

**U.S. Department of the Interior
Bureau of Land Management
Glenwood Springs Energy Office
2425 S. Grand Avenue, Suite 101
Glenwood Springs, CO 81601**

ENVIRONMENTAL ASSESSMENT

NUMBER: CO140-2008-061 EA

CASEFILE NUMBER: Federal Lease COC64739

PROJECT NAME: Proposal to Drill 11 Federal Wells from One Proposed Split-Estate Well Pad (35I) in the lower Pete and Bill Creek Area.

LOCATION: NE¹/₄SE¹/₄, Section 35, Township 7 South, Range 96 West, 6th Principal Meridian.

LEGAL DESCRIPTIONS:

Table 1. Surface and Bottomhole Locations of Proposed Federal Wells		
<i>Proposed Wells</i>	<i>Surface Locations</i>	<i>Bottomhole Locations</i>
Parachute Ranch Federal 35-32D	2349 feet FSL, 950 feet FEL NE ¹ / ₄ SE ¹ / ₄ , Section 35, T7S R96W	2488 feet FNL, 2015 feet FEL SW ¹ / ₄ NE ¹ / ₄ , Section 35, T7S R96W
Parachute Ranch Federal 35-33A	2343 feet FSL, 955 feet FEL NE ¹ / ₄ SE ¹ / ₄ , Section 35, T7S R96W	2570 feet FSL, 2007 feet FEL NW ¹ / ₄ SE ¹ / ₄ , Section 35, T7S R96W
Parachute Ranch Federal 35-33B	2320 feet FSL, 974 feet FEL NE ¹ / ₄ SE ¹ / ₄ , Section 35, T7S R96W	2226 feet FSL, 2013 feet FEL, NW ¹ / ₄ SE ¹ / ₄ , Section 35, T7S R96W
Parachute Ranch Federal 35-33C	2315 feet FSL, 978 feet FEL NE ¹ / ₄ SE ¹ / ₄ , Section 35, T7S R96W	1874 feet FSL, 2012 feet FEL NW ¹ / ₄ SE ¹ / ₄ , Section 35, T7S R96W
McNeil Federal 35-33D	2308 feet FSL, 971 feet FEL NE ¹ / ₄ SE ¹ / ₄ , Section 35, T7S R96W	1587 feet FSL, 2010 feet FEL NW ¹ / ₄ SE ¹ / ₄ , Section 35, T7S R96W
Parachute Ranch Federal 35-42C	2372 feet FSL, 931 feet FEL NE ¹ / ₄ SE ¹ / ₄ , Section 35, T7S R96W	2178 feet FNL, 668 feet FEL SE ¹ / ₄ NE ¹ / ₄ , Section 35, T7S R96W
Parachute Ranch Federal 35-42D	2366 feet FSL, 924 feet FEL NE ¹ / ₄ SE ¹ / ₄ , Section 35, T7S R96W	2501 feet FNL, 675 feet FEL SE ¹ / ₄ NE ¹ / ₄ , Section 35, T7S R96W
Parachute Ranch Federal 35-43A	2360 feet FSL, 928 feet FEL NE ¹ / ₄ SE ¹ / ₄ , Section 35, T7S R96W	2527 feet FSL, 666 feet FEL NE ¹ / ₄ SE ¹ / ₄ , Section 35, T7S R96W
Parachute Ranch Federal 35-43B	2343 feet FSL, 942 feet FEL NE ¹ / ₄ SE ¹ / ₄ , Section 35, T7S R96W	2197 feet FSL, 673 feet FEL NE ¹ / ₄ SE ¹ / ₄ , Section 35, T7S R96W
Parachute Ranch Federal 35-43C	2337 feet FSL, 947 feet FEL NE ¹ / ₄ SE ¹ / ₄ , Section 35, T7S R96W	1882 feet FSL, 672 feet FEL NE ¹ / ₄ SE ¹ / ₄ , Section 35, T7S R96W
Parachute Ranch Federal 35-43D	2314 feet FSL, 966 feet FEL NE ¹ / ₄ SE ¹ / ₄ , Section 35, T7S R96W	1597 feet FSL, 673 feet FEL NE ¹ / ₄ SE ¹ / ₄ , Section 35, T7S R96W

APPLICANT: Noble Energy, Inc. (Noble)

DESCRIPTION OF THE PROPOSED ACTION AND NO ACTION ALTERNATIVE:

Proposed Action: The proposed action is to drill and develop 11 Federal oil and gas wells from a proposed well pad (35I) on split-estate property (Figure 1). BLM holds 50% of the mineral estate underlying the private surface location. The wells would be directionally drilled from the proposed location into Federal mineral estate. A surface use agreement with the private landowner is in place.

The project area would be located 4 miles south of Parachute, Colorado, and about 2 miles east of the Una Bridge. The area is presently accessed using Garfield County Road 300 (CR 300) east of the Una Bridge and from CR 304. Because the proposed pad would be located in proximity to CR304, the proposed development would qualify as a GAP waiver (BLM 1999a).

The pad would be located in sagebrush vegetation directly south of a formerly irrigated alfalfa hayfield on a gentle north-facing mesa overlooking the Colorado River Valley and Interstate 70. The pad, with surface dimensions of 325 feet by 425 feet, would have a maximum cut of 11.3 feet at the eastern corner of the pad and a maximum fill of 11.0 feet at the western corner. Construction of the well pad would result in approximately 4.6 acres of new surface disturbance, which would be reduced to approximately 2.6 acres after interim reclamation.

To accommodate access to the pad, a new road spur (239 feet in length and 18 feet in width) from CR304 would be constructed (see Figure 1). Approximately 200 feet of 8-inch maximum steel line for natural gas and 4-inch maximum diameter plastic (poly) line for produced water would be buried alongside the road spur to connect with the existing main pipeline and water line along CR304. Construction of the road and pipelines would result in approximately 0.3 acres of new surface disturbance.

Total long-term disturbance for the pad and access road would amount to 2.7 acres. The pad, road spur, and pipelines would be constructed to standards described in *Surface Operating Standards for Oil and Gas Exploration & Development* (USDI and USDA 2006).

No Action Alternative: The proposed action involves Federal subsurface minerals that are leased. These Federal leases grant the lessee the right to explore and develop the lease. Although BLM cannot deny the right to drill and develop the leasehold, individual APDs can be denied to prevent unnecessary and undue degradation. The no action alternative constitutes denial of the APDs associated with the proposed action.

Under the no action alternative, therefore, none of the proposed developments described in the proposed action would take place.

PURPOSE AND NEED FOR THE ACTION: The purpose of the action is to develop oil and gas resources on Federal Lease COC64739 consistent with existing Federal lease rights. The action is needed to increase the development of oil and gas resources for commercial marketing to the public.

SUMMARY OF LEASE STIPULATIONS: Federal Lease COC64739 contains special stipulations applicable to the proposed action (Table 2).

Noble Energy's Proposed 35I Split Estate Pad

T7S R96W Sec 35, NE $\frac{1}{4}$ SE $\frac{1}{4}$, 6th PM
Garfield County, CO

Surface Owner: Klebold

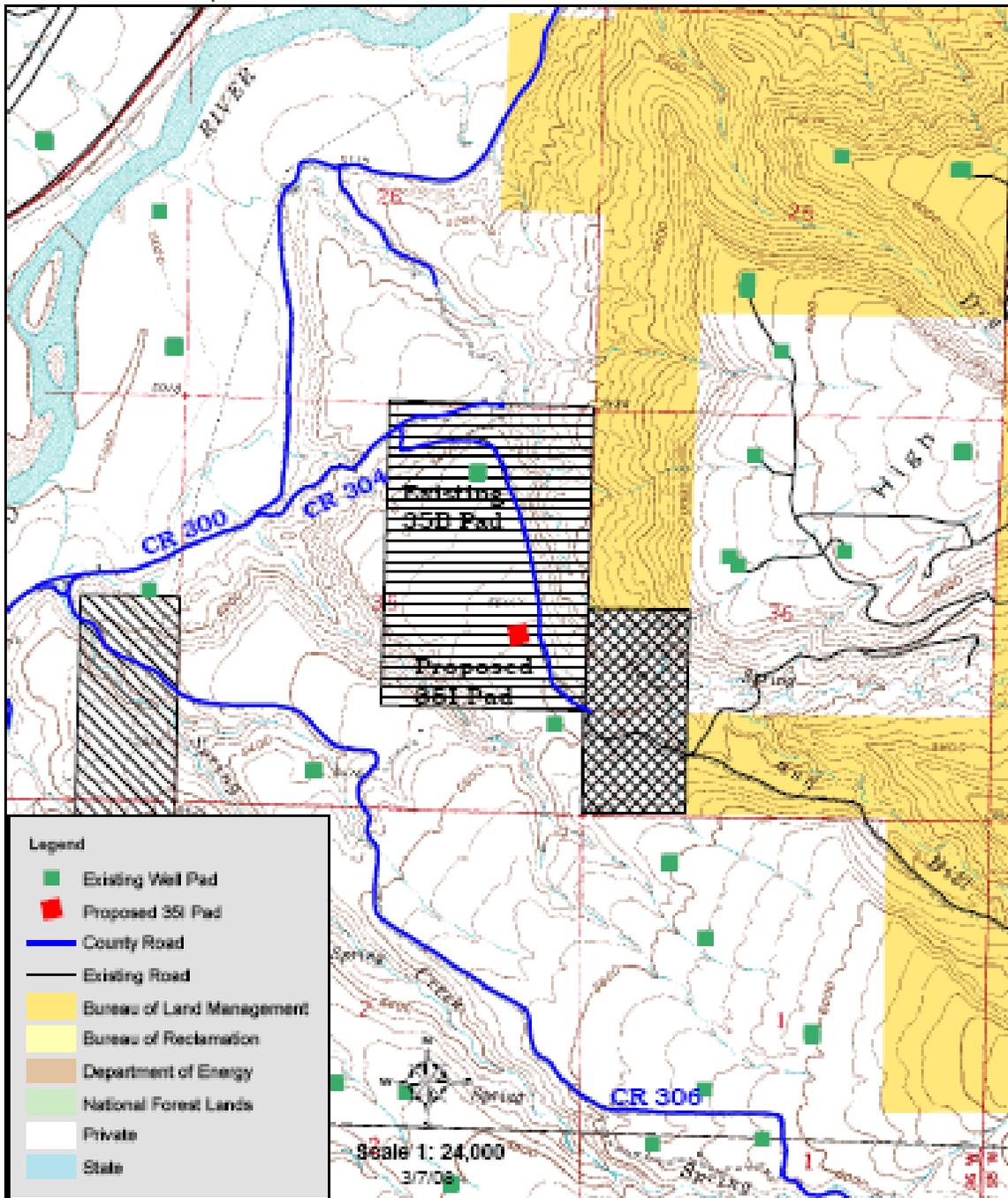


Figure 1. Project Area showing Pad Location.

PLAN CONFORMANCE REVIEW: The proposed action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: Glenwood Springs Resource Management Plan (BLM 1984).

