19 to protect Surface 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.
All lands are subject to Exhibit LN-22 to protect Air Quality.

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: 6207 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.

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 Wildlife, Aquatic.
All lands are subject to Exhibit LN-17 to protect Wetlands and Riparian Zones.
All lands are subject to Exhibit LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit LN-19 to protect Surface 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.
All lands are subject to Exhibit LN-22 to protect Air Quality.

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: 6193 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 Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-19 to protect Surface 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.

All lands are subject to Exhibit LN-22 to protect Air Quality.

BLM; MDO: UBRA

PARCEL ID: 6194 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 Wildlife, Aquatic.

All lands are subject to Exhibit LN-17 to protect Wetlands and Riparian Zones.

All lands are subject to Exhibit LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-19 to protect Surface 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.

All lands are subject to Exhibit LN-22 to protect Air Quality.

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: 6197 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 Wildlife, Aquatic.

All lands are subject to Exhibit LN-17 to protect Wetlands and Riparian Zones.

All lands are subject to Exhibit LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-19 to protect Surface 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.

All lands are subject to Exhibit LN-22 to protect Air Quality.

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: 6199 SERIAL #:

T. 0150S., R 0910W., 6TH PM
Sec. 6: Lot 1-7;
Sec. 6: S2NE,SE,SW,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 Wildlife, Aquatic.
All lands are subject to Exhibit LN-17 to protect Wetlands and Riparian Zones.
All lands are subject to Exhibit LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit LN-19 to protect Surface 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.
All lands are subject to Exhibit LN-22 to protect Air Quality.

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,SW,SE;

BLM; MDO: UBRA

PARCEL ID: 6200 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,SW,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.

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 Wildlife, Aquatic.

All lands are subject to Exhibit LN-17 to protect Wetlands and Riparian Zones.

All lands are subject to Exhibit LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-19 to protect Surface 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.

All lands are subject to Exhibit LN-22 to protect Air Quality.

BLM; MDO: UBRA

PARCEL ID: 6191 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 Wildlife, Aquatic.

All lands are subject to Exhibit LN-17 to protect Wetlands and Riparian Zones.

All lands are subject to Exhibit LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-19 to protect Surface 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.
All lands are subject to Exhibit LN-22 to protect Air Quality.

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: 6195 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 Wildlife, Aquatic.
All lands are subject to Exhibit LN-17 to protect Wetlands and Riparian Zones.
All lands are subject to Exhibit LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit LN-19 to protect Surface 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.
All lands are subject to Exhibit LN-22 to protect Air Quality.

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: 6196 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.

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 Wildlife, Aquatic.

All lands are subject to Exhibit LN-17 to protect Wetlands and Riparian Zones.

All lands are subject to Exhibit LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-19 to protect Surface 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.

All lands are subject to Exhibit LN-22 to protect Air Quality.

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: 6198 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.

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 Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit LN-19 to protect Surface 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.
All lands are subject to Exhibit LN-22 to protect Air Quality.

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., 6TH PM
Sec. 28: W2NE, N2SE

PVT/BLM;BLM; MDO: UBRA

PARCEL ID: 6201 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 Wildlife, Aquatic.
All lands are subject to Exhibit LN-17 to protect Wetlands and Riparian Zones.
All lands are subject to Exhibit LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit LN-19 to protect Surface 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.
All lands are subject to Exhibit LN-22 to protect Air Quality.

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: 6202 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.

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 Wildlife, Aquatic.

All lands are subject to Exhibit LN-17 to protect Wetlands and Riparian Zones.

All lands are subject to Exhibit LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit LN-19 to protect Surface 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.

All lands are subject to Exhibit LN-22 to protect Air Quality.

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: 6203 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 Wildlife, Aquatic.
All lands are subject to Exhibit LN-17 to protect Wetlands and Riparian Zones.
All lands are subject to Exhibit LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit LN-19 to protect Surface 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.
All lands are subject to Exhibit LN-22 to protect Air Quality.

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

Appendix D. Legal Descriptions: Parcels Available for Lease with Deferred Portions. Preferred Alternative

[Appendix D](#)

ATTACHMENT D

PREFERRED ALTERNATIVE

Parcels Available for Lease with Deferred Portions

August 2012 - Colorado Competitive Oil & Gas Lease Sale

PARCEL ID: 6215 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 466.320 Acres

DEFER THE FOLLOWING LANDS FOR CONSISTING OF STEEP SLOPES >40%:

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

Gunnison County
Colorado 220.000 Acres

PARCEL ID: 6206 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 1681.030 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;

Gunnison County
Colorado 445.880 Acres

DEFER THE FOLLOWING LANDS FOR CONSISTING OF STEEP SLOPES >40%:

T. 0130S., R 0890W., 6TH PM
Sec. 2: Lot 36;
Sec. 5: Lot 15;
Sec. 5: SW,N2SE,NESE;
Sec. 6: Lot 17-19, 2122;
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 1035.150 Acres

PARCEL ID: 6216 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 FOR CONSISTING OF STEEP SLOPES >40%:

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

Gunnison County
Colorado 105.970 Acres

PARCEL ID: 6189 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 FOR CONSISTING OF STEEP SLOPES >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: 6190 SERIAL #:

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

Delta County
Colorado 2471.370 Acres

DEFER THE FOLLOWING LANDS FOR CONSISTING OF STEEP SLOPES >40%:

T. 0130S., R 0910W., 6TH PM
Sec. 33: ALL;
Sec. 34: N2;
Sec. 35: N2;
Sec. 36: Lot 1-8;

Delta County
Colorado 949.540 Acres

PARCEL ID: 6205 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 FOR CONSISTING OF STEEP SLOPES >40%:

T. 0130S., R 0910W., 6TH PM
Sec. 27: NENE,S2NE,E2SW,SE;

Delta County
Colorado 360.000 Acres

PARCEL ID: 6207 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

DEFER THE FOLLOWING LANDS FOR CONSISTING OF STEEP SLOPES >40%:

T. 0130S., R 0910W., 6TH PM
Sec. 13: Lot 1,2;
Sec. 13: W2NE, SENE;
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: 6200 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 FOR CONSISTING OF STEEP SLOPES >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: 6191 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 FOR CONSISTING OF STEEP SLOPES >40%:

T. 0130S., R 0920W., 6TH PM
Sec. 34: Lot 1-3,7,8;
Sec. 35: Lot 1-9;

Delta County
Colorado 547.350 Acres

PARCEL ID: 6202 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

DEFER THE FOLLOWING LANDS FOR CONSISTING OF STEEP SLOPES >40%.

PARCEL ID: 6202 SERIAL #:

T. 0150S., R 0920W., 6TH PM
Sec. 31: Lot 6;
Sec. 32: S2SW;
Sec. 34: SESW,SWSE;

Delta County
Colorado 201.460 Acres

Appendix E. Legal Descriptions: Parcels Available for Lease with Applied Stipulations and Lease Notices. Preferred Alternative

[Appendix E](#)

**ATTACHMENT E
PREFERED ALTERNATIVE**

**Parcels Available for Lease with Applied Stipulations
August 2012 - Colorado Competitive Oil & Gas Lease Sale**

The Colorado State Office is offering competitively 21 parcels containing 24324.050 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: 6217 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 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 Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit UFO LN-19 to protect Surface 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.

All lands are subject to Exhibit UFO LN-22 to protect Air Quality.

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: 6215 SERIAL #:

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

Gunnison County
Colorado 246.320 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 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 Wildlife, Aquatic.

All lands are subject to Exhibit UFO LN-17 to protect Wetlands and Riparian Zones.

All lands are subject to Exhibit UFO LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit UFO LN-19 to protect Surface 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.

All lands are subject to Exhibit UFO LN-22 to protect Air Quality.

BLM; MDO: UBRA

PARCEL ID: 6206 SERIAL #:

T. 0130S., R 0890W., 6TH PM
Sec. 5: Lot 16-18;
Sec. 5: NWSE
Sec. 6: Lot 20;

Gunnison County
Colorado 200.000 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-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-15 to protect Big Game Crucial Winter Habitats.
All lands are subject to Exhibit UFO LN-16 to protect Wildlife, Aquatic.
All lands are subject to Exhibit UFO LN-17 to protect Wetlands and Riparian Zones.
All lands are subject to Exhibit UFO LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit UFO LN-19 to protect Surface 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.
All lands are subject to Exhibit UFO LN-22 to protect Air Quality.

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

T. 0130S., R 0890W., 6TH PM
Sec. 5: Lot 18;
Sec. 5: NWSE;
Sec. 6: Lot 20;

PVT/BLM;BLM; MDO: UBRA

PARCEL ID: 6211 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 Wildlife, Aquatic.
All lands are subject to Exhibit UFO LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit UFO LN-19 to protect Surface 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.
All lands are subject to Exhibit UFO LN-22 to protect Air Quality.

