

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

ENVIRONMENTAL ASSESSMENT

NUMBER: CO140-2007-110 EA

CASEFILE NUMBER: Federal Lease COC01523 (Bottomhole)

PROJECT NAME: Proposal to Drill 3 Federal Wells from a Proposed Private Surface Location (PC28) and to Authorize an Associated Road and Pipeline Right-of-way in the South Parachute Field.

LOCATION: Lot 3, NENW, Section 28, Township 7 South, Range 95 West, Sixth Principal Meridian

LEGAL DESCRIPTIONS:

Table 1. Surface and Bottomhole Locations of the Proposed Federal Wells.		
<i>Proposed Wells</i>	<i>Surface Locations (Sec. 28, T.7 S., R.95W.)</i>	<i>Bottomhole Locations (T.7 S., R.95W.)</i>
Gardner Federal 21-15	Lot 3, 77 ft FNL, 2357 ft FWL	SWSE, Section 21, 460 ft FSL, 1980 ft FEL
Gardner Federal 28-2	Lot 3, 85 ft FNL, 2318 ft FWL	Lot 2, Section 28, 860 ft FNL, 1980 ft FEL
Gardner Federal 28-2BB	Lot 3, 87 ft FNL, 2298 ft FWL	Lot 2, Section 28, 200 ft FNL, 1980 ft FEL

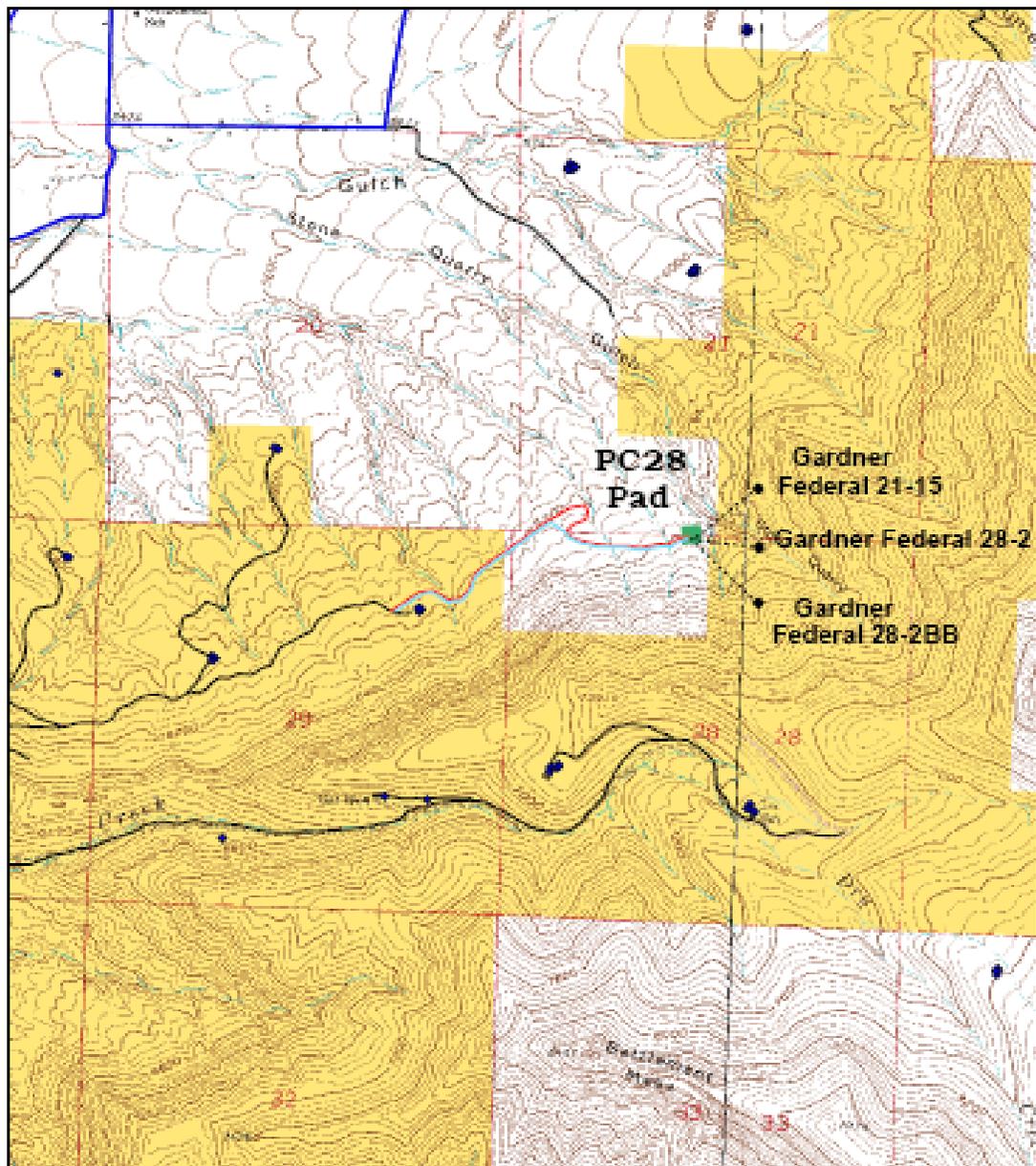
APPLICANT: EnCana Oil & Gas (USA) Inc. (“EnCana”)

DESCRIPTION OF THE PROPOSED ACTION AND NO ACTION ALTERNATIVE

Proposed Action: The proposed action is to drill and develop three Federal wells from a proposed private surface and mineral estate location in the South Parachute field (Figure 1). These wells would be directionally drilled from this location to adjacent Federal mineral estate.

The proposed PC28 well pad would be situated in sagebrush-grassland vegetative community on north-facing flats overlooking the community of Battlement Mesa and the Colorado River Valley. Maximum cut proposed for the pad would be 38.8 feet at its southern edge with a maximum proposed fill of 32.5 feet at its northern edge. The construction of the well pad would result in approximately 5.2 acres of new surface disturbance which would be reduced to approximately 1.5 acres after interim reclamation.