Date Approved: Amended in November 1991 – Oil and Gas Leasing and Development – Final Supplemental Environmental Impact Statement; amended in March 1999 – Oil and Gas Leasing & Development Final Supplemental Environmental Impact Statement.

Decision Number/Page: Record of Decision, Glenwood Springs Resource Management Plan Amendment, November 1991, page 3 (BLM 1991).

Table 2. Lease Stipulations Applicable to the Proposed Action.		
<i>Lease Number</i>	<i>Description of Lands</i>	<i>Lease Stipulations</i>
COC64739	All lands	Timing Limitation: To protect Big Game Winter Habitat (12/1-4/30). Exception may be granted under mild winter conditions for the last 60 days.
	E½NE¼, NW¼NE¼, NW¼SE¼, Section 35, T7S, R96W, 6 th P.M.	Controlled Surface Use: To protect erosive soils and slopes greater than 30%, special design, construction, and implementation measures will be required to limit the amount of surface disturbance, to reduce erosion potential, to maintain site stability and productivity, and to ensure successful reclamation. No Surface Occupancy: to protect slopes over 30% with high visual sensitivity in the I-70 viewshed. Exception would be granted if protective measures can be designed to accomplish VRM Class II objectives, namely that the overall landscape character would be retained.

Decision Language: “697,720 acres of BLM-administrated mineral estate within the Glenwood Springs Resource Area are open to oil and gas leasing and development, subject to lease terms and (as applicable) lease stipulations.” This decision was carried forward unchanged in the 1999 RMP amendment (BLM 1999a).

Discussion: The proposed action is in conformance with the 1991 and 1999 Oil and Gas RMP amendments because the Federal mineral estate proposed for development is open for oil and gas leasing and development.

STANDARDS FOR PUBLIC LAND HEALTH: In January 1997, Colorado BLM approved the Standards for Public Land Health. The five standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. The environmental analysis must address whether the proposed action or alternatives being analyzed would result in impacts that would maintain, improve, or deteriorate land health conditions relative to these resources.

These analyses are conducted in relation to baseline conditions described in land health assessments (LHAs) completed by the BLM. The proposed action would be located in an area that was included in the Battlement Mesa LHA (BLM 2000).

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES:

This section provides a description of the human and natural environmental resources that could be affected by the proposed action and no action alternative. In addition, the section presents comparative analyses of the direct and indirect consequences on the affected environment stemming from the implementation of the various actions.

A variety of laws, regulations, and policy directives mandate the evaluation of the effects of a proposed action and alternative(s) on certain critical environmental elements. Not all of the critical elements that require inclusion in this EA are present, or if they are present, may not be affected by the proposed action and alternative (Table 3). Only those mandatory critical elements that are present and affected are described in the following narrative.

Table 3. Critical Elements of the Human Environment									
<i>Critical Element</i>	<i>Present</i>		<i>Affected</i>		<i>Critical Element</i>	<i>Present</i>		<i>Affected</i>	
	Yes	No	Yes	No		Yes	No	Yes	No
Air Quality	X		X		Prime or Unique Farmlands		X		X
ACECs		X		X	Special Status Species*	X		X	
Cultural Resources	X			X	Wastes, Hazardous or Solid	X		X	
Environmental Justice		X		X	Water Quality, Surface and Ground*	X		X	
Floodplains		X		X	Wetlands and Riparian Zones*		X		X
Invasive Non-native Species	X		X		Wild and Scenic Rivers		X		X
Migratory Birds	X		X		Wilderness and Wilderness Study Areas		X		X
Native American Religious Concerns		X		X					

* Public Land Health Standard

In addition to the mandatory critical elements, additional resources that would be impacted by the proposed action and alternative. These are presented under **Other Affected Resources.**

Critical Elements

Air Quality

Affected Environment: The project area lies within Garfield County, which has been described as an attainment area under CAAQS and NAAQS (Colorado Ambient Air Quality Standards and National Ambient Air Quality Standards). An attainment area is an area where ambient air pollution quantities are determined to be below NAAQS standards.

Proposed Action:

Environmental Consequences: The Roan Plateau RMPA and EIS describe potential effects from oil and gas development (BLM 2006:4-26 to 4-37). Analysis was completed with regard to greenhouse gas emissions, a near-field and far-field analysis for carbon monoxide, particulate matter (PM₁₀ and PM_{2.5}), sulfur dioxide, hazardous air pollutants including: benzene, ethylbenzene, formaldehyde, hydrogen sulfide, toluene, and xylenes. Sulfur and nitrogen deposition analysis, acid neutralizing capacity, and visibility screening-level analysis were also completed in the Roan Plateau RMPA and EIS. Findings indicate that no adverse long-term effects would result under that plan. Since the proposed action is within the scope of the reasonable foreseeable development (RFD) scenario analyzed in that document, it is anticipated that the proposed action would be unlikely to have adverse effects on air quality.

Construction activities associated with the proposed action would result in localized, short-term increases in vehicle and equipment emissions which would last approximately three to four weeks per pad. Concentrations of emissions would be below applicable ambient air quality standards as analyzed in the Roan Plateau RMPA & EIS. However, it is anticipated that construction and production activities would likely produce high levels of dust in dry conditions without dust abatement. To mitigate dust generated by these activities, the operator would be required to implement dust abatement strategies as needed by watering the access road and construction areas and/or by applying a surfactant approved by the Authorized Officer (Appendix A, Number 2).

No Action Alternative:

Environmental Consequences: Under the no action alternative there would be no dust generation and equipment emissions associated with construction and operational activities.

Cultural Resources

Affected Environment: One Class III cultural resource inventory (GSFO # 1108-2) was conducted of the proposed well pad location, access spur, and pipeline. No properties were identified that were considered eligible for listing on the National Register of Historic Places. Therefore, no formal consultation with the Colorado State Historic Preservation Officer (SHPO) was needed and a determination of “**No Historic Properties Affected**” was made in accordance with the National Historic Preservation Act (NRHP), as amended (16 USC 470f), National BLM/SHPO Programmatic Agreement (1997), and Colorado Protocol (1998).

Proposed Action:

Environmental Consequences: There would be no direct impacts to cultural resources from the implementation of the proposed action. However, indirect long-term cumulative impacts from increased access and the presence of project personnel could result in a range of impacts to known and undiscovered cultural resources in the vicinity of the location. These impacts could range from illegal collection and excavation to vandalism.

A standard Education/Discovery Condition of Approval (COA) for cultural resource protection would be attached to the APD(s) (Appendix A, Number 3a). The importance of this COA should be stressed to operator and its contractors, including informing them of their responsibilities to protect and report any cultural resources encountered. The proponent and subcontractors should also be aware of requirements under the Colorado Statutes for Human Burials (CRS 24-80-1301, CRS 24-80-1302, and CRS 24-80-405).

No Action Alternative:

Environmental Consequences: Potential impacts under this alternative would be reduced because access would not be increased and project personnel would not be present.

Invasive Non-native Species

Affected Environment: The vegetation in the project area consists of snakeweed (*Gutierrezia sarothrae*) and Wyoming big sagebrush (*Artemisia tridentata subsp. wyomingensis*) with a dense understory of cheatgrass (*Anisantha tectorum*), a List C noxious weed.

Proposed Action:

Environmental Consequences: Surface-disturbing activities provide a niche for the invasion and establishment of non-native species, particularly when these species are already present in the surrounding area. Because cheatgrass is already dominant in the project area, the potential for further spread following construction activities is very high. Mitigation measures designed to minimize the further spread of these species are presented in Appendix A (Number 4).

No Action Alternative:

Environmental Consequences: Under the no action alternative, the further spread of cheatgrass would not be encouraged by new construction. However, the existing infestation will likely spread if it is not treated.

Migratory Birds

Affected Environment: Given the vegetation, the following Birds of Conservation Concern may be present (USFWS 2002). Within the sagebrush community, the sage sparrow (*Amphispiza belli*), and Brewer's sparrow (*Spizella breweri*) may occur. Black-throated gray warblers (*Dendroica nigrescens*) may occur in the nearby pinyon-juniper community. A raptor survey conducted in March 2008 did not locate raptor nests within 0.25 mile of proposed developments. Although no raptors are known to nest in the project area, nearby habitat provides perching, foraging, and potential nesting sites for several species, including one species on the BCC list, Swainson's hawk (*Buteo swainsoni*).

Proposed Action:

Environmental Consequences: Construction of the new pad, road, and buried pipeline would result in approximately 4.9 acres of new surface disturbance of migratory bird habitat, which would be reduced to approximately 2.7 acres after interim reclamation. If surface disturbance occurs during the nesting period of April 15 to August 1, direct take or destruction of active nests could occur. Interim reclamation would restore herbaceous vegetation on most of the disturbed area within 2 to 3 years under favorable conditions, thereby reducing long-term habitat loss. The establishment of mature shrubs could take from 5 to 25 years.

Indirectly, habitat effectiveness adjacent to the project would be reduced as a result of noise and human activity during construction, drilling, and completion activities. The effect of noise varies among bird species, but is measurable in areas exposed to relatively moderate levels of noise (LaGory 2001). Noise can mask vocalizations important for mate attraction, social cohesion, predator avoidance, prey detection, navigation, and other basic behaviors. The acoustic interference can potentially result in the reduced ability of individuals to acquire mates, reproduce, raise young, and avoid predation (West 2006). These

impacts are most likely during the construction and drilling phase when noise and human activity are at their peak. During the production and maintenance phase, individuals may avoid vehicles servicing wells but because visits are generally infrequent, temporary, and produce significantly less noise, impacts would be negligible.

The development of reserve or frac pits in the project area may be expected to attract waterfowl and other migratory birds for purposes of resting, foraging, or as a source of water. The extent and nature of the problem is not well-defined, but management measures should emphasize the prevention of contact with produced water and drilling and completion fluids that may pose a problem (e.g., acute or chronic toxicity, compromised insulation). Mitigation measures designed to limit access to reserve pits are presented Appendix A (Number 5).

Pursuant to BLM Instruction Memorandum 2008-050, a Timing Limitation from May 1 to June 30 is included as a COA for the purpose of reducing impacts to Birds of Conservation Concern (BCC) during a portion of their nesting season. An exception to this COA may be made if nesting surveys conducted within one week of surface disturbing activity indicate the absence of nesting BCC species within or immediately adjacent to the area of disturbance. (Appendix A, Numbers 6 and 7).

No Action Alternative:

Environmental Consequences: Under the no action alternative, the proposed developments would not occur, and no further impacts to migratory birds would result.

Native American Religious Concerns

Affected Environment: The Ute tribes claim this area as part of their ancestral homeland. At present, no Native American concerns are known within the project area and none were identified during the inventory. The Ute Tribe of the Uintah and Ouray Bands, the primary Native American tribe with ties to this area of the GSFO, have indicated that they do not wish to be consulted for small projects or projects where no Native American areas of concern have been identified either through survey or past consultations. Therefore, formal consultation was not undertaken. If new data are disclosed, new terms and conditions may have to be negotiated to accommodate their concerns.