PVT/BLM; MDO: UBRA

PARCEL ID: 6189 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.

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 Wildlife, Aquatic.

All lands are subject to Exhibit UFO LN-17 to protect Wetlands and Riparian Zones.

All lands are subject to Exhibit UFO LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit UFO LN-19 to protect Surface 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.

All lands are subject to Exhibit UFO LN-22 to protect Air Quality.

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

Sec. 31: Lot 12;

BLM; MDO: UBRA

PARCEL ID: 6192 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;

Sec. 7: Lot 1-4;

Sec. 7: E2W2;

Sec. 7: E2;

Sec. 7: EXCEL HES 104 & 87;

Gunnison County

Colorado 679.470 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 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-16 to protect Wildlife, Aquatic.
All lands are subject to Exhibit UFO LN-17 to protect Wetlands and Riparian Zones.
All lands are subject to Exhibit UFO LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit UFO LN-19 to protect Surface 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.
All lands are subject to Exhibit UFO LN-22 to protect Air Quality.

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: 6190 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 1521.830 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 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 Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit UFO LN-19 to protect Surface 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.
All lands are subject to Exhibit UFO LN-22 to protect Air Quality.

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: S2;
Sec. 35: SW,NESE,W2SE;
Sec. 36: Lot 9-12;

BLM; MDO: UBRA

PARCEL ID: 6205 SERIAL #:

T. 0130S., R 0910W., 6TH PM
Sec. 28: E2,E2SW,SWSW;

Delta County
Colorado 440.000 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-17 to protect Wetlands and Riparian Zones.
All lands are subject to Exhibit UFO LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit UFO LN-19 to protect Surface 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.
All lands are subject to Exhibit UFO LN-22 to protect Air Quality.

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;

BLM; MDO: UBRA

PARCEL ID: 6207 SERIAL #:

T. 0130S., R 0910W., 6TH PM

Sec. 13: NENE;
Sec. 19: Lot 1-4;
Sec. 19: E2,SENE,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.

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 Wildlife, Aquatic.

All lands are subject to Exhibit UFO LN-17 to protect Wetlands and Riparian Zones.

All lands are subject to Exhibit UFO LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit UFO LN-19 to protect Surface 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.

All lands are subject to Exhibit UFO LN-22 to protect Air Quality.

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,SE,SW;

BLM; MDO: UBRA

PARCEL ID: 6193 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 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 Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit UFO LN-19 to protect Surface 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.

All lands are subject to Exhibit UFO LN-22 to protect Air Quality.

BLM; MDO: UBRA

PARCEL ID: 6194 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.

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 Wildlife, Aquatic.
All lands are subject to Exhibit UFO LN-17 to protect Wetlands and Riparian Zones.
All lands are subject to Exhibit UFO LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit UFO LN-19 to protect Surface 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.
All lands are subject to Exhibit UFO LN-22 to protect Air Quality.

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: 6197 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 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 Wildlife, Aquatic.

All lands are subject to Exhibit UFO LN-17 to protect Wetlands and Riparian Zones.

All lands are subject to Exhibit UFO LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit UFO LN-19 to protect Surface 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.

All lands are subject to Exhibit UFO LN-22 to protect Air Quality.

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;

BLM; MDO: UBRA

PARCEL ID: 6199 SERIAL #:

T. 0150S., R 0910W., 6TH PM

Sec. 6: Lot 1-7;

Sec. 6: S2NE,SE,SW,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 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 Wildlife, Aquatic.
All lands are subject to Exhibit UFO LN-17 to protect Wetlands and Riparian Zones.
All lands are subject to Exhibit UFO LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit UFO LN-19 to protect Surface 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.
All lands are subject to Exhibit UFO LN-22 to protect Air Quality.

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,SENW,NESW;

BLM; MDO: UBRA

PARCEL ID: 6200 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 Wildlife, Aquatic.
All lands are subject to Exhibit UFO LN-17 to protect Wetlands and Riparian Zones.
All lands are subject to Exhibit UFO LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit UFO LN-19 to protect Surface 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.
All lands are subject to Exhibit UFO LN-22 to protect Air Quality.

BLM; MDO: UBRA

PARCEL ID: 6191 SERIAL #:

T. 0130S., R 0920W., 6TH PM
Sec. 31: Lot 5-20;
Sec. 32: Lot 1-16;
Sec. 33: Lot 3-10;

Delta County
Colorado 1681.540 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 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 Wildlife, Aquatic.
All lands are subject to Exhibit UFO LN-17 to protect Wetlands and Riparian Zones.
All lands are subject to Exhibit UFO LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit UFO LN-19 to protect Surface 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.
All lands are subject to Exhibit UFO LN-22 to protect Air Quality.

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: 6195 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 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 Wildlife, Aquatic.
All lands are subject to Exhibit UFO LN-17 to protect Wetlands and Riparian Zones.
All lands are subject to Exhibit UFO LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit UFO LN-19 to protect Surface 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.
All lands are subject to Exhibit UFO LN-22 to protect Air Quality.

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: 6196 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.

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 Wildlife, Aquatic.
All lands are subject to Exhibit UFO LN-17 to protect Wetlands and Riparian Zones.
All lands are subject to Exhibit UFO LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit UFO LN-19 to protect Surface 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.
All lands are subject to Exhibit UFO LN-22 to protect Air Quality.

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: 6198 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.

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 Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit UFO LN-19 to protect Surface 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.
All lands are subject to Exhibit UFO LN-22 to protect Air Quality.

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 UFO LN-14 to protect Bald Eagle Winter Roost Sites:

T. 0140S., R0920W., 6TH PM
Sec. 28: W2NE, N2SE

PVT/BLM;BLM; MDO: UBRA

PARCEL ID: 6201 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-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 Wildlife, Aquatic.
All lands are subject to Exhibit UFO LN-17 to protect Wetlands and Riparian Zones.
All lands are subject to Exhibit UFO LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit UFO LN-19 to protect Surface 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.
All lands are subject to Exhibit UFO LN-22 to protect Air Quality.

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,SE,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: 6202 SERIAL #:

T. 0150S., R 0920W., 6TH PM
Sec. 4: Lot 4;
Sec. 4: SWNW;
Sec. 5: Lot 1,2;
Sec. 5: SWNE,SE,SENW;
Sec. 6: Lot 1,2,5;
Sec. 6: S2NE,SE,SENW;
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.

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 Wildlife, Aquatic.
All lands are subject to Exhibit UFO LN-17 to protect Wetlands and Riparian Zones.
All lands are subject to Exhibit UFO LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.
All lands are subject to Exhibit UFO LN-19 to protect Surface 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.
All lands are subject to Exhibit UFO LN-22 to protect Air Quality.

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: 6203 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 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 Wildlife, Aquatic.
All lands are subject to Exhibit UFO LN-17 to protect Wetlands and Riparian Zones.
All lands are subject to Exhibit UFO LN-18 to protect Ground Water: Municipal Watersheds and Public Water Supplies.

All lands are subject to Exhibit UFO LN-19 to protect Surface 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.

All lands are subject to Exhibit UFO LN-22 to protect Air Quality.

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

Appendix F. Exhibits, Stipulations, Lease Notices

[Appendix F](#)

Attachment F

Exhibits

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-06	Scenic Byway	F-10
EXHIBIT UFO-LN-07	Noise	F-11
EXHIBIT UFO-LN-11	Steep Slopes	F-12
EXHIBIT UFO-LN-12	Wild and Scenic Rivers	F-13
EXHIBIT UFO-LN-13	Saline / Selenium Soils	F-14
EXHIBIT UFO-LN-14	Bald Eagle Winter Roost Sites	F-15
EXHIBIT UFO-LN-15	Big Game Crucial Winter Habitats	F-16
EXHIBIT UFO-LN-16	Wildlife, Aquatic	F-17
EXHIBIT UFO-LN-17	Wetlands and Riparian Zones	F-18
EXHIBIT UFO-LN-18	Ground Water: Municipal Watersheds and Public Water Supplies	F-19
EXHIBIT UFO-LN-19	Surface Water: Municipal Watersheds and Public Water Supplies	F-20
EXHIBIT UFO-LN-20	Protection of Surface Waters: Water Bodies	F-21
EXHIBIT UFO-LN-21	BLM Authorized Facilities	F-22
EXHIBIT UFO-LN-22	Air Quality Best Management Practices	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:

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:

TIMING LIMITATION STIPULATION

For the purpose of (reasons):

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:

TIMING LIMITATION STIPULATION

For the purpose of (reasons):

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:

TIMING LIMITATION STIPULATION

For the purpose of (reasons):

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

For the purpose of (reasons):

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

The lessee/operator is given notice that motorized and mechanized travel is 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

The lessee is hereby notified that, raptor nests may exist on portions of the lease tract. If raptor nests are present, seasonal constraints in the location of drilling operations may be required 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 UFO-LN-06

Lease Number:

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 shall 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 will be expected 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 shall 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

For the purposes of protecting: Steep Slopes

The lessee/operator is given notice that surface occupancy or use is 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, gulying, 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

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 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 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

For the purposes of protecting: Saline / Selenium Soils

The lessee/operator is given notice that development proposals within soils of this type may:

1) 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.