To accommodate access to the proposed pad, approximately 5,280 feet of new road is also proposed. The proposed road would traverse mature pinyon-juniper woodlands. Portions of the alignment would pass through areas burned during the 1987 Battlement Mesa wildfire. These areas are currently dominated by grasses and shrubs with numerous pinyon-juniper snags. Approximately 3,280 feet of the



EnCana's Proposed PC28 Pad with 3 Directional Wells

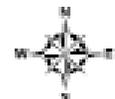
T7S R95W Sec 28, Lot 3 6th P.M.

Garfield County, CO

Surface Owner: Gardner

Proposed Road shown in Solid Red

Proposed Pipeline in Light Blue



Scale 1: 24,000

4/26/07

Figure 1. PC28 Pad Location and Proposed Road and Pipeline Alignments

proposed access road would be located on private land, and about 2,000 feet of the road would traverse land administered by the BLM. The road, which would be constructed with a 75-foot disturbance corridor, would have a finished surface width of between 16 and 20 feet. The road would be constructed to standards described in *Surface Operating Standards for Oil and Gas Exploration & Development* (USDI and USDA 2006). Construction of the road would result in approximately 9.1 acres of new surface disturbance, of which 3.4 acres would be on public lands. The public would not have motorized access to the area.

Pipelines (8-inch maximum gas and 4-inch water) to serve the proposed wells would be buried in a trench adjacent to the access road for approximately 4,800 feet (2,000 feet on BLM land). The proposed pipelines would deviate from road alignment slightly in order to shorten a switchback proposed on private land (see Figure 1). The proposed pipelines would tie into existing pipelines located on Federal surface in the northeast corner of Section 29 (see Figure 1).

As part of the proposed action, a BLM right-of-way would be granted to EnCana authorizing the 2,000-foot segment of new road and pipelines on public land. A 5-month timing limitation condition designed to protect for big game winter habitat would be attached to the grant. The limitation would prohibit traffic associated with construction, drilling, and completion activity from traveling the federally administered segment of the road from December 1 to April 30. Traffic associated with the operation and maintenance of the wells would not be prohibited during this period.

The proposed action would include well drilling and completion operations, installation of production facilities, production of natural gas, and intermediate and final reclamation measures. The Application for Permit to Drill (APD) includes a drilling program and a multi-point surface use and operations plan that describe details of well pad construction and interim reclamation. The proposed action would be implemented consistent with the terms of Federal lease COC01523, and with Conditions of Approval (COA) attached to the APD (Appendix A).

No Action Alternative: The proposed action involves federal subsurface minerals that are encumbered with federal oil and gas leases, which grants the lessee a right to explore and develop the lease. Although BLM cannot deny the right to drill and develop the leasehold, individual APD(s) can be denied to prevent unnecessary and undue degradation. The no action alternative constitutes denial of the APD(s) associated with the proposed.

Under the no action alternative, therefore, none of the proposed developments described in the proposed action would take place and a road and pipeline right-of-way would not be granted. However, wells that are currently in production in the South Parachute field would continue to be the subject of operations and maintenance activities into the foreseeable future.

PURPOSE AND NEED FOR THE ACTION: The purpose of the action is to develop oil and gas resources on Federal Lease COC01523 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 COC01523 does not contain any special stipulations.

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.

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 1999).

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 2). Only those mandatory critical elements that are present and affected are described in the following narrative.

In addition to the mandatory critical elements, there are 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 proposed action area (Garfield County) 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 amounts are determined to be below NAAQS standards.

Table 2. Critical Elements of the Human Environment									
Critical Element	Present		Affected		Critical Element	Present		Affected	
	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/WSAs		X		X
Native American Religious Concerns		X		X					

* Public Land Health Standard

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.

Activities described in the proposed action would result in localized short-term increases in vehicle and equipment emissions. 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.

No Action Alternative:

Environmental Consequences: Under the no action alternative, there would be no increase over current levels in vehicle and equipment emissions or fugitive dust generation.

Cultural Resources

Affected Environment: Two Class III cultural resource inventories (GSFO#1106-11 and 14606-3) were conducted which encompassed the proposed pad location, access road, and pipeline. No historic properties were identified that are 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, as amended (16 USC 470f), National BLM/SHPO Programmatic Agreement (1997), and Colorado Protocol (1998).

Proposed Action:

Environmental Consequences: Although there would be no direct impacts to cultural resources from the proposed action, indirect long-term cumulative impacts from increased access and 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) along with the Colorado State Statute CRS 24-80-1301 for Historic, Prehistoric, and Archaeological Resources, and for Unmarked Human Graves (Appendix A, Number 2). 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 on public land during drilling and development operations.

No Action Alternative:

Environmental Consequences: The no action alternative is not expected to result in impacts to cultural resources because access to this area would not be increased. Existing operations in the South Parachute field would remain subject to the Inadvertent Discovery clause of the National Historic Preservation Act (NHPA) which mandates the protection of cultural resources discovered subsequent to the initiation of development activities.

Invasive, Non-native Species

Affected Environment: The proposed pad lies within a grassland-sagebrush community and the proposed access road and pipeline alignments are located in a mature pinyon-juniper woodland community. Portions of the woodland were burned during the 1987 Battlement Mesa wildfire and are presently dominated by grasses and shrubs. Cheatgrass (*Anisantha tectorum*) and field bindweed (*Convolvulus arvensis*) are abundant at the pad site, and scattered individuals of common mullein (*Verbascum thapsus*) are also present. Musk thistle (*Carduus nutans*), cheatgrass, and field bindweed, in addition to minor amounts of diffuse knapweed (*Acosta diffusa*), are present along the proposed access road alignment.