Proposed Action:

Environmental Consequences: Although there would be no direct impacts from the proposed action, indirect impacts from increased access and personnel in the vicinity of the proposed project could result in impacts to unknown Native American resources ranging from illegal collection to vandalism.

A standard Education/Discovery Condition of Approval Native (COA) for the protection of Native American values would be attached to the APDs (Appendix A, Number 3a). The importance of these COAs should be stressed to the operator and its contractors, including informing them of their responsibilities to protect and report any cultural resources encountered. The proponent and subcontractors should also be aware of requirements under the American Graves Protection and Repatriation Act (NAGPRA, Appendix A, Number 3b) and the Colorado Statutes for Human Burials (CRS 24-80-1301, CRS 24-80-1302, and CRS 24-80-405).

No Action Alternative:

Environmental Consequences: Potential impacts under this alternative would be reduced because access would not be increased and project personnel would not be present.

Special Status Species (includes an analysis of Public Land Health Standard 4)

Affected Environment: According to the latest species list from the U. S. Fish and Wildlife Service (<http://mountain-prairie.fws.gov/endspp/CountyLists/COLORADO.pdf>), the following Federally listed, proposed, or candidate plant and animal species may occur within or be impacted by actions occurring in Garfield County: Uinta Basin hookless cactus (*Sclerocactus glaucus*), Parachute beardtongue (*Penstemon debilis*), DeBeque phacelia (*Phacelia submutica*), Canada lynx (*Lynx canadensis*), Mexican spotted owl (*Strix occidentalis*), yellow-billed cuckoo (*Coccyzus americanus*), razorback sucker (*Xyrauchen texanus*), Colorado pikeminnow (*Ptychocheilus lucius*), bonytail chub (*Gila elegans*), and humpback chub (*Gila cypha*). The U. S. Fish and Wildlife Service announced the delisting of the bald eagle in June, 2007 with an effective date of August 8, 2007. The BLM now considers the bald eagle a sensitive species.

Of the federally listed, proposed, or candidate wildlife species listed above, habitat is present near the project area for two of the endangered fishes, the Colorado pikeminnow and razorback sucker.

BLM Sensitive Plant and Animal Species

BLM sensitive plant and animal species with habitat and/or occurrence records in the area include adobe thistle (*Cirsium perplexans*), DeBeque milkvetch (*Astragalus debequaeus*), Naturita milkvetch (*Astragalus naturitensis*), Roan Cliffs blazing star (*Mentzelia rhizomata*), Piceance bladderpod (*Lesquerella parviflora*), Harrington's penstemon (*Penstemon harringtonii*), bald eagle (*Haliaeetus leucocephalus*), milk snake (*Lampropeltis triangulum taylori*), midget faded rattlesnake (*Crotalus viridis concolor*), and Great Basin spadefoot (*Spea intermontana*). In addition, four BLM sensitive fish species - the flannelmouth sucker (*Catostomus latipinnis*), bluehead sucker (*Catostomus discobolus*), roundtail chub (*Gila robusta*), and Colorado River cutthroat trout (*Oncorhynchus clarki pleuriticus*) - are known to inhabit the Colorado River.

Proposed Action:

Environmental Consequences:

Federally Listed, Proposed, or Candidate Plant Species

The results of a September 2007 site visit indicate that there are no federally listed, proposed, or candidate plant species or suitable habitat for these species in the project area. Therefore, the proposed action would have “**No Effect**” on these species.

Federally Listed, Proposed, or Candidate Animal Species

The September 2007 site visit also indicated that no federally listed, proposed, or candidate terrestrial animal species or their habitat are known to occur at or near the project area. Therefore, no direct or indirect impacts are anticipated and the proposed action would have “**No Effect**” on these species.

All of the endangered fish species associated with the Colorado River are adapted to naturally high sediment loads. Under the proposed action, new pad, road, and pipeline construction would increase the area of disturbed or exposed soils available for erosion and transport of sediments to nearby drainages. Although some minor, temporary increase in sediment transport to the Colorado River may occur from the proposed action, it is not likely that the increase would be detectable above current background levels. In order to reduce the risk, Best Management Practices (BMPs), and the COAs presented in Appendix A (Numbers 8 to 10) would be implemented to minimize sedimentation. In any case, all of the federally listed, proposed, or candidate fish species associated the Colorado River are adapted to naturally high

sediment loads. Therefore, impacts of the proposed action associated with sediment transport to the Colorado River would have “**No Effect**” on these species.

Additional potential impacts to the endangered Colorado River fishes would be associated with depletions in flows due to use of water from the Colorado River Basin in drilling, hydrostatic testing of pipelines, and dust abatement of unpaved access roads. Reductions in flows in the Colorado River and major tributaries have resulted from evaporative loss from reservoirs, withdrawals for irrigation, and other consumptive uses. These depletions have affected minimum flows, as well as peak “flushing” flows needed to maintain suitable substrates for spawning.

As part of a Programmatic Biological Opinion (BO) issued in 1994, the U.S. Fish and Wildlife Service (USFWS) determined that any depletion of flows in the Colorado River Basin represent a “**May Affect, Likely to Adversely Affect**” determination for individual projects. The Programmatic BO, which allows BLM to authorize projects with water depletions of less than 125 acre-feet per year, was written to remain in effect until a total depletion threshold of 2,900 acre-feet per year is reached. An amendment to that BO in 2000 (USFWS 2000b) revised the threshold to 3,000 acre-feet per year. BLM and USFWS are currently nearing completion of a new BO to cover anticipated additional depletions beyond the currently specified threshold. In the meantime, depletions associated with the current project would be well below the 125 acre-feet threshold for individual projects and within the current BO.

BLM Sensitive Plant Species

The results of a September 2007 site visit indicate no BLM sensitive plant species or their habitats in the vicinity of the proposed action.

BLM Sensitive Animal Species

The Colorado River corridor provides bald eagle nesting and winter foraging and roosting habitat. However, the Colorado River is greater than one mile from the project area, beyond the distance within which impacts to nesting or wintering bald eagles may be expected to occur. In addition to distance, the proposed developments are screened from the Colorado River by topographic features. Therefore, no impacts to bald eagle are expected.

Direct impacts to the BLM sensitive reptile and amphibian species could include injury or mortality as a result of proposed developments and subsequent production and maintenance activities. These effects would be most likely during the active season for these species, which are April to October for the milk snake, March to October for the midget faded rattlesnake, and May through September for the Great Basin spadefoot. Indirect effects to the milk snake and midget faded rattlesnake could include a greater susceptibility to predation if the roads or pads are used to aid in temperature regulation. Overall, however, there is a low likelihood that these species would be measurably affected.

Well pad and road construction would disturb soil and remove vegetation, increasing the potential for erosion and increased sedimentation to the Colorado River. Although Colorado River cutthroat trout are especially sensitive to increased sediment loads that can potentially impair preferred spawning habitats, the Colorado River is not considered spawning habitat. Sediment may reduce aquatic insect productivity that could impact food resources for trout and other wildlife.

The discussion of potential impacts and mitigation measures described above for the endangered Colorado River fishes is also relevant to the nongame fishes listed as sensitive by the BLM. Because mitigation measures would be implemented, it is unlikely that the proposed action would cause sediment loads in nearby streams, including the Colorado River, above current levels. Depletions in flow volumes

would also not be of a magnitude that would affect the BLM sensitive fish species. Therefore, no discernible impacts to these species are expected.

No Action Alternative:

Environmental Consequences: Under the no action alternative, the developments described in the proposed action would not occur. Therefore, no impacts to special status species are anticipated.

Analysis on the Public Land Health Standard for Special Status Species: The results of a recent land health assessment indicate that habitat conditions are suitable for those special status species which are known or likely to occur there (BLM 2000). Most of the areas examined were achieving Standard 3. The sites are located in old pinyon-juniper burn areas and, as a result, good plant diversity and productivity were present. Perennial grasses and forbs were common and cheatgrass was not abundant. The landscape appeared to be providing enough quality habitats to sustain the limited number of special status species with potential habitat in the area.

Since potential habitat for special status plant species is not present in the project area and no offsite or indirect impacts are anticipated, the proposed action should have no effect on these species. The proposed action should not result in a failure of the area to achieve Standard 4 for special status plants. The proposed developments would not occur under the no action alternative, and therefore, it should also have no bearing on Standard 4.

Due to the current habitat conditions and relatively small-scale of the proposed action, special status animal species are not likely to be affected. However, the proposed action would facilitate increased natural gas development which would further fragment habitat, reduce habitat connectivity, and reduce habitat patch size within the Battlement Mesa landscape. When considered with natural gas development that has occurred since the assessment, this Federal action would likely contribute to a declining trend and further reduce the potential for meeting or maintaining Standard 4 for certain special status animal species over the long-term.

The no action alternative would not result in a failure of the area to achieve Standard 4 because the proposed developments would not occur.

Wastes, Hazardous or Solid

Affected Environment: BLM Instruction Memoranda numbers WO-93-344 and CO-97-023 require that all National Environmental Policy Act documents list and describe any hazardous and/or extremely hazardous materials that would be produced, used, stored, transported, or disposed of as a result of a proposed project. The Glenwood Springs Resource Area, Oil & Gas Leasing and Development, Draft Supplemental Environmental Impact Statement (June 1998), Appendix L, Hazardous Substance Management Plan, contains a comprehensive list of materials that are commonly used for oil and gas projects. It also includes a description of the common industry practices for use of these materials and disposal of the waste products. These practices are dictated by various Federal and State laws and regulations, and the BLM standard lease terms and stipulations which would accompany any authorization resulting from this analysis. The most pertinent of the Federal laws dealing with hazardous materials contamination are as follows:

- The Oil Pollution Act (Public Law 101-380, August 18, 1990) prohibits discharge of pollutants into waters of the US, which by definition would include any tributary, including any dry wash that eventually connects with the Colorado River.

- The Comprehensive Environmental Response, Compensation, and Liability Act (Public Law 96-510 of 1980) provides for liability, compensation, cleanup, and emergency response for hazardous substances released into the environment. It also provides national, regional, and local contingency plans. Applicable emergency operations plans in place include the National Contingency Plan (40 CFR 300, required by section 105 of CERCLA), the Region VIII Regional Contingency Plan, the Colorado River Sub-Area Contingency Plan (these three are Environmental Protection Agency produced plans), the Mesa County Emergency Operations Plan (developed by the Mesa County Office of Emergency Management), and the BLM Grand Junction Field Office Hazardous Materials Contingency Plan.
- The Resource Conservation and Recovery Act (RCRA) (Public Law 94-580, October 21, 1976) regulates the use of hazardous substances and disposal of hazardous wastes. Note: While oil and gas lessees are exempt from RCRA, right-of-way holders are not. RCRA strictly regulates the management and disposal of hazardous wastes.

Emergency response to hazardous materials or petroleum products on BLM lands are handled through the BLM Grand Junction Field Office contingency plan. BLM would have access to regional resources if justified by the nature of an incident.