2) Evaluate the proximity to water features to minimize the potential of selenium transport.

3) 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, gullyng, piping, and mass wasting.
- During extended wet periods, surface-disturbing activities may not be conducted.

4) Storm Water Management Plans required by the state should include additional protective measures to limit runoff or mobilization on saline/selenium soils.

5) 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

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

For the purposes of protecting: Big Game Crucial Winter Habitats

The lessee/operator is given notice that where mineral development requires surface facility densities exceeding one well pad per square mile in big game crucial winter ranges compensatory mitigation (improving adjacent habitats to the extent necessary to maintain existing big game populations) may be required.

On the lands described below:

EXHIBIT UFO-LN-16

Lease Number:

LEASE NOTICE

For the purposes of protecting: Wildlife, Aquatic

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 of the ordinary high water mark or 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-17

Lease Number:

LEASE NOTICE

For the purposes of protecting: Wetlands and Riparian Zones

The lessee/operator is given notice that activities in or near riparian areas may require special engineering design, construction and implementation measures, including relocation of up to 200 meters away from the ordinary high water mark or riparian/wetland area.

On the lands described below:

EXHIBIT UFO-LN-18

Lease Number:

LEASE NOTICE

For the purposes of protecting: 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 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 Public Water Supply using a groundwater well or spring:
 - i. Pitless drilling systems.
 - ii. Flowback and stimulation fluids contained within tanks that are placed on a well pad or in an area with down-gradient berming.
 - iii. Use of green completions.
 - iv. Notification of potentially impacted Public Water Systems 15 miles downstream.
 - v. 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.
 - vi. 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 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 designated watersheds, a coordinated water resources monitoring plan may need to be developed with the BLM and Public Water Supplier. The sampling sites, intensity, and need for groundwater sampling, depending on site specific geology and risk, will be determined at the time of development.
 - vii. Sufficient surface casing should be extended through all fresh water domestic aquifer zones and should be drilled with fresh water mud. Cementing should comply with all Federal and State requirements to ensure aquifer integrity.
 - viii. Hydrologic studies may be required to ensure municipal and domestic springs are not degraded in volume or quality.

On the lands described below:

EXHIBIT UFO-LN-19

Lease Number:

LEASE NOTICE

For the purposes of protecting: Surface 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.
- Apply the following protective measures within a distance greater than 1,000 horizontal feet but less than 2,640 horizontal feet 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:
 - i. Pitless drilling systems.
 - ii. Flowback and stimulation fluids contained within tanks that are placed on a well pad or in an area with down-gradient berming.
 - iii. Use of green completions.
 - iv. Notification of potentially impacted Public Water Systems 15 miles downstream.
 - v. 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.
 - vi. 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 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 designated watersheds, a coordinated water resources monitoring plan must be developed with the BLM and Public Water Supplier. The sampling sites, intensity, and need for groundwater sampling, depending on site specific geology and risk, will be determined at the time of development.

On the lands described below:

EXHIBIT UFO-LN-20

Lease Number:

LEASE NOTICE

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.
- Use of green completions.
- 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]). The sampling sites, intensity, and need for groundwater sampling, depending on site specific geology and risk, will be determined at the time of development.

On the lands described below:

EXHIBIT UFO-LN-21

Lease Number:

LEASE NOTICE

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 shall 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:

EXHIBIT UFO-LN-22

Lease Number:

LEASE NOTICE

For the purposes of protecting: Air Quality Best Management Practices

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

On the lands described below:

Appendix G. List of Maps

[Henderson Creek Area Map, Proposed Action](#)

Map G.1. Proposed Action: Henderson Creek Area Map

[Paonia Reservoir Area Map, Proposed Action](#)

Map G.2. Proposed Action: Paonia Reservoir Area Map

[Hotchkiss Area Map, Proposed Action](#)

Map G.3. Proposed Action: Hotchkiss Area Map,

[Paonia Area Map, Proposed Action](#)

Map G.4. Proposed Action: Paonia Area Map

[Crawford Area Map, Proposed Action](#)

Map G.5. Proposed Action: Crawford Area Map

[Henderson Creek Area Map, Preferred Alternative](#)

Map G.6. Preferred Alternative: Henderson Creek Area Map

[Paonia Reservoir Area Map, Preferred Alternative](#)

Map G.7. Preferred Alternative: Paonia Reservoir Area Map

[Hotchkiss Area Map, Preferred Alternative](#)

Map G.8. Preferred Alternative: Hotchkiss Area Map

[Paonia Area Map, Preferred Alternative](#)

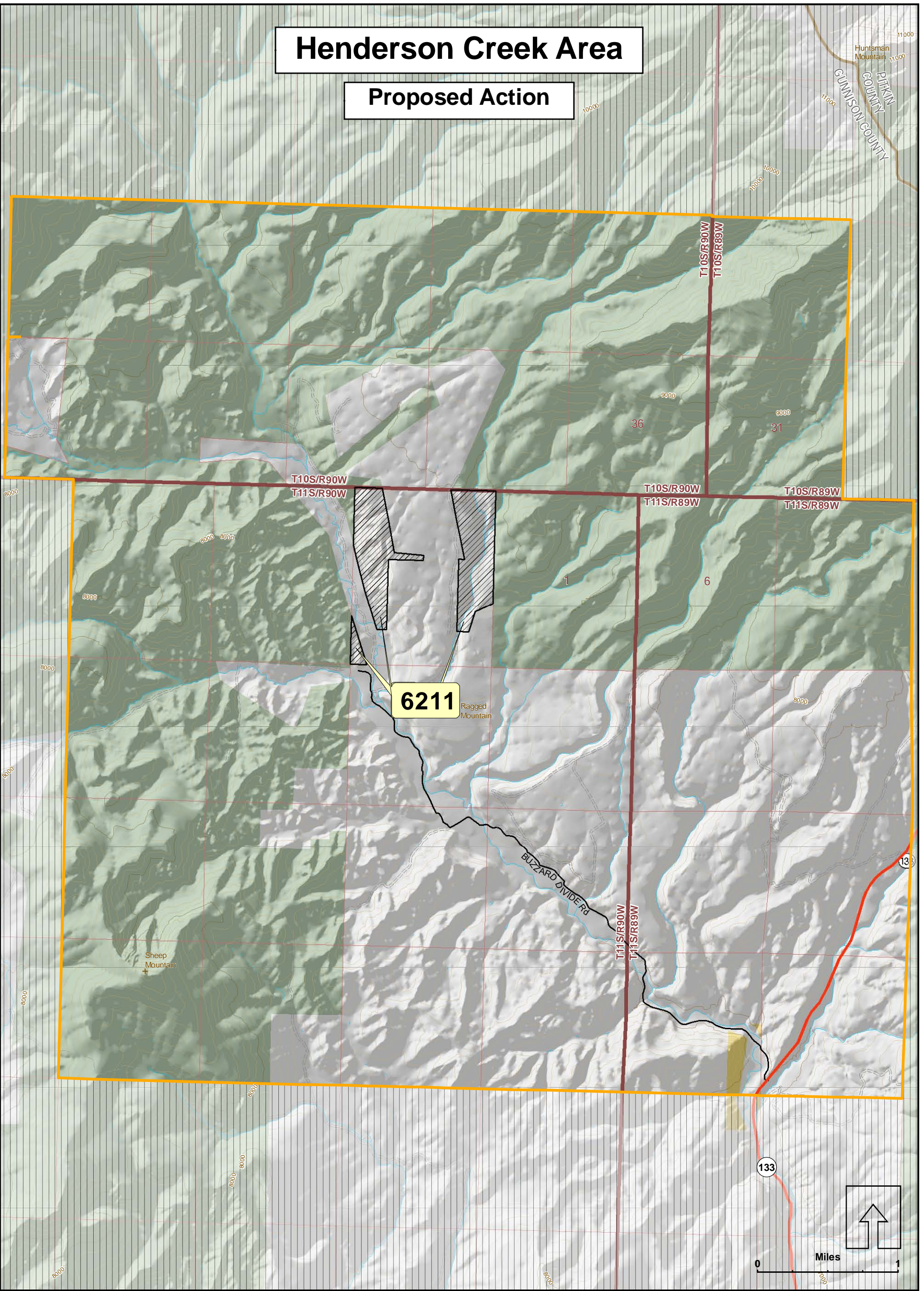
Map G.9. Preferred Alternative: Paonia Area Map