Proposed Action:

Environmental Consequences: Surface-disturbing activities provide a niche for the invasion and establishment of invasive non-native species, particularly when these species are already present in the surrounding area. Because a variety of invasive, non-native species, including weeds, are already present at the proposed pad location and along the access road alignment, the potential for invasion following construction activities is very high. Mitigation measures designed to minimize the spread of these species are presented in Appendix A (Number 3).

No Action Alternative:

Environmental Consequences: Under the no action alternative, no new construction would take place; therefore, no new infestations of invasive, non-native species should take occur. However, existing infestations will spread if they are not treated.

Migratory Birds

Affected Environment: The project area provides cover, forage, and nesting habitat for a variety of migratory birds. Of these migratory birds, four species are included on the U. S. Fish and Wildlife Service Birds of Conservation Concern (BCC) and may use the coniferous woodlands surrounding the well pad to nest. These species are the pinyon jay (*Gymnorhinus cyanocephalus*), gray vireo (*Vireo vicinior*), black-throated gray warbler (*Dendroica nigrescens*), and Virginia's warbler (*Vermivora virginiae*). Other species that are not on the BCC list but associated primarily with this habitat type include year-round residents such as the juniper titmouse (*Baeolophus griseus*) and Townsend's solitaire (*Myadestes townsendi*) and migrants such as the blue-gray gnatcatcher (*Polioptila caerulea*). Although no birds of prey (raptors) are known to nest in the project area, the pinyon/juniper habitat provides perching, foraging, and potential nesting sites for several species, including one species on the BCC list, Swainson's hawk (*Buteo swainsoni*).

Other raptors potentially using the pinyon-juniper habitat for perching or nesting include the Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*A. striatus*), red-tailed hawk (*Buteo jamaicensis*), and two small owls, the western screech-owl (*Otus kennicottii*) and northern pygmy-owl (*Glaucidium gnoma*). Another species that would not be expected to nest onsite but could visit the area in search of prey is the golden eagle (*Aquila chrysaetos*); this species is on the BCC list and protected by the Bald and Golden Eagle Protection Act. All of the raptors and other species listed above are protected by the Migratory Bird Treaty Act.

Proposed Action:

Environmental Consequences: Implementation of the proposed action would result in the removal of approximately 14.3 acres of sagebrush, mountain brush and pinyon-juniper vegetation. This direct loss of habitat could impact individual birds if nest sites or territories are present. Portions of the disturbed acreage would be reclaimed which would reduce long-term habitat loss.

Habitat effectiveness would be reduced as a result of disturbance during natural gas development construction and completion activities. It is possible that during this period, individual birds could be displaced to adjacent habitats due to noise and human presence. Effects of displacement could include increased risk of predation or reproduction failure if adjacent habitat is unsuitable or at carrying capacity or if disturbance leads to nest abandonment. Effects from construction and completion activities would likely be temporary (<3 years) but some disturbance related effects could be expected to continue for the long term (>10 years) as a result of production and maintenance of the wells. Impacts to birds at the species or local population level could include a change in abundance and composition as a result of cumulative habitat fragmentation from existing and future energy development in the area.

The development of reserve 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 free water. The extent and nature of the problem is not well-defined, but birds should be prevented from contacting 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 4).

Raptors are not expected to be negatively affected as upland foraging habitat is plentiful in the area. However, raptors nesting in the vicinity could be impacted by noise and human activity if construction, drilling, and completion activities occur during the nesting season. Impacts could include reduced fecundity, nest failure, or nest abandonment. In order to mitigate these potential impacts, a raptor survey would be required prior to the initiation of construction activities. Mitigation measures, including a 60-

day timing limitation, may be required if an active nest is identified within 0.25 mile of the proposed developments (Appendix A, Number 5).

No Action Alternative:

Environmental Consequences: The no action alternative would result in no new surface disturbance or increased human activity and would have a minimal effect on the migratory bird populations.

Native American Religious Concerns

Affected Environment: The Ute Tribes claim the area as part of their ancestral homeland. Cultural resource inventories (see **Cultural Resources**) were conducted to determine if there were any areas that might be culturally sensitive to Native Americans. No areas were identified. The Ute Tribe and the Southern Ute and Ute Mountain Ute Tribes were notified via letter and were asked to identify any concerns that they might have with regard to the proposal. No concerns were expressed by these groups. However, if new data are disclosed by the Ute Tribes, 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 could result in a range of impacts to unknown Native American resources from illegal collection, vandalism, or excavation.

A standard Education/Discovery Condition of Approval (COA) and the Colorado State Statute CRS 24-80-1301 for Historic, Prehistoric, and Archaeological Resources, and for Unmarked Human Graves for the protection of Native American values would be attached to the APDs (Appendix A, Numbers 2 and 6). The importance of this COA should be stressed to the operator and its contractors, including informing them of their responsibilities to protect and report any cultural resources encountered.

No Action Alternative:

Environmental Consequences: The no action alternative is not expected to result in impacts to resources of Native American concern because access to this area would not be increased. Existing operations in the South Parachute field would remain subject to the Inadvertent Discovery clause of the National Historic Preservation Act (NHPA) and the Native American Graves Protection and Repatriation Act (NAGPRA) which mandate the protection of cultural resources discovered subsequent to the initiation of development activities.

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.htm>), 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*), bald eagle (*Haliaeetus leucocephalus*), 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*).

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*), milk snake (*Lampropeltis triangulum taylori*), midget faded rattlesnake (*Crotalus viridis concolor*), Great Basin spadefoot (*Spea intermontana*), and Colorado River cutthroat trout (*Oncorhynchus clarki pleuriticus*).

Proposed Action:

Environmental Consequences:

Federally Listed, Proposed, or Candidate Plant Species

The results of an October 2005 survey 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

No federally listed, proposed, or candidate terrestrial animal species or their habitat are known to occur within the project area. Therefore, no direct or indirect impacts are anticipated and the proposed action would have “**No Effect**” on these species.

Construction of the road and pad would increase the potential for soil erosion and sedimentation. Although a minor, temporary increase in sediment transport to the Colorado River may occur, it is not likely that the increase would be detectable above current background levels. 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, the proposed action would have “**No Effect**” on these species.