Proposed Action:

Environmental Consequences: Possible pollutants that could be released during the construction phase of this project would include: diesel fuel, hydraulic fluid and lubricants. These materials would be used during construction of the road and pipeline and for refueling and maintaining equipment and vehicles. Potentially harmful substances used in the construction and operation would be kept onsite in limited quantities and trucked to and from the site as required. No hazardous substance, as defined by 40 CFR 355 would be used, produced, stored, transported, or disposed in amounts above threshold quantities.

Surface water or groundwater could be impacted under the proposed action. Pollutants that might be released during the operational phase of the project could include condensate, produced water (if the wells in the area produce water) and glycol (carried to the site and used as antifreeze.) While uncommon, an accident could occur which could result in a release of any of these materials. A release could result in contamination of surface water or soil. Improper casing and cementing procedures could result in the contamination of groundwater resources. In the case of any release, emergency or otherwise, the responsible party would be liable for cleanup and any damages. Depending on the scope of the accident, any of the above referenced contingency plans would be activated to provide emergency response. At a minimum, the BLM Grand Junction Field Office contingency plan would apply.

These laws, regulations, standard lease stipulations, and contingency plans and emergency response resources are expected to adequately mitigate any potential hazardous or solid waste issues associated with the proposed action.

No Action Alternative:

Environmental Consequences: Under this alternative, alternative would result in no new surface disturbance and would have no effect on soil or hazardous wastes.

Water Quality, Surface and Ground (includes an analysis of Public Land Health Standard 5)

Surface Water

The proposed activities would be located southwest of the Town of Parachute within the 17,893 acre Colorado River below Rifle Creek 6th field watershed. The proposed 35I pad would be located approximately 800 feet west of the ephemeral Pete and Bill Creek, which is directly tributary to the Colorado River approximately two miles downstream and to the northwest.

According to the *Stream Classifications and Water Quality Standards* (CDPHE, Water Quality Control Commission, Regulation No. 37), Pete and Bill Creek is within the Lower Colorado River Basin segment 13a that includes all tributaries to the Colorado River from a point immediately below the confluence of Parachute Creek to the Colorado-Utah border. This segment has been designated as a use-protected stream segment. The use-protected designation refers to waters that the State of Colorado has determined do not warrant the level of protection provided by the outstanding waters designation or the anti-degradation rule (CDPHE, Water Quality Control Commission, Regulation No. 31).

Waters within segment 13a are classified aquatic life warm 2, recreation 1b, and agriculture. Aquatic life warm class 2 refers to waters not capable of sustaining a wide variety of cold or warm water biota due to habitat, flows, or uncorrectable water quality conditions. Recreation class 1b refers to stream segments where there is a potential for primary contact recreation. The agriculture class refers to waters that are suitable for irrigation or livestock use. Numeric standards include a comprehensive list of physical, biological, inorganic, and metal standards that have been established to protect these designated uses. At this time, there are no water quality data for Pete and Bill Creek.

Pete and Bill Creek is not currently listed on the State of Colorado's *303(d) List of Water Quality Limited Segments Requiring TMDLS* (CDPHE, Water Quality Control Commission, Regulation No. 93) that identifies stream segments that are not currently meeting water quality standards with technology based controls alone or the *Monitoring and Evaluation List* (CDPHE, Water Quality Control Commission, Regulation No. 94) as a water body suspected to have water quality problems.

Proposed Action:

Environmental Consequences: The proposed activities would temporarily remove vegetation resulting in a slight increase in erosion potential and the potential for sediment transport to nearby Pete and Bill Creek. However, the likelihood of sediment reaching the drainage is minimal due to the relatively flat topography, the distance between the proposed activities and the drainage, and the adequate vegetation buffer that exists between ground disturbing activities and Pete and Bill Creek.

No Action Alternative:

Environmental Consequences: The no action alternative would result in no new surface disturbance and would have no impact on surface water.

Waters of the U.S.

Affected Environment: Section 404 of the Clean Water Act requires a Department of the Army permit from the US Army Corps of Engineers prior to discharging dredged or fill material into waters of the United States as defined by 33 CFR Part 328. A Corps permit is required for both permanent and

temporary discharges into waters of the United States. While Pete and Bill Creek is in close proximity to the proposed activities, it is not within the proposed project area.

Proposed Action:

Environmental Consequences: The proposed activities would not involve any waters of the U.S. directly but there is slight potential for sediment delivery to Pete and Bill Creek from proposed fill slopes and the access road.

No Action Alternative:

Environmental Consequences: The no action alternative would not impact waters of the U.S.

Groundwater

Affected Environment: The project area is located within the Division of Water Resources (DWR) Water Division 5, which encompasses Garfield County. The groundwater in this division is generally found in alluvial and sedimentary aquifers.

The major alluvial aquifer in the project area is the Colorado River Basin. The alluvium in the Colorado River Basin generally consists of unconsolidated boulders, cobbles, gravel, sand, silt, and clay. The thickness of the alluvium is variable, but tends to be thinner in the upper reaches and thicker in the lower reaches. Generally, alluvial well depths are less than 200 feet and typically range from 20 to 40 feet. The quality of alluvial groundwater in the Colorado River Basin can vary widely, and is affected by return flow quality, mineral weathering and dissolution, cation-anion exchange with alluvial minerals, and organic compound loading from fertilizer and pesticide leaching.

The project area lies in the southern portion of the Piceance Basin, the major sedimentary aquifer in the region. The basin is drained by a number of tributary creeks that flow into the Colorado River. Most of the groundwater recharge is provided by winter precipitation and stored as snowpack at higher elevations. According to the State of Colorado database, there are 12 water wells located in Section 35, T7S, R96W (CDWR 2005). The depths of the wells range from 20 to 200 feet. The wells are likely completed in the Wasatch Formation or surface alluvium. The use of the wells is primarily domestic; therefore it can be assumed that the quality of the water is fit for human consumption.

Proposed Action:

Environmental Consequences: With the use of proper construction practices, drilling practices, and with the use of best management practices, no significant adverse impact to groundwater aquifers is anticipated to result from the proposed action. A geologic and engineering review was performed on the 10-point drilling plan to ensure that the cementing and casing programs adequately protect the downhole resources.

No Action Alternative:

Environmental Consequences: The no action alternative would have no impact on groundwater.

Analysis on the Public Land Health Standard for Water Quality: The proposed action and the no action alternative would not likely prevent Standard 5 from being achieved.

Other Affected Resources

In addition to the critical elements, the resources presented in Table 4 were considered for impact analysis relative to the proposed action and no action alternative. Resources that would be affected by the proposed action and no action alternative are discussed below.

Table 4. Other Resources Considered in the Analysis.			
<i>Resource</i>	<i>NA or Not Present</i>	<i>Present and Not Affected</i>	<i>Present and Affected</i>
Access and Transportation			X
Cadastral Survey	X		
Fire/Fuels Management	X		
Forest Management	X		
Geology and Minerals			X
Law Enforcement	X		
Paleontology			X
Noise			X
Range Management	X		
Realty Authorizations	X		
Recreation	X		
Socio-Economics			X
Soils			X
Vegetation			X
Visual Resources			X
Wildlife, Aquatic			X
Wildlife, Terrestrial			X

Access and Transportation

Affected Environment: The project area would be located 4 air-miles south of Parachute, Colorado, and south of the Colorado River about 2 miles east of the Una Bridge. The area is presently accessed using Garfield CR 300 east of the Una Bridge and from Garfield CR 304, which provides access to the Noble lease and EnCana's South Parachute field on High Mesa. Since there is a traffic control gate at bottom of the mesa north of the proposed pad site and the pad is located on private land, public motorized travel is not available to the project area.

Proposed Action:

Environmental Consequences: The proposed action would result in a substantial, but short-term, increase in truck traffic. The largest increase would be during rig-up, drilling, and completion activities. Data

indicate that approximately 1,160 truck trips over a 30-day period would be required to support the drilling and completion of each well (Table 5). Once the wells are producing, the volume of traffic would decrease dramatically. During the operations phase of the project, traffic would be limited to weekly visits to the well pad for inspection and maintenance. Each well may have to be recompleted once per year, requiring three to five truck trips per day for approximately 7 days.

Table 5. Traffic Associated with Drilling and Completion Activities.		
<i>Vehicle Class</i>	<i>Number of trips per well</i>	<i>Percentage of total</i>
16-wheel tractor trailers	88	7.6%
10-wheel trucks	216	18.6%
6-wheel trucks	452	39.0%
Pickup trucks	404	34.8%
Total	1,160	100.0%
Source: BLM 2006. Note: Trips by different vehicle types are not necessarily distributed evenly during the drilling process. Drilling and completion period is approximately 30 days per well.		

Degradation of field development roads may occur due to heavy equipment travel and fugitive dust and noise would be created. Mitigation measures (Appendix A, Numbers 2, 8, and 9) would be required as conditions of approval to ensure adequate dust abatement, road construction, and road maintenance.

No Action Alternative:

Environmental Consequences: This alternative would not have an impact on access or transportation, because the development activities would not occur.

Geology and Minerals

Affected Environment: The project area is located within the southern Piceance Basin, an elongate northwest-southeast trending structural basin at the eastern edge of the Colorado Plateau. The basin is highly asymmetrical and deepest along its east side near the White River Uplift, where more than 20,000 feet of sedimentary rocks are present. It is bounded on the north by the Uinta Mountain Uplift and the Axial Arch, on the east by the Grand Hogback Monocline which lies along the west flank of the White River Uplift, on the southeast by the Gunnison and Uncompahgre uplifts, and on the west by the Douglas Creek Arch, which separates the Piceance Basin from the Uinta Basin in Utah. Surface exposures in the Piceance Basin are primarily sedimentary rocks of the Green River and Wasatch formations.

Mineral resources within the vicinity of the project area include oil and gas deposits, coal, and sand and gravel. Several known hydrocarbon-producing marine sands are located at the base of the Williams Fork Formation, including the Cameo coal zone, as well as an upper zone, known locally as the Mesaverde Formation. Located just above the Cameo coal zone, these massively stacked lenticular coastal plain and fluvial point bar sandstones have been effectively perforated by new fracturing techniques to produce good gas flows. Limited sand and gravel deposits are found in Quaternary alluvium along stream valleys.

The operator's proposed gas drilling program would include drilling 11 wells from one pad, targeting horizons within the Williams Fork Formation.

Proposed Action:

Environmental Consequences: Implementation of the proposed action would result in natural gas and associated water being produced from the hydrocarbon-bearing sands within the Mesaverde Group. The amount of natural gas that may be potentially produced from the proposed wells cannot be estimated accurately. However, if the wells become productive, initial production rates would be expected to be highest during the first few years of production, then decline during the remainder of the wells' economic lives. Natural gas production from the proposed wells would contribute to the draining of hydrocarbon-bearing reservoirs within the Mesaverde Group in this area, an action that would be consistent with BLM objectives for mineral production.