[Crawford Area Map, Preferred Alternative](#)

Map G.10. Preferred Alternative: Crawford Area Map

Henderson Creek Area

Proposed Action



- Private
- Municipality
- State
- Bureau Of Land Management
- US Forest Service
- National Park Service

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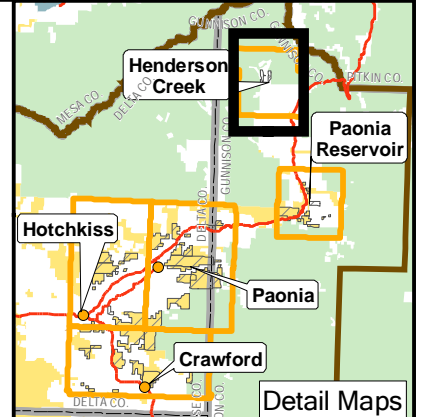
- Lease Area Boundary
- With Lease ID

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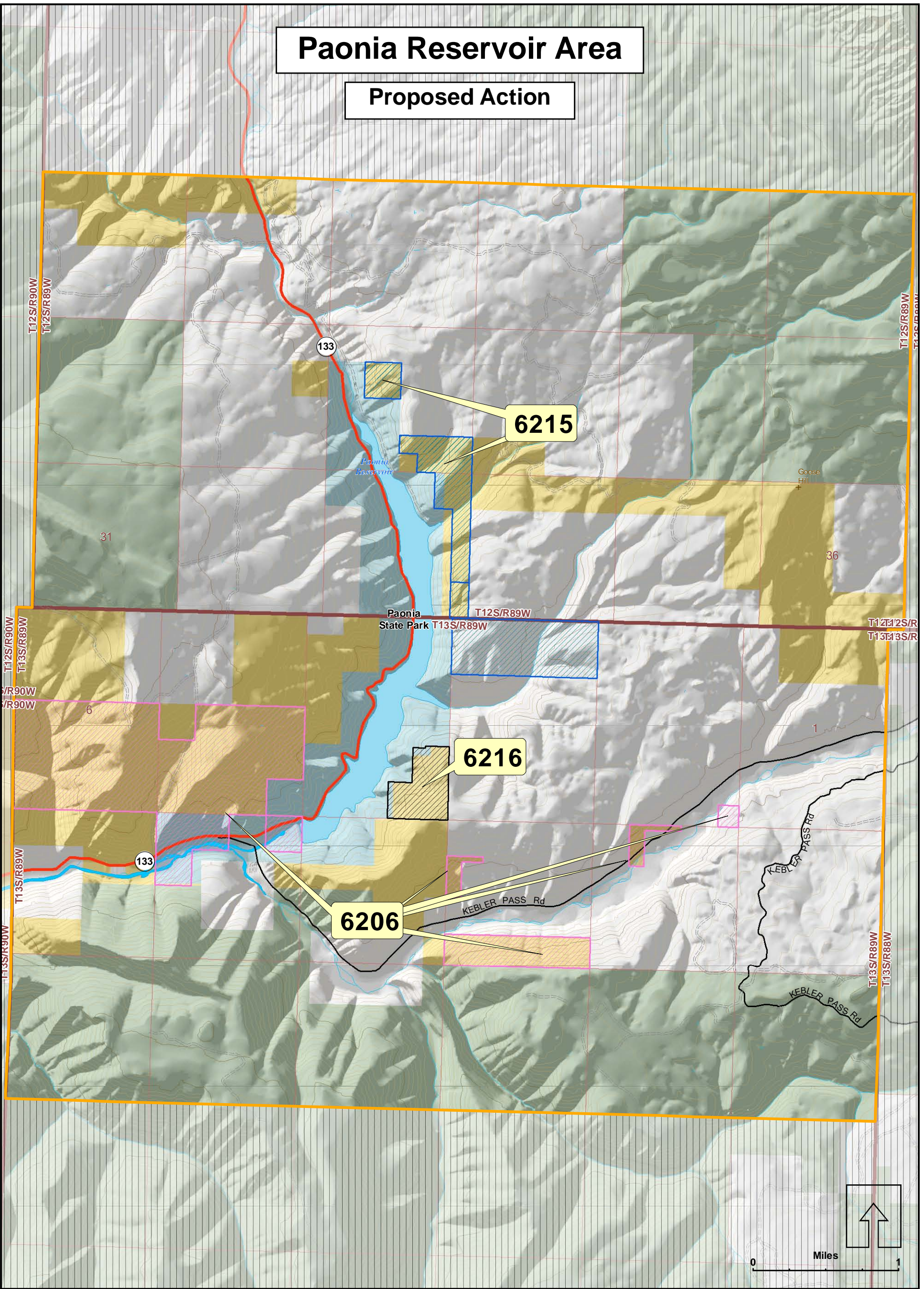


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Paonia Reservoir Area

Proposed Action



- Private
- Municipality
- State
- Bureau Of Land Management
- US Forest Service
- National Park Service

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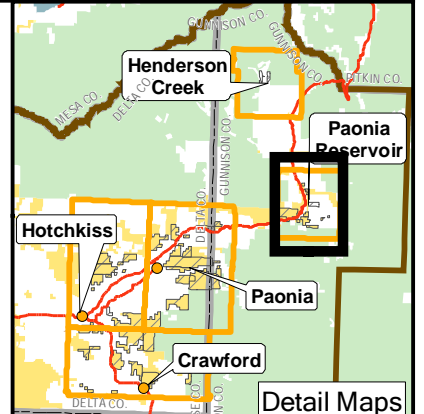
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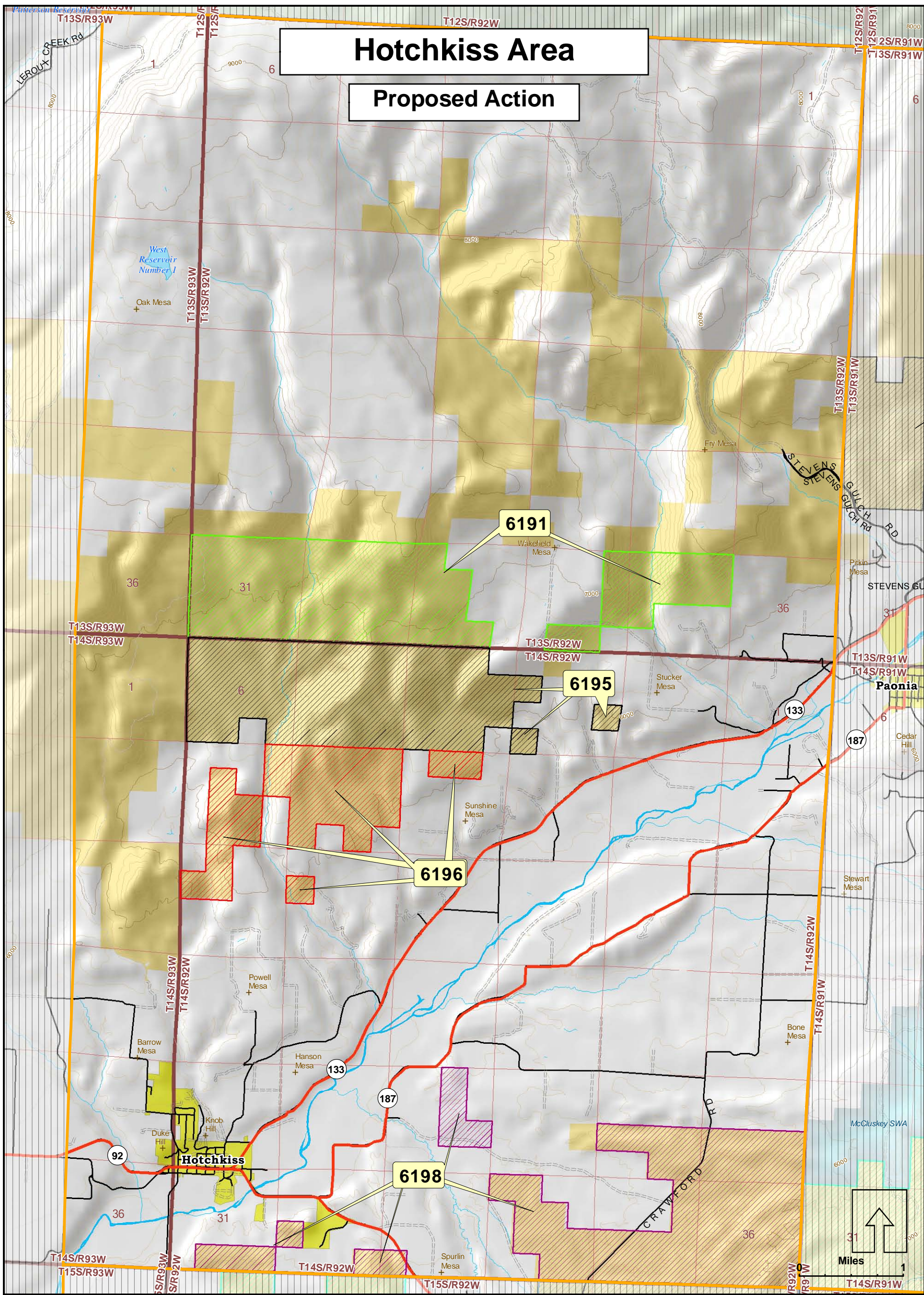
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Detail Maps