BLM Sensitive Plant Species

The results of the October 2005 inventory indicate no BLM sensitive plant species or their habitats in the vicinity of the proposed action.

BLM Sensitive Animal Species

Direct effects to the BLM sensitive reptile and amphibian species could include injury or mortality as a result of construction, 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 road or pad is used to aid in temperature regulation. Overall, however, there is a low likelihood that these species would be substantially affected.

Well pad and road construction would disturb ground and remove vegetation, increasing the potential for erosion and increased sedimentation to the Colorado River. Colorado River cutthroat trout are especially sensitive to increased sediment loads that can impair preferred spawning habitats by smothering eggs and reducing oxygen exchange and by covering gravel substrates. Sediment also reduces aquatic insect productivity which impacts food resources for trout and other wildlife. In order to reduce the risk, Best Management Practices (BMPs), and the COAs presented in Appendix A (Numbers 7-12, 15) would be implemented to minimize sedimentation.

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: Potential habitat for some BLM sensitive wildlife species occurs within or near the proposed action area but the likelihood for occurrence is low. This consideration, in combination with additional conditions of approval, is expected to result in no adverse effect to any special status wildlife species. Since there is no potential habitat for special status plant species in the project area, the proposed action should have no effect on any special status plant species. Therefore, the proposed action is not expected to result in failure to achieve Standard 4 for special status wildlife and plant species.

Because the proposed developments would not occur with the no action alternative, failure of the area to achieve Standard 4 for special status plant and animal species is not expected.

Wastes, Hazardous or Solid

Affected Environment: Hazardous materials are defined by the BLM as any substance, pollutant, or contaminant that is listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, 42 USC 9601 et seq., and its regulations. The definition of hazardous substances under CERCLA includes any “hazardous waste” as defined in the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, 42 USC 9601 et seq., and its regulations. The term does not include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under CERCLA Section 101(14), 42 USC 9601 (14), nor does the term include natural gas. No hazardous or solid wastes are known to be present in the project area, and no hazardous materials are known to have been used, stored, or disposed onsite.

Proposed Action:

Environmental Consequences: A variety of materials, including lubricants, treatment chemicals, gasoline, oil, and diesel fuel, would be used in the development activities. 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.

Most waste generated would be exempt from hazardous waste regulations under the exploration and production exemption of the RCRA. Examples of exempt wastes include process water and soils contaminated with hydrocarbons. No hazardous substance, as defined by 40 CFR 355 would be used, produced, stored, transported, or disposed in amounts above the threshold quantities.

No Action Alternative:

Environmental Consequences: The no action alternative would result in no new surface disturbance, creating little opportunity for hazardous or solid waste to be introduced into the environment.

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

Surface Water

Affected Environment: The project area would be located within the Monument Gulch and Colorado River below Rifle Creek subwatersheds within the Colorado Headwaters Plateau Watershed. Stone Quarry Gulch and a series of unnamed ephemeral streams generally flow north from the project area; all of the intermittent streams are tributaries to the Colorado River.

The unnamed ephemeral drainages that occurs within the project area are not listed on the State of Colorado's *Stream Classifications and Water Quality Standards* (CDPHE, Water Quality Control Commission, Regulation No. 37) list, *303(d) List of Water Quality Limited Segments Requiring TMDLS* (CDPHE, Water Quality Control Commission, Regulation No. 93), or the *Monitoring and Evaluation List* (CDPHE, Water Quality Control Commission, Regulation No. 94).

Proposed Action:

Environmental Consequences: The construction of the proposed well pad, pipeline, and access road would involve the removal of soil and vegetation resulting in an increase in erosion potential and offsite sedimentation. With measures to control runoff water in place, reestablishment of vegetation, and proper engineering of roads and well pads, the potential for sediment transport to the ephemeral drainages would be minimized. The mitigation measures presented in Appendix A (Numbers 7-12, 15) would be implemented to protect surface water.

No Action Alternative:

Environmental Consequences: The no action alternative would result in no new surface disturbance and would have no effect 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. Due to the flashy nature of area drainages and anticipated culvert maintenance, the Corps of Engineers recommends designing drainage crossings for the 100-year event.

Two drainage crossings that would be needed: (1) a large culvert would be needed for the access road that crosses a ditch used by the landowner for irrigation and (2) a feeder culvert would be needed under the access road to allow irrigation of the meadow below the road.

In 2005, Cordilleran Compliance Services on behalf of EnCana Oil and Gas USA, submitted permit applications to request Army Corps of Engineers verification of Nationwide Permit applicability for the drainage crossings within the project area. In 2006, the USACE responded in writing and indicated that these crossings would be authorized by Nationwide General (NWP) permit number 14.

Proposed Action:

Environmental Consequences: The drainage crossings would require the use of fill material to span the drainage which could result in additional sediment available for transport to the drainage if not properly stabilized. Rip rap and revegetation practices should be used to stabilize road fill at the crossing. Improperly designed drainage crossings, in particular undersized culverts and poorly aligned culverts, could result in channel degradation that may include: excessive bank erosion at culvert outlets, ponding of flows and excess sedimentation at culvert inlets, and channel scour both at inlets and outlets. The mitigation measures presented in Appendix A (Numbers 7-11, 15) would be implemented to protect waters of the U.S.

No Action Alternative:

Environmental Consequences: The no action alternative would have no impact on waters of the U.S. because the developments described in the proposed action would not occur.

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. The sources of Piceance Basin groundwater resources in the project area are from the Mesaverde Group.

According to the State of Colorado database, the nearest water wells are located in Sections 19 and 24, T8S, R96W (CDWR 2005). The depths of the wells range from 19 to 160 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 with associated mitigation would not likely prevent standard 5 for water quality from being met.

The no action alternative would have no bearing on Standard 5 because no development activities would take place.