Casing programs have been designed to specifically prevent hydrocarbon migration from gas-producing strata penetrated by the well bore during drilling, initial production and after completion of the well. Identification of potential fresh water bearing zones, aquifers, gas producing zones, and under- and over-pressured formations are incorporated into drilling scenarios for the proposed wells. Estimates of what depth these zones would be encountered are used to determine drilling fluids, fluid densities, surface casing depths, and production planning. The proposed casing and cementing program has been designed to protect and isolate all usable water zones, potentially productive zones, lost circulation zones, and abnormally high-pressure zones.

No Action Alternative:

Environmental Consequences: Under the no action alternative, the proposed action would not be approved. There would be no new impacts on the geology and mineral resources as a consequence of selecting this alternative.

Noise

Affected Environment: The proposed action would lie within a rural setting characterized by fairly recent natural gas development activities. Noise levels in the area are presently created by traffic serving existing wells and ongoing drilling and completion activities. The proposed activities would be located approximately ¼ mile from two residences.

Proposed Action:

Environmental Consequences: Implementation of the proposed action would initially result in increased noise levels during construction of the well pads and access roads. Based on an average construction equipment noise level of 59 dB(A) at 1,000 feet, construction noise at the nearby residences would be approximately 57 dB(A) (Table 6). At this distance, noise levels would approximate those associated with a normal suburban residential setting (EPA 1974). Noise levels would drop at a constant rate at greater distances (Harris 1991). At 1.0 mile, noise levels would be approximately 41 dB(A) and about 38 dB(A) at 1.5 miles. This noise level would likely persist during daytime hours during the entire construction period (1 to 2 weeks).

Drilling and completion operations would generate approximately 62 to 68 dB(A) at 500 feet from the proposed pad. Nearby residents would experience somewhere in the area of 54 to 58 dB(A) which approximates noise levels associated with construction activities. The elevated noise levels would be continuous and last as long as 30 to 60 days at each well.

Traffic noise levels would also be elevated as a consequence of the proposed action. The greatest increase would be along access roads during the drilling and completion phases. Based on the La Plata

County data presented in Table 7, approximately 68 dB(A) of noise (at 500 feet) would be created by each fuel and water truck that travels these roads. Less noise would be created by smaller trucks and passenger vehicles such as pickup trucks and sport utility vehicles. Although the duration of increased noise from this source would be short, it would occur repeatedly during the drilling and completion phases. Traffic noise level would impact residences located along county roads that would provide primary access into the area. While exposure to these noise levels is not likely to be harmful, it is likely to be annoying to residents.

Table 6. Noise Levels Associated with Typical Construction Equipment			
<i>Equipment</i>	<i>Noise Level (dB(A))</i>		
	<i>50 feet</i>	<i>500 feet</i>	<i>1,000 feet</i>
Tractor	80	60	54
Bulldozer	89	69	63
Backhoe	85	65	59
Crane	88	68	62
Air Compressor	82	62	56
Dump Truck	88	68	62
Average (rounded to nearest whole dB(A))	85	65	59
Source: BLM 1999b			

Table 7. Noise Levels Associated with Oil and Gas Production and Development.		
<i>Source</i>	<i>Reported Noise Level</i>	<i>Where Measured</i>
Typical compressor station	50 dB(A)	375 feet from boundary
Pumping units	50 dB(A)	325 feet from well pad
Fuel and water trucks	68 dB(A)	500 feet from source
Crane for hoisting rigs	68 dB(A)	500 feet from source
Concrete pump used during drilling	62 dB(A)	500 feet from source
Average well construction site	65 dB(A)	500 feet from source
Source: La Plata County (2002)		

Noise impacts would decrease during the production phase. Pumping units and compressor noise levels would be approximately 50 dB(A) at 325 to 375 feet and continued small truck traffic would generate somewhat less. These levels would be less than the construction and drilling and completion phases, but greater than background noise levels. During maintenance and workovers, noise would increase above noise levels associated with routine well production.

No Action Alternative:

Environmental Consequences: Under the no action alternative, there would be no increase in current noise levels because the developments described in the proposed action would not take place.

Paleontology

Affected Environment: The surface formation is the Wasatch Formation (including the Ft. Union equivalent at its base) and the Ohio Creek Formation. The Wasatch Formation is a Class 1 formation, defined as an area that is known to contain fossil localities. Fossils historically identified in the Wasatch are archaic mammals—including marsupials, representatives of two extinct orders of early mammals (pantodonts and creodonts), artiodactyls (deer-like, even-toed ungulates), ancestral horses and other perissodactyls (odd-toed ungulates), carnivores, and primates—as well as birds, lizards, turtles, crocodylians, gars and other fishes, freshwater clams, gastropods (snails), and other invertebrates.

Proposed Action:

Environmental Consequences: An examination of the BLM paleontology database indicates that the nearest known fossil occurrences are located approximately 0.5 mile northwest of the proposed project area. Although the surface formation is the Wasatch Formation, the ground cover underlying location is defined as agricultural grasses, historically used as irrigated alfalfa fields. The numerous planting and cultivating cycles defined by such use would cover and obscure the sedimentary bedrock layers in which fossils may occur, deeming any fossils present unidentifiable or irretrievable. The historical use of the ground surface underlying the project area and the absence of any apparent bedrock outcroppings would not be indicative of fossil occurrences. Therefore, no further monitoring is recommended. The standard paleontological condition of approval would be attached to the APDs (Appendix A, Number 11).

No Action Alternative:

Environmental Consequences: Under this alternative, no impacts to paleontological resources would occur.

Socio-Economics

Affected Environment: The project area is located within Garfield County, Colorado. The population of Garfield County has grown by approximately 2.8 percent per year from 2000 to 2005, resulting in an increase from 44,300 to 51,000 residents (U.S. Bureau of the Census 2005). The annual population growth rate is projected to decline gradually through the year 2030, growing to a population of about 97,000 by that time (Colorado Department of Local Affairs 2003).

In the year 2000, industry groups in Garfield County with the highest percentage of total employment were construction (20.4 percent), tourism (10.7 percent), retail trade (13.7 percent), and education and health (15.4 percent). An estimated 13.3 percent of the population was retired in the year 2000 and did not earn wages. Employment in agriculture, forestry, hunting, and mining accounted for 2.4 percent of total employment. In the year 2001, an estimated 239 persons were employed within the mining industry in Garfield County.

In 2005, oil and gas assessed valuation in Garfield County amounted to \$984,417,880 or about 55 percent of total assessed value in the county. Total tax revenues from property taxes and special district levies were \$86,678,430. Based on this assessed value, the top five taxpayers in the county in 2005 were mining companies.

Federal mineral royalties are levied on oil and gas production from Federal mineral leases. For oil and gas production in Garfield County in 2003, total Federal royalties collected amounted to \$125,683,586. Half of those royalties of \$62,841,784 was paid to the State of Colorado. The state's share of the revenue was then distributed to a variety of state and local agencies. Counties where oil and gas were produced received 8 percent of total revenues, local towns in those counties received 5 percent, and local school districts received 5 percent. In 2003, the Garfield County share of Federal mineral lease royalties was \$1,332,000.

Proposed Action:

Environmental Consequences: The proposed action would result in a minor positive impact on the economy of Garfield County through increased in tax and royalty revenues. Additional job opportunities might also be created and supporting trades and services would benefit to a minor extent.

The proposed action could result in negative social impacts including: 1) reducing scenic quality (see **Visual Resources**), 2) increased dust levels especially during construction (see **Air Quality**), and 3) increasing traffic (see **Access and Transportation**).

No Action Alternative:

Environmental Consequences: Under this alternative, minor positive economic impacts and nominal negative social impacts associated with the proposed action would not occur.

Soils (includes an analysis of Public Land Health Standard 1)

Affected Environment: According to the *Soil Survey of Rifle Area, Colorado: Parts of Garfield and Mesa Counties* (USDA Soil Conservation Service, 1985), the proposed activities would occur on the soil map unit, Potts loam. Potts loam is a deep, well-drained soil found on mesas, benches, and the sides of valleys at elevations ranging from 5,000 to 7,000 feet and on slopes of three to six percent. Parent material for this soil includes sandstone, shale, and basalt. Surface runoff for this soil is slow and the erosion hazard is moderate. Primary uses for this soil include irrigated crops and dry land farming.

Proposed Action:

Environmental Consequences: There would be a slight amount of soil loss, loss of soil productivity, and an increase in sediment available for transport resulting from construction activities. However, these activities would occur in an area that has relatively flat topography and would be occur at some distance from nearby drainages. In addition, the area contains adequate vegetation buffers that would minimize the potential for sediment transport.

No Action Alternative:

Environmental Consequences: The no action alternative would have no impact on soils.

Analysis on the Public Land Health Standard for Upland Soils: The proposed action and the no action alternative would not likely prevent Standard 1 from being achieved.

Vegetation (includes an analysis of Public Land Health Standard 3)

Affected Environment: The vegetation in the project area consists of snakeweed and Wyoming big sagebrush with a dense understory of cheatgrass.

Proposed Action:

Environmental Consequences: Total short-term surface disturbance for the proposed pad and associated access road and pipeline would be 4.9 acres of private land. With implementation of reclamation practices identified in Appendix A, Number 10, establishment of desirable herbaceous vegetation on the unused portions of the pad, pipeline, and road could be restored within 2 to 3 years. The establishment of mature shrubs could take from 5 to 25 years, and the establishment of trees would take even longer.

Assuming the pad, road and pipeline are reclaimed to the extent possible, interim reclamation would reduce the surface disturbance to approximately 2.7 acres that would remain over the long-term life of the project.

No Action Alternative:

Environmental Consequences: Under the no action alternative, no construction or development activities would take place; therefore, vegetation would not be affected.

Analysis on the Public Land Health Standard for Plant and Animal Communities (partial, see also **Wildlife, Aquatic and Wildlife, Terrestrial**): The results of the Battlement Mesa Area Land Health Assessment indicate that portions of these lands were found not to be meeting Standard 3 (BLM 2000). Specific concerns related to the condition of the sagebrush and pinyon-juniper habitats that comprise important big game winter range as well as habitat fragmentation, loss of habitat, and increased human use associated with natural gas exploration and development.

If the implementation of mitigation measures is successful, the proposed action is not likely to contribute to further degradation relative to Standard 3. The no action alternative would have no bearing on the ability of the area to meet the public land health standard for plant and animal communities.

Visual Resources

Affected Environment: The proposed action would take place on split-estate Federal lease within an area classified by the BLM as Visual Resource Management (VRM) Class IV (USDI 1984). The management of visual resources in Class IV areas allows for major modifications of the existing character of the landscape. In these areas, alterations may dominate the view and may be the major focus of viewer attention. However, attempts should be made to minimize impacts in Class IV areas through careful project design aimed at minimizing disturbance and repeating basic landscape elements.

The vegetation type found in the project is comprised of open sagebrush with cheatgrass in the understory. The landscape colors are dominated by tan, gold, and green vegetation, and grey-tan soils. The colors and values (i.e., degrees of lightness and darkness) of the soils and vegetation are similar and exhibit little contrast during most months of the year. In spring and early summer, greening vegetation displays the greatest color contrasts with the areas soils.