Hotchkiss Area

Proposed Action



- Private
- Municipality
- State
- Bureau Of Land Management
- US Forest Service
- National Park Service

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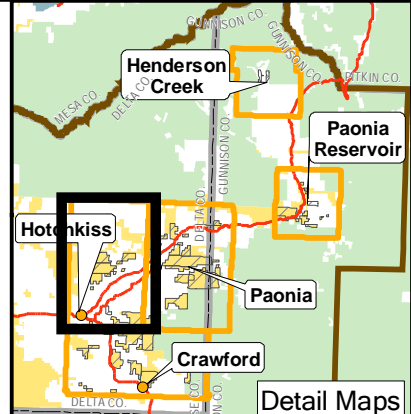
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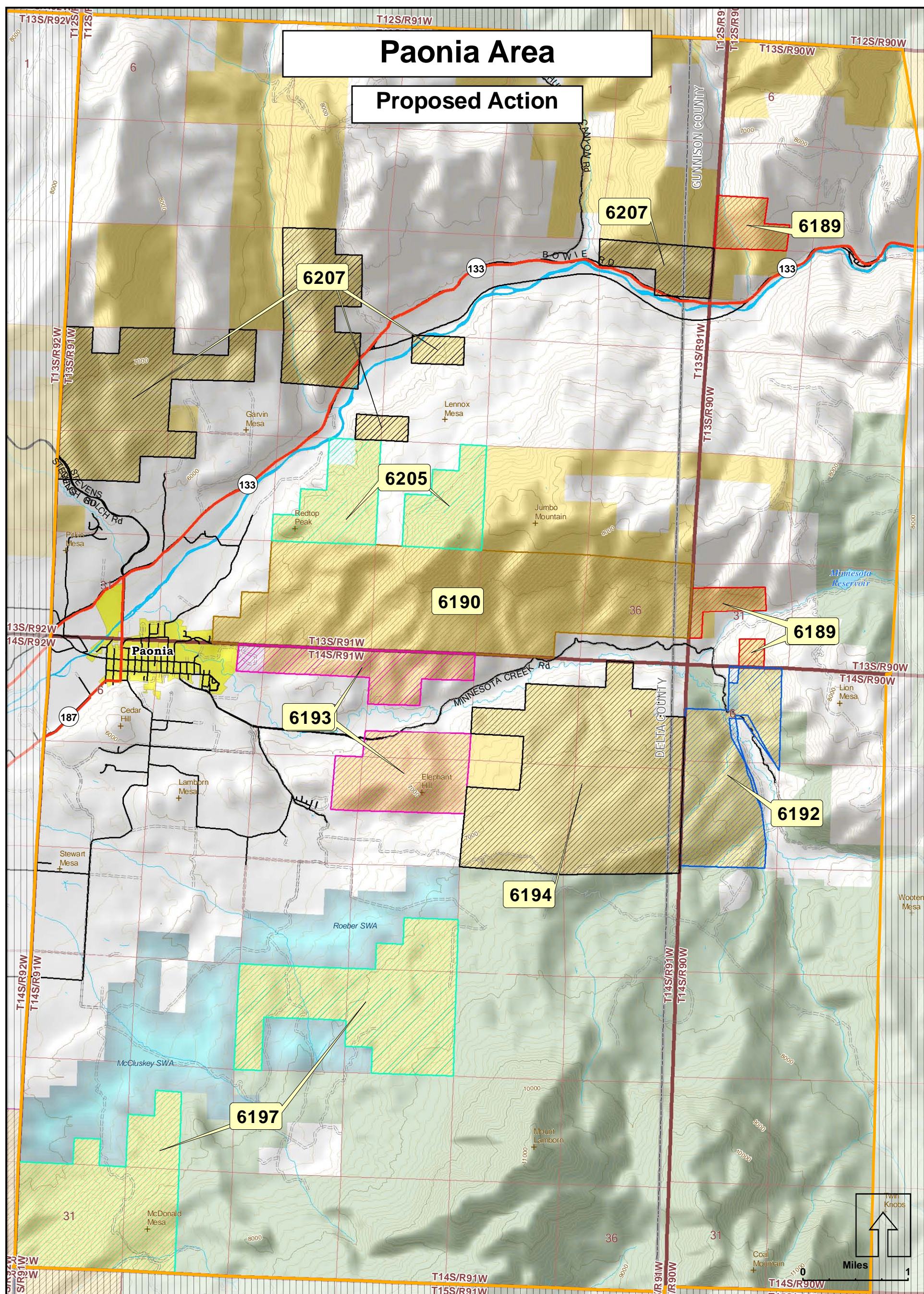
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
Detail Maps

Paonia Area

Proposed Action



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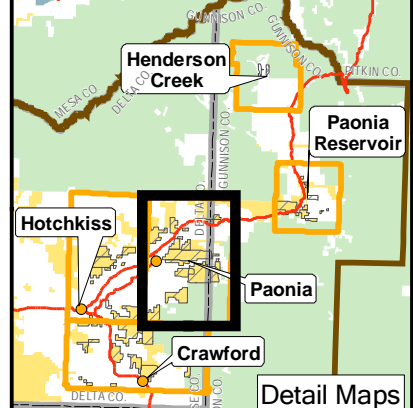
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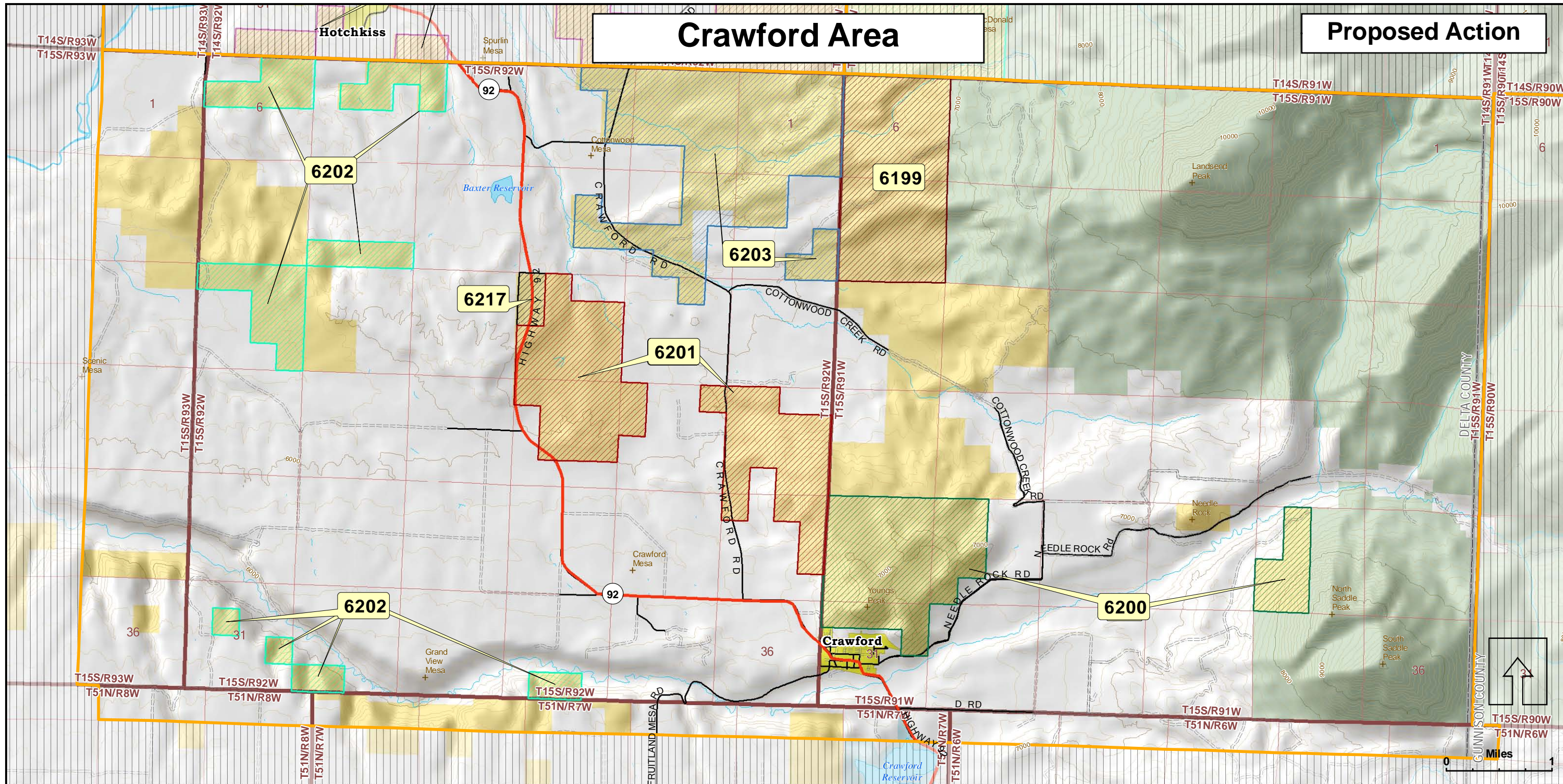
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Detail Maps