Other Affected Resources

In addition to the critical elements, the resources presented in Table 3 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 3. 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
Recreation		X	
Socio-Economics		X	
Soils			X
Vegetation			X
Visual Resources			X
Wildlife, Aquatic			X
Wildlife, Terrestrial			X

Access and Transportation

Affected Environment: Access to the project area would be from Interstate 70 (Exit 75) at Parachute. Gas field traffic generally accesses the area from the frontage road west of Parachute and Garfield County Road (CR) 300 at the Una Bridge. After crossing the Colorado River at the Una Bridge, CR300 and CR304 provide the primary haul route to the project area. From CR304, access to the proposed well pad originates on privately owned lands with no legal public access.

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 4). Extended across the development of three wells, approximately 3,480 trips, primary by pick-ups and 6-and 10-wheeled trucks, would be required over a 90-day period.

Table 4. Traffic Associated with Drilling and Completion Activities.		
Vehicle Class	Number of trips per well	Percentage of total
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%
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.		

Once the wells are producing, the volume of traffic would increase 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 seven days.

The public has no legal access to the area and public access would not be affected. Degradation of field development roads may occur due to heavy equipment travel and fugitive dust and noise would be created. The mitigation measures presented in Appendix A (Numbers 9 and 12) would be implemented to ensure adequate road construction and 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 Piceance Basin, southeast of the town of Battlement Mesa. The basin is asymmetrical and deepest along its east side near the White River Uplift, where more than 20,000 feet of sedimentary rocks are present. Surface exposures in the Piceance Basin are primarily sedimentary rocks from the Tertiary Period that include 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. There are several known hydrocarbon-producing marine sands located at the base of the Mesaverde Group, including the Cameo coal zone. Sand and gravel deposits are found in limited amounts in Quaternary alluvial deposits along stream valleys.

The operator's proposed gas drilling program would target horizons within the Mesaverde Group. Specifically, the Williams Fork Formation at a depth between 6,700 and 7,600 feet; the Coal Ridge coal zone at a depth of 7,900 to 8,850 feet; and the Rollins Member of the Iles Formation at a depth of 8,650 to 9,600 feet.

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: The no action alternative would have no effect on geology and minerals.

Noise

Affected Environment: The proposed pad would be constructed approximately 2.5 miles southeast of the town of Battlement Mesa. Noise in this area is created by activities associated with the development of the South Parachute field. Drilling and completion activities are ongoing.

Noise levels reported for various elements of oil and gas development are between 50 decibels (dB(A)) for the operation of typical compressor station to approximately 68 dB(A) for truck traffic and crane operation (Table 5). These levels are a function of distance; the closer to the source, the greater the noise.

Table 5. 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)		

Proposed Action:

Environmental Consequences: Implementation of the proposed action would result in increased noise levels particularly during road and well pad construction, well drilling, and completion. Short-term (7 to 14 day) increases in noise levels would characterize road and well pad construction. Based on the Inverse Square Law of Noise Propagation (Harris 1991) and an average construction site noise level of 65 dB(A) at 500 feet, construction noise would equal approximately 59 dB(A) at 1,000 feet. At 1,000 feet, noise levels would approximately those of an active commercial area (EPA 1974).

Noise impacts from drilling and completion activities would last approximately 45 to 60 days at each well. Noise would occur continuously, 24 hours per day, during the drilling and completion period. Based on a measured noise level of 68 dB(A) at 500 feet, actions associated with drilling and completion would generate approximately 55 dB(A) at 1,000 feet. This level of noise approximates that associated with light industrial activities (EPA 1974).

These increased noise levels are not expected to have a substantial impact on residences of Battlement Mesa because the majority of the noise would be generated at a distance of approximately 2.5 miles. At this distance, activities associated with drilling and completion would not likely be greater than background noise levels.

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 5, 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.

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 phase, 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: The no action alternative would not result in an increase in current noise levels, because the development activities described under the proposed action would not occur.

Paleontology

Affected Environment: The surface formation is the Green River Formation which is known or likely to produce abundant scientifically important fossils vulnerable to surface-disturbing activities. At the present time, there are no identified paleontological sites located near the project area.

Proposed Action:

Environmental Consequences: The construction of the access road and well pad has the potential to adversely affect scientifically important fossils. Both surface and subsurface fossils could be damaged or destroyed. The greatest potential for impacts is associated with excavations of surface sediments and shallow bedrock.

The results of a review of USGS geologic map and topographic quadrangles and aerial photos indicate that the project area is heavily vegetated and covered with thick soil deposits. In addition, an examination of the BLM paleontology database and consultation with the BLM Regional Paleontologist indicate that there are no known fossil deposits in this area. It is unlikely that a field survey would provide additional information unless outcrops free of soil and vegetation could be identified. However, in the event that

paleontological resources are encountered, a standard paleontological condition of approval would be attached to the APDs. (Appendix A, Number 13).

No Action Alternative:

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

Range Management

Affected Environment: The proposed well pad and approximately 3,280 feet of the proposed access road and pipeline alignment would be located on private land lying outside the domain of BLM livestock management. However, approximately 2,000 feet of the access road and pipeline alignment would be located on public land in the Dry Creek – Pete and Bill Allotment # 08125. The table below summarizes the permitted grazing use on the allotment.

Table 6. Range Management Allotment				
<i>Allotment</i>	<i>Permittee</i>	<i>Livestock Kind & Number</i>	<i>Period of Use</i>	<i>Animal Unit Months (AUMs)</i>
Dry Creek Pete and Bill # 08125	Sharon Gardner	Cattle 36	05/01 – 06/15	54
		Cattle 36	10/01 – 10/31	1
		Cattle 10	10/01 – 10/31	10
		Cattle 10	10/01 – 10/31	10
	John & Phyllis Hyrup	Cattle 182	05/01 – 06/15	275
		Cattle 182	06/15 – 10/15	22

Proposed Action:

Environmental Consequences: Activities associated with the construction of the 2,000 feet of proposed road and pipeline would result in a minimal loss (< 1 Animal Unit Month [AUM]) of forage available to livestock. Rehabilitation of vegetation on the location would result in reestablishment of forage which usually takes about 3 years. It is not anticipated that the loss would require adjustment of the livestock stocking rate.