Existing well development and associated access roads occur on Federal and private lands near the project area. Most of the existing visual impacts to viewers on I-70 and residences south of the highway are related to natural gas development on private lands because viewing areas are fairly close to developments, and the relatively flat terrain of the valley floor provides unimpeded views of natural gas facilities from I-70 and residential areas.

Proposed Action:

Environmental Consequences: The proposed action would result in short-term visual impacts from construction, drilling, and completion activities. The existing landscape would be changed by the introduction of new elements of line, color, form, and texture. The new pad and other surface facilities, new spur roads, and pipeline connections would increase the presence of drilling rigs, heavy equipment (e.g., dozers, graders, etc.), and vehicular traffic, with an associated increase in dust, light pollution, and well flaring.

Construction activities would occur over a 2- to 4-week period. At a given location, drilling and completion activities would occur 24 hours per day for a 30- to 60-day period. Consequently, the drill rig, other large equipment, lights, and well flaring would be visible in the night sky for up to two months at each well location.

Although Federal lease COC64739 has a No Surface Occupancy lease stipulation to protect visual sensitivity within the Interstate 70 viewshed, the proposed 35I pad and associated developments would be located on slopes of less than 30% and would not be readily visible from the valley floor or I-70.

Long-term impacts of the proposed action would consist of reduced visual character within portions of the landscape where new pad facilities, pipelines, and roads cannot be screened from sight. The visibility of new areas of surface disturbance and production equipment would increase the existing visual contrasts associated with human modifications already present in the project area. However, interim reclamation (Appendix A, Number 10), as well as the use of natural colors on production equipment (Appendix A, Number 12), would largely mitigate long-term impacts.

No Action Alternative:

Environmental Consequences: Under the no action alternative, none of the development described under the proposed action would be authorized and no new surface disturbance would occur. Visual resources would remain unchanged from present conditions.

Wildlife, Aquatic (includes an analysis of Public Land Health Standard 3)

Affected Environment: Two ephemeral streams flank the small mesa where the project is located and both drain to the Colorado River approximately one mile north. In addition to a variety of fish species, the Colorado River contains a variety of aquatic invertebrates.

Proposed Action:

Environmental Consequences/Mitigation: The project activities would increase the potential for soil erosion and sedimentation into the ephemeral drainage east of the project area, which could cause a temporary increase in sediment transport to the Colorado River. However, these activities would occur in an area that has relatively flat topography and would be occur at some distance from nearby drainages. In addition, the area contains adequate vegetation buffers that would minimize the potential for sediment transport. It therefore is unlikely that the proposed action would cause a sediment load increase in the Colorado River above detectable background levels. Therefore, aquatic species are unlikely to be impacted. Mitigation measures presented in Appendix A (Numbers 8 to 10) would be implemented to minimize the risk of erosion and sedimentation.

No Action Alternative:

Environmental Consequences: Under the no action alternative, no construction or development activities would take place; therefore, aquatic wildlife would not be affected.

Analysis on the Public Land Health Standard 3 for Plant and Animal Communities (partial, see also **Vegetation and Wildlife, Terrestrial**): Although the proposed action has the potential to increase sediment, the anticipated increase would not increase sediment loads above normal levels. The proposed action, in conjunction with a large amount of similar activity occurring within the larger watershed, may trend the area away from meeting Standard 3 for sediment sensitive aquatic wildlife.

The no action alternative would not affect Standard 3 because energy development would not occur.

Wildlife, Terrestrial (includes an analysis of Public Land Health Standard 3)

Affected Environment: The project area is located in mapped big game winter range that has been identified as high value habitat (CDOW 2006). The Federal lease COC64739 contains a big game winter timing limitation stipulation that prohibits construction, drilling, and completion activities from December 1 to April 30. The BLM, in consultation with the Colorado Division of Wildlife (CDOW), has granted an exception to this stipulation for the 2007-2008 winter season under the condition that 60 acres of the former hayfield be converted to alfalfa production to provide winter forage for deer and elk. The agreement further stipulates that alfalfa would be managed for wildlife for a minimum of 7 years by leaving regrowth following the first cutting.

Proposed Action:

Environmental Consequences: Impacts include, but are not limited to, displacement into less suitable habitat and increased stress. These impacts are more significant during critical seasons, such as winter or reproduction. Big game species are often restricted to smaller areas during the winter months and may expend high amounts of energy to move through snow, locate food and maintain body temperature. Disturbances during the winter can displace wildlife, depleting much needed energy reserves and may lead to decreased over winter survival.

Although big game use of the area may temporarily decrease as a result of noise and human activity associated with well pad construction and drilling, the return of alfalfa production for a minimum of 7 years would provide high quality winter forage on 60 acres approximately 0.25 mile south of the pad, thereby reducing potential impacts of winter drilling (Appendix A, Number 13).

No Action Alternative:

Environmental Consequences: Because new development activity would not take place under the no action alternative, terrestrial wildlife would not be affected.

Analysis on the Public Land Health Standard for plant and animal communities (partial, see also **Vegetation and Wildlife, Aquatic**): The results of Battlement Mesa Area Land Health Assessment indicate that portions of these lands were found not to be meeting the Standard 3 (BLM 2000). Specific concerns related to the condition of the sagebrush and pinyon-juniper habitats that comprise important big game winter range as well as habitat fragmentation, loss of habitat, and increased human use associated with natural gas exploration and development.

Although the proposed action would result in increased human use of the area, on balance, the proposed action may have a minor beneficial impact relative to Standard 3 because a 60-acre area would be seeded with alfalfa, which is preferred forage for big game. The no action alternative would have no bearing on the ability of the area to meet the public land health standard for plant and animal communities.

The no action alternative would not affect Standard 3 because energy development would not occur.

SUMMARY OF CUMULATIVE IMPACTS

The *Glenwood Springs Oil and Gas Leasing and Development Final Supplemental EIS* (FSEIS) (BLM 1999) analyzed three alternatives for oil and gas development in the Glenwood Springs Resource Area (GSRA). The assessment included an analysis of impacts of past, present, and reasonable foreseeable future actions, including predicted future oil and gas development, on both public and private lands. Since the 1999 FSEIS presents the most current analysis of cumulative impacts in the project area, it is incorporated by reference.

Until relatively recently, modifications of the region have been characteristic of agricultural and ranching lands, with localized industrial impacts associated with the railroad and I-70 highway corridors. More recently, these changes are cumulative to the growth of residential and commercial uses, utility corridors, oil and gas developments, and other rural industrial uses. These increasing activity levels have accelerated the accumulation of impacts in the area. These impacts have included: (1) direct habitat losses; (2) habitat fragmentation and losses in habitat effectiveness; (3) elevated potential for runoff, erosion, and sedimentation; (4) expansion of noxious weeds and other invasive species; and (5) increased noise and traffic and reductions in the scenic quality of the area (BLM 1999: 4-1 to 4-68).

Although none of the cumulative impacts described in the FSEIS were characterized as significant, and while new technologies and regulatory requirements have reduced the impacts of some land uses, it is nonetheless clear that past, present, and reasonably foreseeable future actions has had and would continue to have adverse affects on various elements of the human environment. The anticipated impact levels for existing and future actions range from negligible to locally major, and primarily negative, for specific resources. The primary reasons for this assessment are twofold: (1) the rate of development, particularly oil and gas development, is increasing in the area, resulting in an accelerated accumulation of individually nominal effects; and (2) the majority of residential and commercial expansion, as well as oil and gas development, have occurred, and is likely to continue to occur, on private holdings where mitigation measures designed to protect and conserve resources are not in effect.

It is clear that the proposed action would contribute to the collective adverse impact for some resources. Although the contribution would be very minor, the proposed action would contribute incrementally to the collective impact to air quality, vegetation, migratory birds, terrestrial wildlife, and other resources.

PERSONS AND AGENCIES CONSULTED:

Linda Pavelka, Noble Energy, Inc. – Regulatory Analyst
Mike Bonkiewicz, Noble Energy, Inc. – Construction Foreman
Ron Rennke, D.R. Griffin & Associates – Land Surveyor
Larry Klebold – Surface Owner

INTERDISCIPLINARY REVIEW:

<i>Name</i>	<i>Title</i>	<i>Responsibility</i>
Jim Byers	Natural Resource Specialist	Team Leader, Access and Transportation, Socio-Economic, Solid and Hazardous Wastes, Visual Resources
Mark Ennes	Planning and Environmental Coordinator	NEPA Compliance
Beth Brenneman	Ecologist	Invasive Non-native Species, Special Status Species, Vegetation
Karen Conrath	Geologist	Geology and Minerals, Groundwater, Paleontology
Jeff Cook	Wildlife Biologist	Migratory Birds, Special Status Species, Terrestrial and Aquatic Wildlife
Cheryl Harrison	Archaeologist	Cultural Resources, Native American Religious Concerns
Jeff O'Connell	Hydrologist	Air Quality, Noise, Soil, Surface Water, Waters of the U.S.
Marty O'Mara	Petroleum Engineer	Downhole COAs

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Finding of No Significant Impact (FONSI) CO140-2008-061 EA)

The environmental assessment analyzing the environmental effects of the proposed action has been reviewed. The approved mitigation measures result in a Finding of No Significant Impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

DECISION RECORD

DECISION: It is my decision to approve the Applications for Permit to Drill (APDs) for the 11 directional wells proposed for drilling on the 35I pad along with construction of associated road spurs and pipeline connections. This decision will provide for the orderly, economical, and environmentally sound exploration and development of oil and gas resources on valid oil and gas leases.

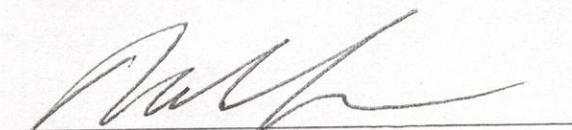
RATIONALE:

1. Approval of the proposed action is validating the rights granted with the Federal oil and gas leases to develop the leasehold to provide commercial commodities of oil and gas.
2. The environmental impacts have been mitigated with measures included in the attached Conditions of Approval.

MITIGATION MEASURES: Mitigation measures presented in Appendices A and B will be incorporated as Conditions of Approval for both surface and drilling operations.

NAME OF PREPARER: Jim Byers, Natural Resource Specialist

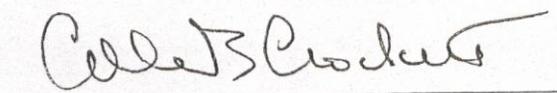
SIGNATURE OF PLANNING AND ENVIRONMENTAL COORDINATOR:



Planning and Environmental Coordinator

4/7/08
Date

SIGNATURE OF AUTHORIZED OFFICIAL:



Authorized Officer

4/7/08
Date

APPENDIX A

SURFACE USE CONDITIONS OF APPROVAL

**SURFACE USE CONDITIONS OF APPROVAL
C0140-2008-061 EA**

1. Administrative Notification. At least 48 hours prior to construction of access road, pipeline and/or well pad, the operator shall notify BLM representative of construction startup plans. The proposed pad, road and pipeline will be staked and flagged prior to start of construction.
2. Dust Abatement. The operator shall implement dust abatement measures as needed or directed by the BLM authorized officer. The level and type of treatment (watering or application of various dust agents, surfactants, and road surfacing material) may be changed in intensity and must be approved by the BLM authorized officer. Magnesium chloride or other chemical suppressant shall not be applied within 100 feet of any drainage.
- 3.a Cultural Resource Education/Discovery. All persons in the area who are associated with this project must be informed that if anyone is found disturbing historic, archaeological, or scientific resources, including collecting artifacts, the person or persons will be subject to prosecution.