Crawford Area

Proposed Action



- Private
- Municipality
- State
- Bureau Of Land Management
- US Forest Service
- National Park Service

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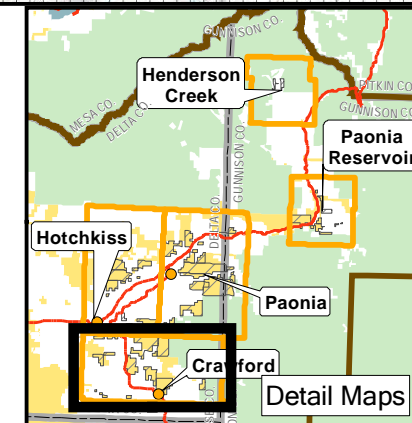
Lease Area Boundary
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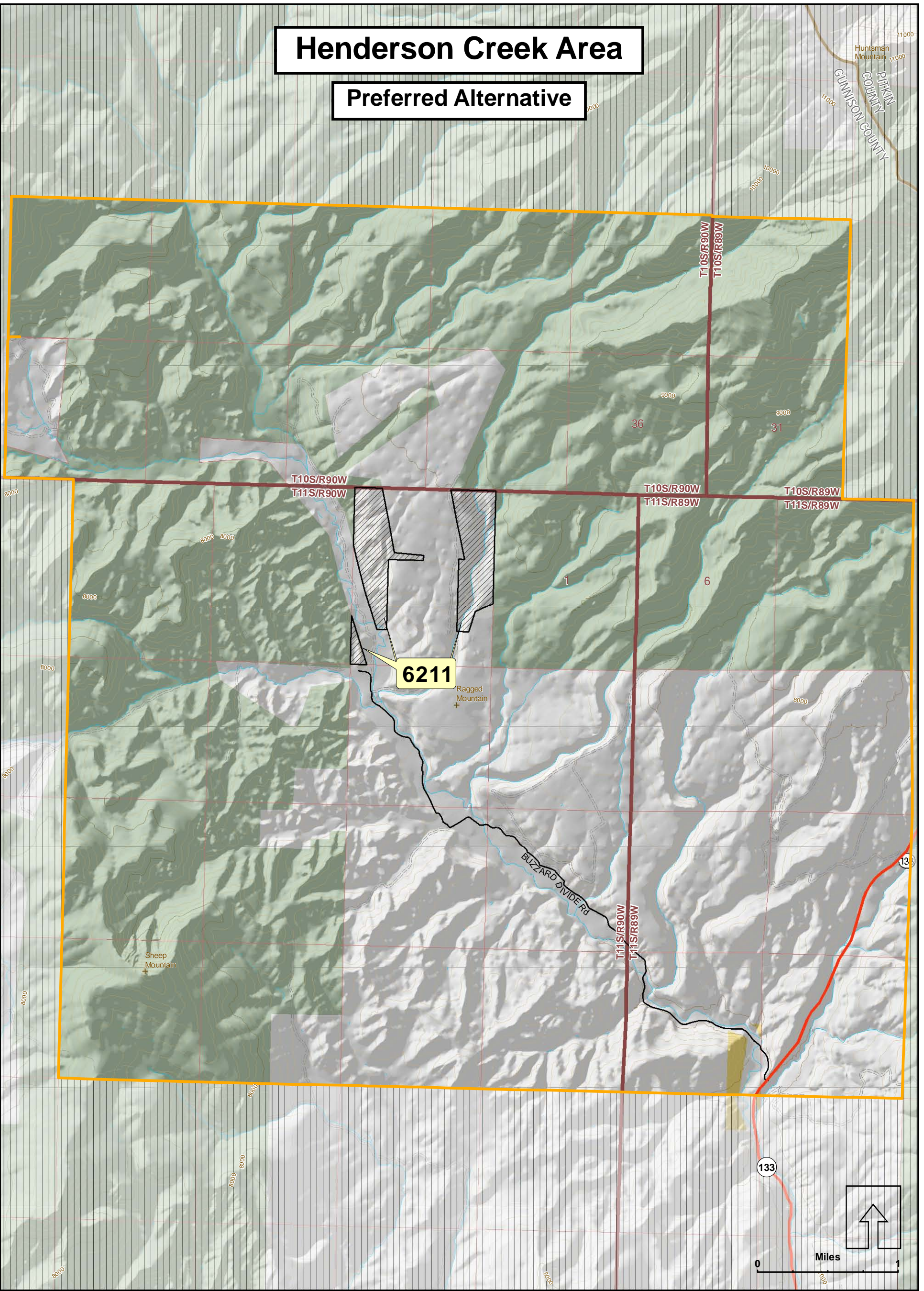
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Henderson Creek Area

Preferred Alternative



- Private
- Municipality
- State
- Bureau Of Land Management
- US Forest Service
- National Park Service