Livestock may also be minimally disturbed by the increase in human activity during pad and pipeline construction, drilling and completion activities, and maintenance of the gas facilities.

To minimize livestock trespass, EnCana would install a steel frame gate, or cattleguard with bypass gate, where the proposed access road to PC28 pad leaves the existing PA29 pad. To control livestock use between pastures, a standard 4-strand barb wire fence would be constructed along the east-side of the PA29 pad and connect to an existing pasture fence. (Appendix A, Surface COA Number 14a). Any range improvement projects disturbed or damaged during construction or drilling activities will be repaired or replaced by the operator (Appendix A, Surface COA Number 14b).

Fencing will be required to prevent grazing impacts after interim reclamation of the pad (Appendix A, Number 15d).

No Action Alternative:

Environmental Consequences: Under the no action alternative, no impacts to range resources would occur.

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

Affected Environment: The *Soil Survey of Rifle Area, Colorado: Parts of Garfield and Mesa Counties* (USDA 1985) indicates that the proposed well pad would be located on the soil map unit Villa Grove–Zoltay loams and that the proposed road and pipeline would be located on the soil map units (from west to east): Ildefonso Stony Loam, Torriorthents-Rock outcrop complex, and Villa Grove–Zoltay loams. The following is a brief description of these soil map units.

34 - Ildefonso Stony Loam - Deep, well-drained hilly to steep soils on mesa breaks, sides of valleys, and alluvial fans; formed in mixed alluvium derived primarily from basalt. Surface runoff is medium and erosion potential is severe.

67 - Torriorthents- Rock outcrop complex - Exposed sandstone and shale bedrock, loose stones, and shallow to deep stony loams and clay found on toe slopes and concave open areas on foothills and mountainsides. Runoff is very rapid and erosion potential is severe.

71 - Villa Grove-Zoltay loams - Deep, well-drained soils formed in mixed alluvium. Found on alluvial fans and mountainsides. Surface runoff is slow and erosion potential is slight to moderate.

Proposed Action:

Environmental Consequences: There would be some soil loss, loss of soil productivity, and an increase in sediment available for transport resulting from construction and maintenance activities. Due to the severe erosion potential of these soils and the proximity of proposed construction activities to ephemeral drainages, mitigation measures would be implemented to minimize potential negative impacts associated with soil loss and transport. (Appendix A, Numbers 7-12, 15).

No Action Alternative:

Environmental Consequences: The no action alternative would have no effect on soil resources in the area.

Analysis on the Public Land Health Standard for Upland Soils: The proposed action with associated mitigation would not likely prevent Standard 1 from being achieved.

The no action alternative would have no bearing on Standard 1, because the developments described in the proposed action would not take place.

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

Affected Environment: The vegetation on the proposed pad consists of a grassland-sagebrush community with mature pinyon-juniper woodlands along the proposed access road and pipeline. Parts of the project area were burned during the Battlement Creek Fire leaving portions of the proposed access road and

pipeline alignment with abundant juniper snags and leading to a cheatgrass infestation. Grasses and shrubs have re-established in the burned area and seeded species, including alfalfa (*Medicago sativa*), western wheat (*Pascopyrum smithii*) and smooth brome (*Bromus inermis*), are abundant.

Proposed Action:

Environmental Consequences: The well pad would result in an estimated 5.2 acres of disturbance, and a new access road and pipeline would result in additional disturbance of 9.1 acres, for a total of 14.3 acres of disturbance. Of this total, about 3.4 acres of public land would be impacted. With implementation of reclamation practices identified in Appendix A (Number 15), 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. Because of periodic workovers and the potential for additional well bores to be drilled from this pad, it is likely that vegetation would remain in an early seral stage for the life of the wells.

No Action Alternative:

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

Analysis on the Public Land Health Standard for Plant and Animal Communities (partial, see also **Wildlife, Aquatic and Wildlife, Terrestrial**): The poor condition of vegetative communities was the most widespread problem noted on this landscape. Sites not achieving the standard are in sagebrush and shadscale communities and pinyon-juniper woodlands. On the sagebrush sites, species, lifeform, and age class diversity is lacking. Few perennial grasses or forbs are found. Cheatgrass is frequently dominant on the sites. Several sagebrush stands have healthy vigorous sagebrush with good recruitment of sage seedlings, but sagebrush on most sites is moderately to heavily hedged and lacking in vigor and reproduction. A number of the sagebrush sites are being invaded by young juniper and pinyon pine trees. These sites varied in terms of the degree of encroachment, but eventually these sites will become dominated by pinyon-juniper unless something is done to set back succession and regenerate the sagebrush.

Most of the pinyon-juniper woodlands consist of mature Utah juniper with lesser amounts of pinyon pine. Most of these woodland sites have very few understory species present. Perennial grasses and forbs are generally minimal or absent, and where shrubs are present, often they are decadent or in poor vigor. Age class diversity is poor with most plants in the mature to overmature stage with little recruitment and establishment of younger age classes. Cheatgrass is abundant and occasionally dominant under the tree canopy (BLM 2000).

The proposed action would likely contribute, albeit in a minor way, to the further deterioration of vegetative communities and would move the area further from achieving conformance with the standard. 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 because no development activities would take place.

Visual Resources

Affected Environment: The proposed pad and short segment of access road and pipeline would lie within an area classified as VRM Class II, while the majority of the proposed road and pipeline would be located in an area classified as VRM Class III (BLM 1984).

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

VRM Class III areas are managed to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

While these classifications guide the management of visual resources on public lands, visual resource management objectives do not apply to non-BLM lands. VRM classes shown for non-public lands are an indication of the visual values for those lands, but those values can only be protected at the landowners discretion. Approximately 2,000 feet of the proposed access road and pipeline alignment would be located on public lands and would be subject to VRM Class III management objectives, while 3,280 feet of the proposed road and pipeline and the proposed well pad would be located on private lands and would not be subject to Federal visual resource management.