Pursuant to 43 CFR 10.4(g), the BLM authorized officer must be notified, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4 (c) and (d), activities must stop in the vicinity of the discovery and the discovery must be protected for 30 days or until notified to proceed by the authorized officer.

If in connection with operations under this contract the project proponent, his contractors, subcontractors, or the employees of any of them, discovers, encounters or becomes aware of any objects or sites of cultural or paleontological value or scientific interest such as historic or prehistoric ruins, graves or grave markers, fossils, or artifacts, the proponent shall immediately suspend all operations in the vicinity of the cultural or paleontological resource and shall notify the BLM authorized officer of the findings (16 U.S.C. 470h-3, 36 CFR 800.112). Operations may resume at the discovery site upon receipt of written instructions and authorization by the authorized officer. Approval to proceed will be based upon evaluation of the resource. Evaluation shall be by a qualified professional selected by the authorized officer from a Federal agency insofar as practicable. When not practicable, the holder shall bear the cost of the services of a non-Federal professional.

Within five working days, the authorized officer will inform the holder as to:

- whether the materials appear eligible for the National Register of Historic Places
- the mitigation measures the holder will likely have to undertake before the site can be used (assuming in situ preservation is not necessary)
- a timeframe for the authorized officer to complete an expedited review under 36 CFR 800.11, or any agreements in lieu thereof, to confirm through the State Historic Preservation Officer that the findings of the authorized officer are correct and the mitigation is appropriate

The proponent may relocate activities to avoid the expense of mitigation and/or the delays associated with this process, as long as the new area has been appropriately cleared of resources and the exposed materials are recorded and stabilized. Otherwise, the proponent will be responsible for mitigation costs. The authorized officer will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the authorized officer that the required mitigation has been completed, the proponent will then be allowed to resume construction.

Antiquities, historic, prehistoric ruins, or objects of scientific interest that are outside the authorization boundaries but directly associated with the impacted resource will also be included in this evaluation and/or mitigation.

Antiquities, historic, prehistoric ruins, or objects of scientific interest, identified or unidentified, that are outside the authorization and not associated with the resource within the authorization will also be protected. Impacts that occur to such resources, which are related to the authorizations activities, will be mitigated at the proponent's cost including Native American consultation.

- 3b. Native American Religious Concerns. The Native American Graves Protection and Repatriation Act (NAGPRA), requires that if inadvertent discovery of Native American Remains or Objects occurs, activity must cease in the area of discovery, a reasonable effort made to protect the item(s) discovered, and immediate notice made to the BLM authorized officer, as well as the appropriate Native American group(s) (IV.C.2). Notice may be followed by a 30-day delay (NAGPRA Section 3(d)).
4. Weed Control. The operator shall regularly monitor and promptly control noxious weeds or other undesirable plant species as set forth in the Glenwood Springs Energy Office *Noxious and Invasive Weed Management Plan for Oil and Gas operators*, dated March 2007. A Pesticide Use Proposal (PUP) must be approved by the BLM prior to the use of herbicides. Annual weed monitoring reports shall be submitted by **December 31**. Contact Beth Brenneman, Glenwood Springs Energy Office Ecologist, at 970-947-5232 or beth_brenneman@blm.gov.
5. Migratory Birds. It shall be the responsibility of the operator to comply with the Migratory Bird Treaty Act (MBTA) with respect to “take” of migratory bird species. Contact Creed Clayton, USFWS Biologist assigned to the Glenwood Springs Energy Office, at 970-947-5219 or creed_clayton@fws.gov. Under the MBTA, “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The operator shall prevent use by migratory birds of reserve pits, produced water pits, and evaporation pits, that store or are expected to store fluids which may pose a risk to such birds (e.g., migratory waterfowl, shorebirds, wading birds, and raptors) during completion and after completion activities have ceased. Several established methods to prevent bird access are known to work. Methods may include but are not limited to netting, the use of bird-balls, or other alternative methods that effectively prevent bird access/use. Regardless of the method used, it should be applied within 24 hours after completion activities have begun. All mortality or injury to species protected by the Migratory Bird Treaty Act shall be reported immediately to the BLM project lead.
6. Birds of Conservation Concern: Pursuant to BLM Instruction Memorandum 2008-050, all surface-disturbing activities are prohibited from May 1 to June 30 to reduce impacts to Birds of Conservation Concern (BCC). An exception to this COA will be granted if nesting surveys conducted no more than one week prior to surface-disturbing activities indicate that no BCC species are nesting or otherwise present within 10 meters of the area to be disturbed. Nesting surveys shall include an auidial survey for diagnostic vocalizations in conjunction with a visual survey for adults and nests. Surveys shall be conducted by a qualified breeding bird surveyor between sunrise and 10:00 AM under favorable conditions for detecting and identifying a BCC species. Contact Jeff Cook, Glenwood Springs Energy Office Wildlife Biologist, at 970-947-5231 or jeffrey_cook@blm.gov).
7. Raptor Nesting. Raptor nest surveys conducted for this project in 2008 did not result in location of raptor nest structures within 0.25 mile of a well pad or 0.125 mile of an access road, pipeline, or other surface facility. Therefore, a Raptor Nesting Timing Limitation COA is not attached to this APD. Although BLM considers surveys conducted for a NEPA Environmental Assessment to be valid for 5

years, new nests may be built and occupied between the initial surveys and project implementation. To ensure compliance with the Migratory Bird Treaty Act, the operator should schedule construction or drilling activities to begin outside the raptor nesting season (February 1 to August 15) if practicable. If initiation of construction [or drilling] during these dates cannot be avoided, the operator is responsible for complying with the Migratory Bird Treaty Act, which prohibits the “take” of birds or active nests (those containing eggs or young), including nest failure caused by noise and human activity. Contact Jeff Cook, Glenwood Springs Energy Office Wildlife Biologist, at 970-947-5231 or jeffrey_cook@blm.gov).

8. Road Construction Standards and Surfacing. Roads will be crowned, ditched, surfaced, and constructed to BLM Gold Book standards. Roads should be periodically re-graveled when ruts exceed 6 inches in depth or as directed by the authorized officer. Initial gravel application will be a minimum lift of 6 inches.
9. Road Maintenance. The operator shall be responsible for providing timely year-round road maintenance and cleanup on the two spur roads. A regular schedule for maintenance shall include, but not be limited to, blading, ditch and culvert cleaning, road surface replacement, and dust abatement. The road shall be crowned, ditched, and drained with culverts and/or water dips. When rutting within the traveled way becomes greater than 6 inches, blading and/or gravelling shall be conducted as approved by the authorized officer.
10. Reclamation. The goals, objectives, timelines, measures, and monitoring methods for final reclamation of oil and gas disturbances are described in Appendix I (Surface Reclamation) of the 1998 Draft Supplemental EIS (DSEIS). The specific measures described below shall be followed during interim reclamation of disturbed surfaces associated with well pads, access roads, and pipelines. These measures, except seedbed preparation, shall also apply to temporary reclamation of topsoil storage piles and surfaces that are subject to interim reclamation but not scheduled to undergo interim reclamation until more than 1 year has elapsed following the surface disturbance.
 - a. Seedbed Preparation. For interim reclamation, all slopes shall be reshaped prior to seedbed preparation. Initial seedbed preparation shall consist of backfilling, leveling, and ripping all areas to be seeded to a minimum depth of 18 inches with a furrow spacing of 2 feet, followed by recontouring the surface and then spreading the stockpiled topsoil evenly. Prior to seeding, the seedbed shall be scarified and left with a rough surface. No depressions shall be left that would trap water and form ponds. Final seedbed preparation shall consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding. NOTE: Seedbed preparation is not required for topsoil storage piles or other areas of temporary reclamation.

Requests for use of soil amendments, including basic product information, shall be submitted to the BLM for approval.

- b. Seed Mixes. Selection of seed to be used in temporary or interim reclamation shall comply with the menu-based seed mixes in the letter provided to oil and gas operators dated April 16, 2007. For private surfaces, the menu-based seed mixes are recommended, but the surface landowner has ultimate authority over the seed mix to be used in reclamation. The seed shall contain no noxious, prohibited, or restricted weed seeds and shall contain no more than 0.5 percent by weight of other weed seeds. Seed may contain up to 2.0 percent of “other crop” seed by weight, including the seed of other agronomic crops and native plants; however, a lower percentage of other crop seed is recommended. Seed tags or other official documentation shall be supplied to the BLM Glenwood Springs Energy Office Ecologist (Beth Brenneman, 970-947-5232 or beth_brenneman@blm.gov) at least 14 days before the date of proposed seeding for acceptance. Seed that does not meet the above criteria shall not be applied to public lands.

Note that temporary reclamation allows use of a seed mix containing sterile hybrid non-native annual species in addition to native perennial species. For both temporary and interim reclamation, the BLM seed mixes no longer include forbs (broadleaf herbaceous species) or shrubs.

- c. Seeding Procedures. Seeding shall be conducted no more than 24 hours following completion of final seedbed preparation. A seed mix consistent with BLM standards in terms of species and seeding rate for the specific habitat type shall be used on all BLM lands affected by the project (see Attachments 1 and 2 of the letter provided to operators dated April 16, 2007).

Where practicable, seed shall be installed by drill-seeding to a depth of 0.25 to 0.5 inch. Where drill-seeding is impracticable, seed may be installed by broadcast-seeding at twice the drill-seeding rate, followed by raking or harrowing to provide 0.25 to 0.5 inch of soil cover. Hydroseeding and hydromulching may be used in temporary reclamation or in areas where drill-seeding or broadcast-seeding/raking are impracticable. Hydroseeding and hydromulching must be conducted in two separate applications to ensure adequate contact of seeds with the soil.

If interim revegetation is unsuccessful, the operator shall implement subsequent reseeding until interim reclamation standards are met. Requirements for reseeding of unsuccessful temporary reclamation will be considered on a case-by-case basis.

- d. Mulch. Mulch shall be applied within 24 hours following completion of seeding. In areas of interim reclamation that used drill-seeding or broadcast-seeding/raking, mulch shall consist of crimping certified weed-free straw or certified weed-free native grass hay into the soil. Hydromulching may be used in areas of interim reclamation where crimping is impracticable, in areas of interim reclamation that were hydroseeded, and in areas of temporary reclamation regardless of seeding method.

NOTE: As an exception to this provision, mulch is not required in areas where erosion potential mandates use of a biodegradable erosion-control blanket (straw matting).