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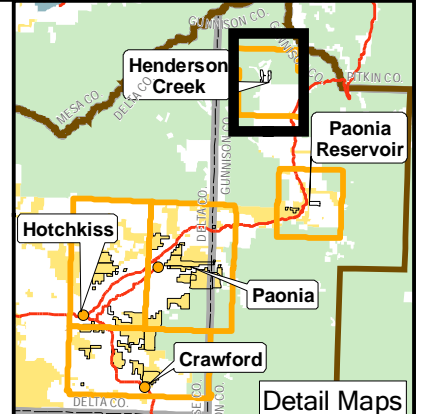
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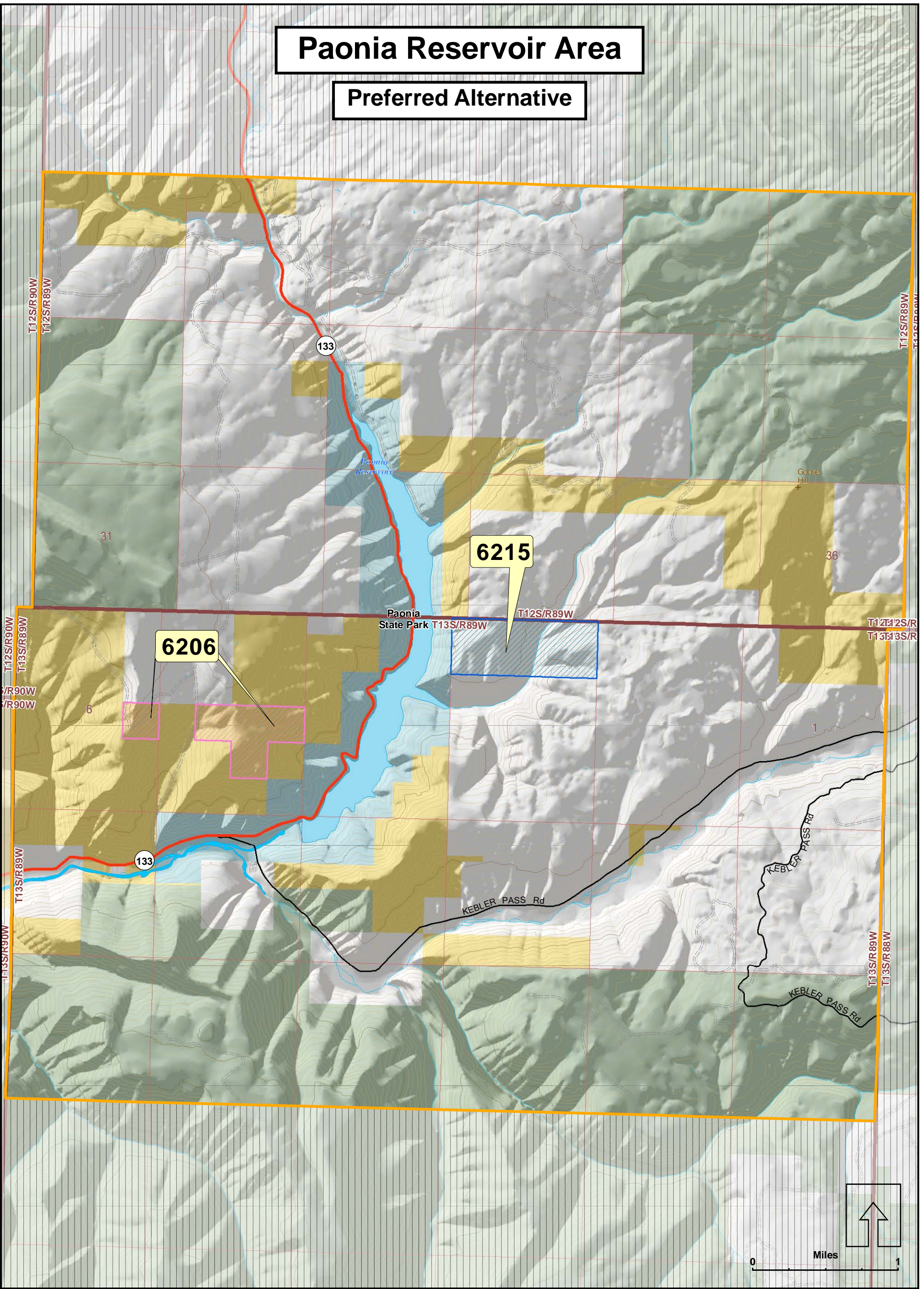


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Paonia Reservoir Area

Preferred Alternative



- Private
- Municipality
- State
- Bureau Of Land Management
- US Forest Service
- National Park Service

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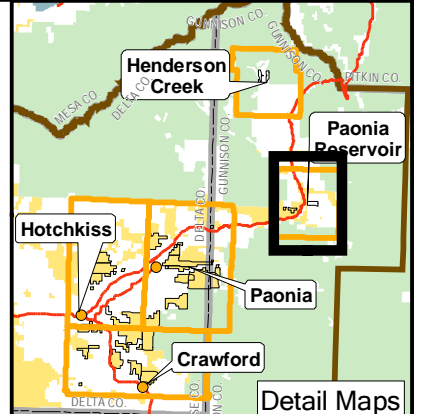
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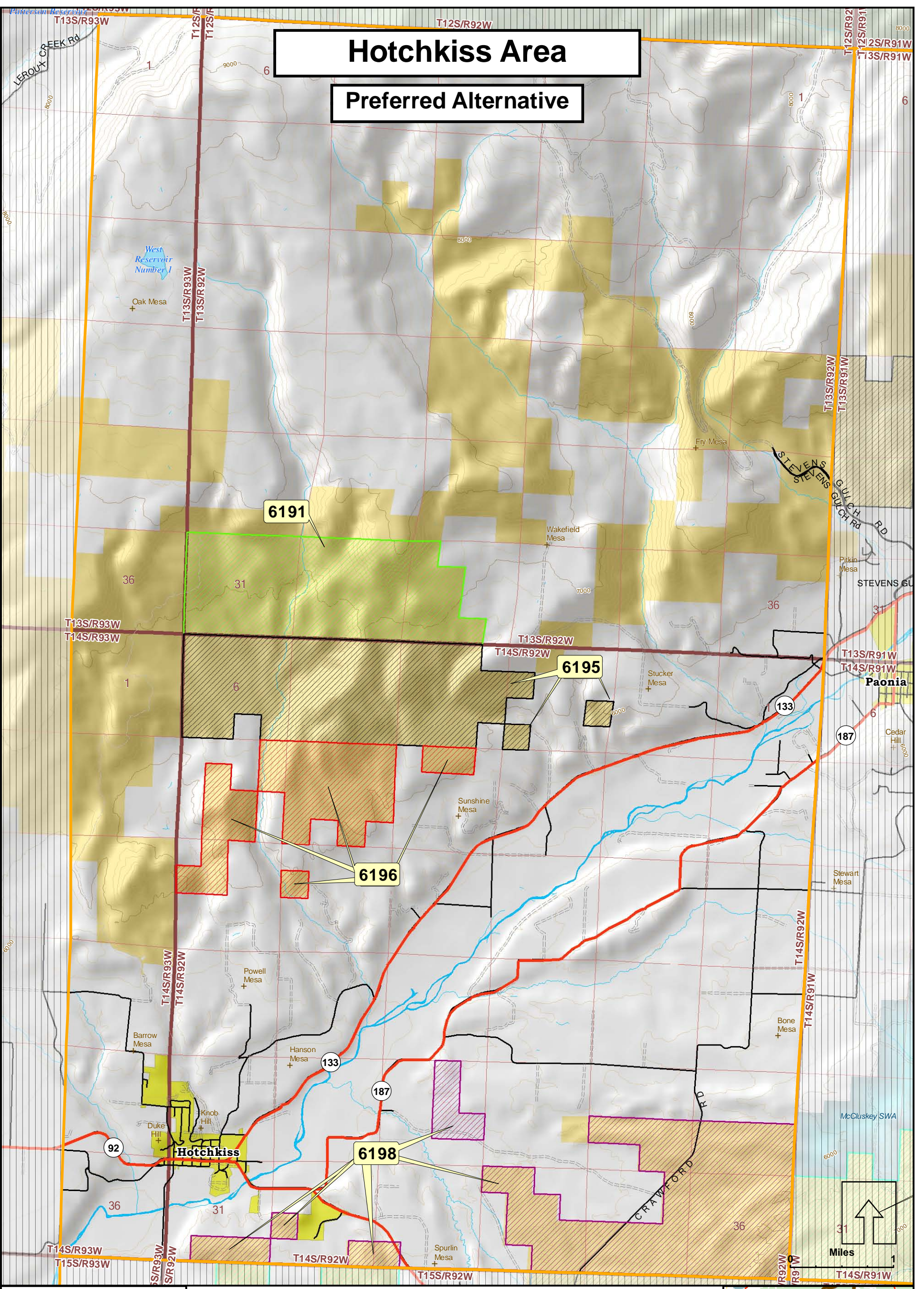
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Detail Maps

Hotchkiss Area

Preferred Alternative



- Private
- Municipality
- State
- Bureau Of Land Management
- US Forest Service
- National Park Service