Proposed Action:

Environmental Consequences: The construction of the well pad, pipeline, and access road would create contrasts by removing pinyon-juniper, sagebrush, and shrub vegetation and exposing bare ground. Contrasts in color, form, line, and texture would be present within the existing landscape in the short term. Interim reclamation of the pad, access road, and pipeline with seeded shrub and grass species would reduce contrasts after two to three growing seasons. The access road and pipeline would meet VRM Class III objectives and not dominate the views from the valley floor with implementation of mitigation measures. The proposed action would not adversely affect any of key viewing areas or viewsheds. Measures that would reduce overall long-term visual impacts resulting from the addition of the new facilities are presented in Appendix A (Number 16).

No Action Alternative:

Environmental Consequences: The no action alternative would have no impact on visual resources because no new development activities would take place.

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

Affected Environment: The well pad, access road, and pipeline would be constructed near a series of ephemeral drainages that feed into the Colorado River approximately 2.5 miles to the northwest. There are no perennial streams in the project area and, therefore, fish populations are not present. However, all the ephemeral drainages flow into the Colorado River which supports federally listed and BLM sensitive fish species, as well as a variety of other fish and aquatic invertebrates.

Proposed Action:

Environmental Consequences: Surface disturbance associated with the implementation of the proposed action would increase erosion and sedimentation potential over a 14.3-acre area. Erosion and sedimentation has the potential to impact fish species in the Colorado River by silting in important spawning substrates and limited pool habitat, and by covering gravels and cobbles needed by aquatic insect larvae important as a food supply for the introduced trouts and some native fishes. Sediment can reduce water quality and limit fish productivity. However, sediment that ultimately reaches the Colorado

River should have minimal impacts to fisheries as sediment levels are projected to be well within the background levels for the Colorado River. To minimize impacts to downstream fishes and aquatic insects, the mitigation measures presented in Appendix A (Numbers 7-12, 15) are required.

No Action Alternative:

Environmental Consequences: The no action alternative would have no impact on aquatic wildlife because surface disturbance would not occur.

Analysis on the Public Land Health Standard 3 for Plant and Animal Communities (partial, see also **Vegetation and Wildlife, Terrestrial**): The proposed action in conjunction with a large amount of similar activity occurring within the larger watershed is likely trending the area away from meeting Standard 3 for sediment sensitive aquatic wildlife.

The no action alternative would have no bearing on Standard 3 because the development activities described in the proposed action would not take place.

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

Affected Environment: The proposed access road and pipeline would be located within mature pinyon-juniper habitat. Part of the area burned during the 1987 Battlement Mesa wildfire. The proposed pad would be within a grassland-sagebrush habitat with some mixed mountain shrub and oakbrush. The entire project area is located in mapped big game winter range that has been identified as high value habitat. The single Federal lease relevant to the proposed action does not contain stipulations associated with big game winter range habitat protection.

In addition to big game, a variety of small game and non-game wildlife, and birds are found in the vicinity of these proposed wells. The area is relatively undisturbed, and has a diverse plant assemblage that provides good foraging and security habitats.

With the well pad located on private land, BLM has no lease authority to enforce any big game winter protections (timing limitations). However, as stated in the Proposed Action, the right-of-way authorization, being a BLM discretionary action, allows the BLM to require a standard 5 month timing limitation to protect wintering habitat for big game.

Proposed Action:

Environmental Consequences: The proposed action would result in the loss of approximately 14.3 acres of high value habitat leading to further fragmentation and reduction on habitat connectivity and habitat patch size. Losses of forage and cover would result. Increased human use in the area, particularly during construction and drilling and completion activities, would likely displace some animals away from preferred habitats.

To minimize impacts to wintering big game, a big game winter habitat timing limitation (TL) would be stipulated on the BLM right-of-way to be granted as part of the proposed action. This TL would prohibit construction on BLM-administrated portions of the road and prohibit traffic associated with construction, drilling, and completion activities from December 1 to April 30 (Appendix A, Number 17) The TL would not apply to operations and maintenance activities. Under certain conditions, exceptions could be granted at the discretion of the Authorized Officer. Compliance with this timing limitation would reduce impacts to wintering big game by minimizing activity during the critical winter months. An additional

mitigation measure presented in Appendix A (Number 18) would further reduce impacts to terrestrial wildlife.

No Action Alternative:

Environmental Consequences: The no action alternative would have no impact on terrestrial wildlife because new development activity would not take place.

Analysis on the Public Land Health Standard for plant and animal communities (partial, see also **Vegetation and Wildlife, Aquatic**): The action would result in direct and indirect losses of habitat, further fragment remaining habitats, and result in increased human use in the area. Given the level of activity in the greater area, the proposed action would further trend the watershed away from meeting Standard 3 for some terrestrial wildlife species.

The no action alternative would have no bearing on Standard 3.

SUMMARY OF CUMULATIVE IMPACTS

The Draft and Final Roan Plateau Resource Management Plan Amendment & Environmental Impact Statements (BLM 2004, 2006) collectively analyzed six alternatives for oil and gas development in the Roan Plateau planning area. 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 Final Roan Plateau RMP Amendment and EIS presents a recent analysis of cumulative impacts in an area adjacent that of the proposed action, 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 and the Anvil Points mine. 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 2006: 4-1 to 4-129).

Although none of the cumulative impacts described in the Final Roan Plateau RMP Amendment and EIS 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 effects 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, has 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 impact. Additional ground disturbance would occur, additional habitat would be lost, noise and traffic would increase, and additional oil-and gas-related developments would be visible. Therefore, the impacts of the proposed action would move the cumulative impact incrementally closer to a threshold of significance for some resources.