- e. Erosion Control. Cut-and-fill slopes shall be protected against erosion with the use of water bars, lateral furrows, or other measures approved by the authorized officer. Biodegradable straw matting, bales or wattles of weed-free straw or weed-free native grass hay, or well-anchored fabric silt fence shall be used on cut-and-fill slopes and along drainages to protect against soil erosion. Additional BMPs shall be employed as necessary to reduce erosion and offsite transport of sediment.
- f. Site Protection. The pad shall be fenced to BLM standards to exclude livestock grazing for the first two growing seasons or until seeded species are firmly established, whichever comes later. The seeded species will be considered firmly established when at least 50 percent of the new plants are producing seed. The authorized officer will approve the type of fencing.
- g. Monitoring. The operator shall conduct annual monitoring surveys of reclaimed areas and shall submit an annual monitoring report to the authorized officer by **December 31** of each year. The monitoring program shall use the four Reclamation Categories defined in Appendix I of the 1998 DSEIS to assess progress toward reclamation objectives. The annual report shall document whether attainment of reclamation objectives appears likely. If one or more objectives appear unlikely to be achieved, the report shall identify appropriate corrective actions. Upon review and approval of the report by the BLM, the operator shall be responsible for implementing the corrective actions or other measures specified by the authorized officer.

h. Deadline for Temporary and Interim Reclamation. The operator will be allowed to construct the well pad to the maximum expected pad size necessary to drill and complete the number of wells proposed for this location. After 1 year from spudding the initial well, or 1 year after spudding any successive well(s), the operator shall implement and complete the standard interim reclamation practices identified above OR submit proposed best management practices to be approved by the authorized officer that would be implemented on the “open” pad to control stormwater runoff, weed control, wildlife protection, dust abatement, and/or visual resource management. Areas subject to interim reclamation but scheduled to remain in a disturbed condition for more than 1 year shall undergo temporary reclamation, as described above. Contact Beth Brenneman, Glenwood Springs Energy Office Ecologist, at 970-947-5232 or beth_brenneman@blm.gov.

11. Paleontological Resources. All persons associated with operations under this authorization shall be informed that any objects or sites of paleontological or scientific value, such as vertebrate or scientifically important invertebrate fossils, shall not be damaged, destroyed, removed, moved, or disturbed. If in connection with operations under this authorization any of the above resources are encountered the operator shall immediately suspend all activities in the immediate vicinity of the discovery that might further disturb such materials and notify the BLM authorized officer of the findings. The discovery must be protected until notified to proceed by the BLM authorized officer.

As feasible, the operator shall suspend ground-disturbing activities at the discovery site and immediately notify the BLM authorized officer of any finds. The BLM authorized officer will, as soon as feasible, have a BLM-permitted paleontologist check out the find and record and collect it if warranted. If ground-disturbing activities cannot be immediately suspended, the operator shall work around or set the discovery aside in a safe place to be accessed by the BLM-permitted paleontologist.

12. Facility Placement and Color. To reduce the view of production facilities from visibility corridors and private residence, facilities shall not be placed in visually exposed locations (i.e., they shall be located against backdrops or cut side of pad) and shall be placed to allow the maximum reshaping of cut-and-fill slopes. Furthermore, all above ground facilities shall be painted Shale Green (Munsell 5Y4/2) to blend with the existing landscape.

As a general rule, unless otherwise approved by BLM authorized officer, the production pack(s) and storage tanks(s) shall not be set more than 100 feet from the nearest wellhead to satisfy visual resource and interim reclamation objectives.

13. Big Game Winter TL Exception. A one-year exception to the big game winter range timing limitation (TL) for construction, drilling, or completion activities associated with a 50% Federal mineral interest (Federal lease COC64739) requires that Noble restore a full 60 acres of formerly irrigated hayfield and that the hayfield be managed for wildlife (i.e., by leaving regrowth following the first cutting). Noble has stated that they have reached an agreement with Larry Klebold, surface owner of project area, to proceed with this mitigation measure. Because of the currently dry and weedy condition of this pasture, alfalfa will have to be seeded as part of the mitigation. The reestablishment of an irrigation system and restoration of the pasture shall commence in time for seeding and initiation of irrigation during the 2008 growing season. As a condition for the initial 1-year TL exception, this mitigation measure shall be implemented for a period of at least 7 years (i.e., through 2014 if initiated in Spring 2008 as planned).

APPENDIX B

DOWNHOLE CONDITIONS OF APPROVAL

DOWNHOLE CONDITIONS OF APPROVAL
APPLICATION FOR PERMIT TO DRILL

Company/Operator: **Noble Energy**

Surface Location: NESE, sec. 35, Township 7 South, Range 96 West, Sixth Principal Meridian

Well Name	Well No.	Bottomhole Location	Lease
Parachute Ranch Fed	35-32D	SWNE Sec 35 T7S, R96W	COC64739
Parachute Ranch Fed	35-33A	NWSE Sec 35 T7S, R96W	COC64739
Parachute Ranch Fed	35-33B	NWSE Sec 35 T7S, R96W	COC64739
Parachute Ranch Fed	35-33C	NWSE Sec 35 T7S, R96W	COC64739
Parachute Ranch Fed	35-33D	NWSE Sec 35 T7S, R96W	COC64739
Parachute Ranch Fed	35-42C	SENE Sec 35 T7S, R96W	COC64739
Parachute Ranch Fed	35-42D	SENE Sec 35 T7S, R96W	COC64739
Parachute Ranch Fed	35-43A	NESE Sec 35 T7S, R96W	COC64739
Parachute Ranch Fed	35-43B	NESE Sec 35 T7S, R96W	COC64739
Parachute Ranch Fed	35-43C	NESE Sec 35 T7S, R96W	COC64739
Parachute Ranch Fed	35-43D	NESE Sec 35 T7S, R96W	COC64739

NOTIFICATION REQUIREMENTS

- Location Construction - at least forty-eight (48) hours prior to construction of location and access roads.
- Spud Notice - at least twenty-four (24) hours POST AND PRIOR to spudding the well.
- Casing String and Cementing - at least twenty-four (24) hours prior to running casing and cementing all casing strings.
- BOP and Related Equipment Tests - at least twenty-four (24) hours prior to initiating pressure tests.
- First Production-Notice within five (5) business days after new well begins, or production resumes after well has been off production for more than ninety (90) days.
- Reclamation - At least (24) hours prior to re-shaping the well pad.

For more specific details on notification requirements, please check the Conditions of Approval for Notice to Drill and Surface Use Program.

APD approval is valid for a period of two (2) year from the signature date. An extension period may be granted, if requested, prior to the expiration of the original approval period.

Please contact Steve Ficklin (970) 947-5213 of the Glenwood Springs Energy Office at least 24 hours prior to and after spud.

Please contact **Steve Ficklin (970) 947-5213, Julie King (970) 947-5239 or Todd Sieber (970) 947-5220 of the Glenwood Springs Energy Office** at least 24 hours prior to running the surface and production casing and conducting the BOP test.

DOWNHOLE CONDITIONS OF APPROVAL **NOTICE TO DRILL**

1. The **MINIMUM TOC** for the production casing needs to be **at least 200'** above the top of the Mesa Verde formation either during the primary cement job or through remedial cementing.
2. A cement bond log (CBL) will be run from the production casing shoe to **TOC** and shall be utilized to determine the bond quality for the production casing.
3. Any usable water zones encountered below the surface casing shall be isolated and or protected by cementing across the zone. The minimum requirement is to cement from 50 feet above to 50 feet below each usable water zone encountered. Contact BLM – Glenwood Springs, CO upon encountering any usable water zones.
4. In addition to the Onshore Order No. 2 BOP testing requirements, for safety concerns, please test BOP to 250 psi for 5 minutes.
5. In accordance with 43-CFR 3162.4(b) submit a complete set of electrical/mechanical logs in **.LAS** format with standard Form 3160-4, Well Completion or Recompletion Report and Log. Please contact Karen Conrath, (970) 947-5235 (karen_conrath@blm.gov), for further clarification.

REGULATORY REMINDERS

Approval of this application does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

All drilling operations, unless otherwise specifically approved in the APD, must be conducted in accordance with Onshore Oil and Gas Order No. 2.

All lease and/or unit operations will be conducted in such a manner that full compliance is made with applicable laws, regulations (43 CFR 3100), Onshore Oil and Gas Orders, and the approved plan of operations. The operator is fully responsible for the actions of his subcontractors.

A copy of the approved application for permit to drill (APD), including the conditions of approval and accompanying surface use plan will be furnished to the field representative by the operator to insure

compliance and will be available to authorized personnel at the drillsite whenever active construction or drilling operations are underway.

Be aware fire restrictions may be in effect when location is being constructed and/or when well is being drilled. Contact the appropriate Surface Management Agency for information.

Section 102(b)(3) of the Federal Oil and Gas Royalty Management Act of 1982, as implemented by the applicable provisions of the operating regulations at Title 43 CFR 3162.4-1(c), requires that "not later than the 5th business day after any well begins production on which royalty is due anywhere on a lease site or allocated to a lease site, or resumes production in the case of a well which has been off production for more than 90 days, the operator shall notify the authorized officer by letter or sundry notice, Form 3160-5, or orally to be followed by a letter or sundry notice, of the date on which such production has begun or resumed."

If you fail to comply with this requirement in the manner and time allowed, you shall be liable for a civil penalty of up to \$10,000 per violation for each day such violation continues, not to exceed a maximum of 20 days. See Section 109(c)(3) of the Federal Oil and Gas Royalty Management Act of 1982 and the implementing regulations at Title 43 CFR 3162.4-1(b)(5)(ii)

In the event after-hours approval or notification is necessary, please contact one of the following individuals:

Marty O'Mara	C: 970.319.5837
Petroleum Engineer	W: 970.947.5221

Todd Sieber	W: 970.947.5220
Petroleum Engineering Tech.	

Julie King	W: 970.947.5239
Petroleum Engineering Tech.	

Steve Ficklin	W: 970.947.5213
Lead Petroleum Eng Tech.	C: 970.319.2509

BLM Fax: 970.947.5267

EPA'S LIST OF NONEXEMPT EXPLORATION AND PRODUCTION WASTES

While the following wastes are nonexempt, they are not necessarily hazardous:

- Unused fracturing fluids or acids
- Gas plant cooling tower cleaning wastes
- Painting wastes
- Oil and gas service company wastes, such as empty drums, drum rinsate, vacuum truck rinsate, sandblast media, painting wastes, spent solvents, spilled chemicals, and waste acids
- Vacuum truck and drum rinsate from trucks and drums, transporting or containing nonexempt waste
- Refinery wastes
- Liquid and solid wastes generated by crude oil and tank bottom reclaimers
- Used equipment lubrication oils
- Waste compressor oil, filters, and blowdown
- Used hydraulic fluids
- Waste solvents
- Waste in transportation pipeline-related pits
- Caustic or acid cleaners
- Boiler cleaning wastes
- Boiler refractory bricks
- Incinerator ash
- Laboratory wastes
- Sanitary wastes
- Pesticide wastes
- Radioactive tracer wastes
- Drums, insulation, and miscellaneous solids