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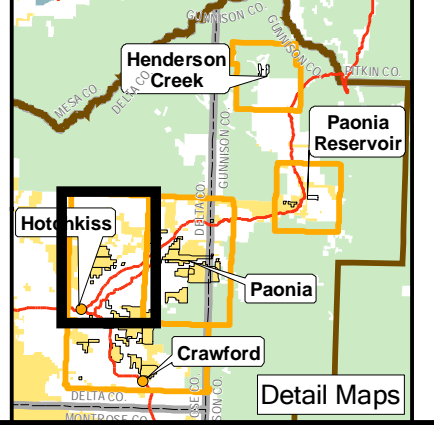
- Lease Area Boundary
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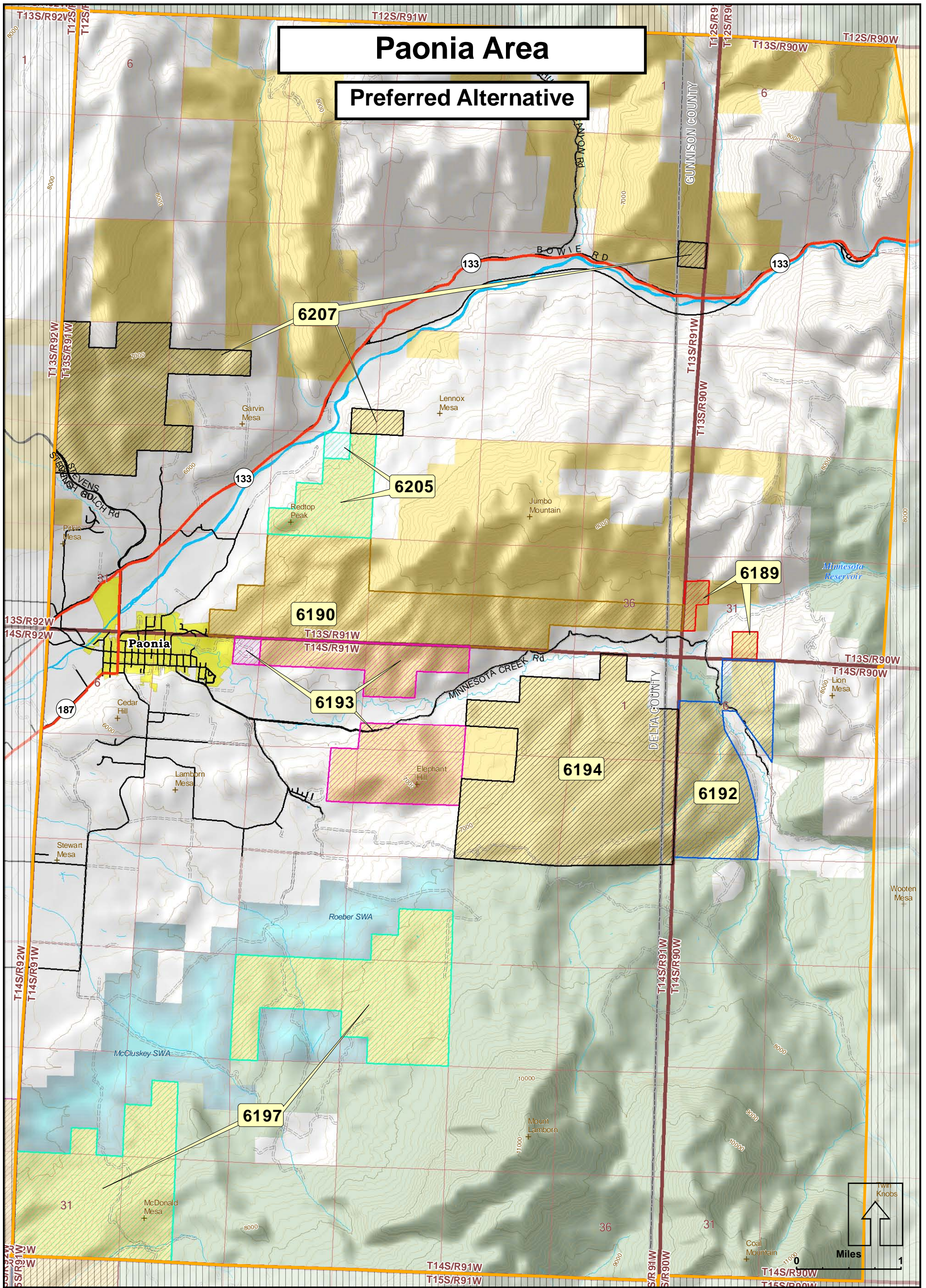
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Detail Maps

Paonia Area

Preferred Alternative



- Private
- Municipality
- State
- Bureau Of Land Management
- US Forest Service
- National Park Service

BLM - Uncompahgre Field Office August 2012 Oil and Gas Lease Sale

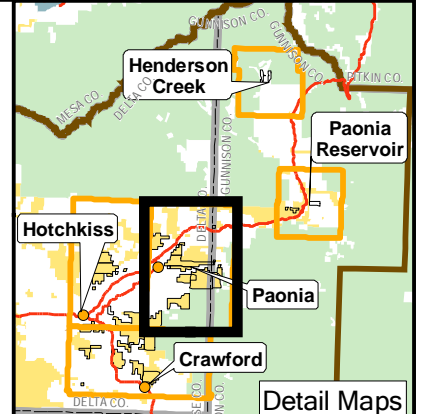
Lease Area Boundary
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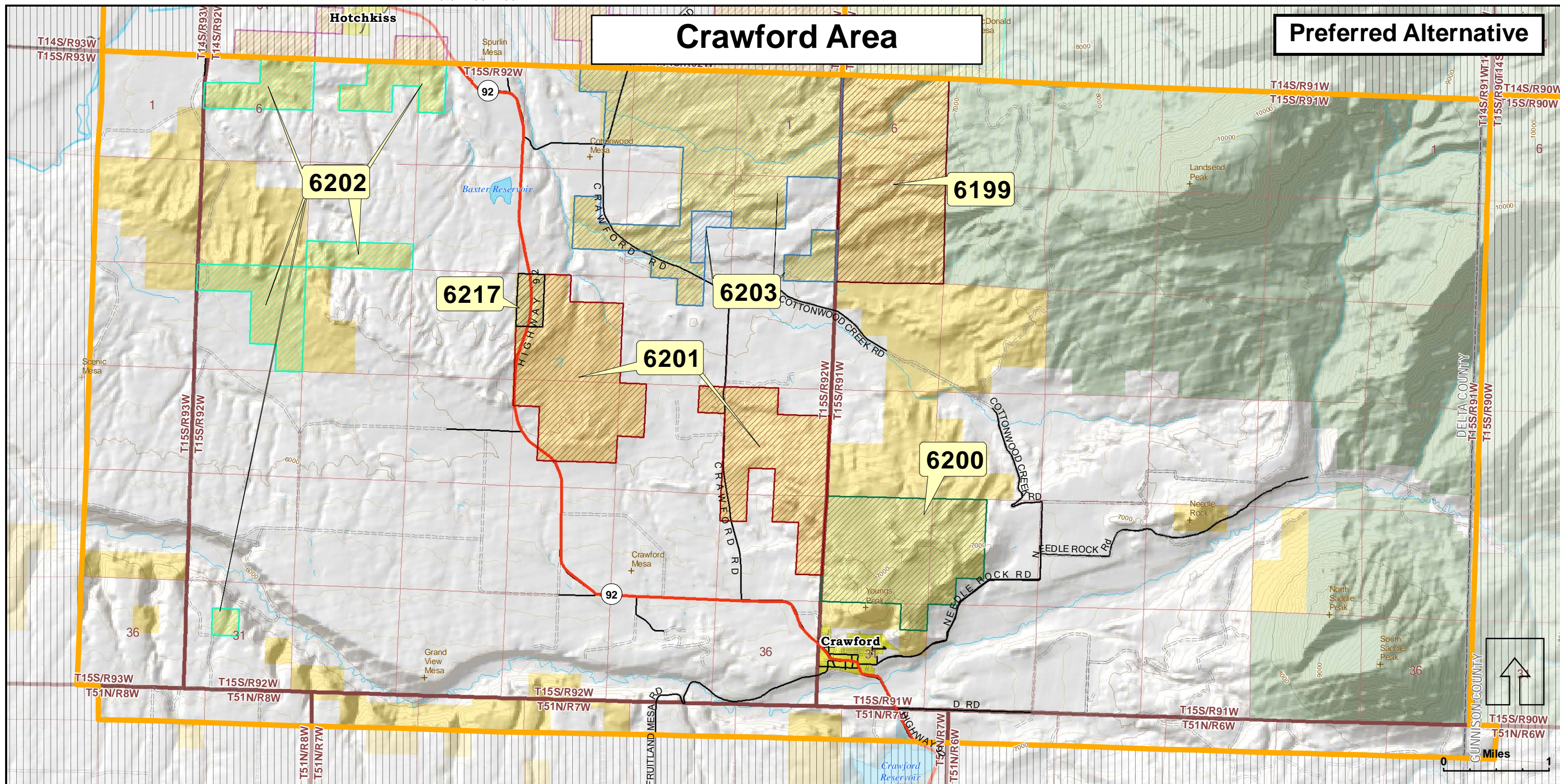
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Detail Maps

Crawford Area

Preferred Alternative



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BLM - Uncompahgre Field Office

August 2012 Oil and Gas Lease Sale

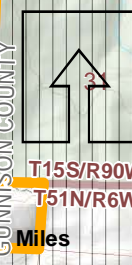
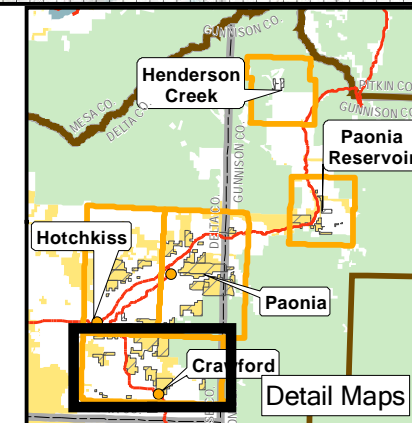
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