However, the contribution to the accumulated effects would be minor because the scale of the proposed development is relatively small, multiple wells would be developed from a single pad, and mitigation measures represented by the conditions of approval for resource protection are mandated for implementation (Appendix A).

PERSONS AND AGENCIES CONSULTED:

RuthAnn Morss, Permit Agent, EnCana Oil & Gas (USA) Inc.
 Miracle Pfister, Permit Agent, EnCana Oil & Gas (USA) Inc.
 Joe Schmid, Construction Foreman, EnCana Oil & Gas (USA) Inc.
 Dayton Slauch, Surveyor, Tri-State Land Surveying , Inc.
 Brenda Linster Herndon, Permit Agent – Gathering, EnCana Oil & Gas (USA) Inc.
 Preston Nelson, Permit Coordinator – Gathering, EnCana Oil & Gas (USA) Inc.
 Pat Golden, Greystone/Arcadis, Inc. – Wildlife and Vegetation Resources
 Lisa Welch, Greystone/Arcadis, Inc. – Visual Resources
 Maxine Natchees, Chairman, Ute Tribe (Northern Ute Tribe)
 Clement Frost, Chairman, Southern Ute Indian Tribe
 Manuel Heart, Chairman, Ute Mountain Ute Tribe

INTERDISCIPLINARY REVIEW:

<i>Name</i>	<i>Title</i>	<i>Responsibility</i>
Jim Byers	Natural Resource Specialist	Soil, Air, Water, Geology, Vegetation, Special Status Species, Invasive Non-native species, Access and Transportation, Noise, Terrestrial and Aquatic wildlife, Special Status Species, Migratory Birds
Mark Ennes	Planning and Environmental Coordinator	NEPA Compliance
Cheryl Harrison	Archaeologist	Cultural Resources, Native American Religious Concerns
Kay Hopkins	Outdoor Recreation Planner	Visual Resources, ACECs, WSRs
Karen Conrath	Geologist	Paleontology
Isaac Pitman	Rangeland Specialist	Range management
Marty O'Mara	Petroleum Engineer	Downhole Conditions of Approval

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FONSI
CO-140-2007-110 EA

EnCana Oil & Gas (USA) Inc. Proposal to Drill 3 Wells (Gardner Federal 21-15, 28-2 & 28-2BB) on Proposed PC28 Well Pad and Grant a Road and Pipeline Right-of-Way on 2,000 feet of Public Land

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 Application for Permit to Drill to directionally drill three wells (Gardner Federal 21-15, 28-2 and 28-2BB) with the Conditions of Approval presented in Appendix A in order to 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 Appendix A 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

5/4/07

Date

SIGNATURE OF AUTHORIZED OFFICIAL:



Authorized Officer

5/4/07

Date

APPENDIX A

SURFACE USE CONDITIONS OF APPROVAL

SURFACE USE CONDITIONS OF APPROVAL

1. Administrative Notification. At least forty-eight (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. 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 cost.

2b. Colorado State Statutes CRS 24-80-1301 for Historic, Prehistoric, and Archaeological Resources, and for Unmarked Human Graves.

PART 13 -UNMARKED HUMAN GRAVES OFFICE OF ARCHAEOLOGY & HISTORIC PRESERVATION
24-80-1301. Definitions.

As used in this part 13, unless the context otherwise requires:

- (1) "Commission" means the commission of Indian affairs.
- (2) "Disturb" means to move, open, expose, dig up, disinter, excavate, remove, carry away, damage, injure, deface, desecrate, loot, vandalize, mutilate, or destroy.
- (3) "Human remains" means any part of the body of a deceased human being in any stage of decomposition.
- (4) "Land" means all lands, including submerged lands, located within the state of Colorado which are owned by the state or its political subdivisions, agencies, or instrumentality's or by any private person.
- (5) "Person" means an individual, limited liability company, corporation, unincorporated association, partnership, proprietorship, or governmental entity.
- (6) "Unmarked human burial" means any interment of human remains for which there exists no grave marker or any other historical documentation providing information as to the identity of the deceased.

24-80-1302. Discovery of human remains.

- (1) Except as provided in section 24-80-1303 with regard to anthropological investigations, any person who discovers on any land suspected human skeletal remains or who knowingly disturbs such remains shall immediately notify the coroner of the county wherein the remains are located and the sheriff, police chief, or land managing agency official.
- (2) The coroner shall conduct an onsite inquiry within 48 hours of such notification to attempt to determine whether such skeletal remains are human remains and to determine their forensic value. If the coroner is unable to make such determinations, the police chief, the sheriff, the coroner, or the land managing agency official shall request the forensic anthropologist of the Colorado bureau of investigation to assist in making such determinations. If it is confirmed that the remains are human remains but of no forensic value, the coroner shall notify the state archaeologist of the discovery. The state archaeologist shall recommend security measures for the site.
- (3) Prior to further disturbance, the state archaeologist shall cause the human remains to be examined by a qualified archaeologist to determine whether the remains are more than one hundred years old and to evaluate the integrity of their archaeological context. Complete documentation of the archaeological context of the human remains shall be accomplished in a timely manner.
- (4) (a) If the on-site inquiry discloses that the human remains are native American, the state archaeologist shall notify the commission.

(b) The remains shall be disinterred unless the landowner, the state archaeologist, and the chairman of the commission or his designee unanimously agree to leave the remains in situ.

(c) Disinterment shall be conducted carefully, respectfully, and in accordance with proper archaeological methods and by an archaeologist who holds a permit issued under sections 24-80-405 and 24-80-406. In the event the remains are left in situ, they shall be covered over.

(d) Without the landowner's express consent for an extension of time, disinterment shall be accomplished no later than ten consecutive days after the state archaeologist has received notification from the coroner pursuant to subsection (2) of this section.

(e) The archaeologist who conducts the disinterment will assume temporary custody of the human remains, for a period not to exceed one year from the date of disinterment, for the purpose of study and analysis. In the event that a period in excess of one year is required to complete such study and analysis, the commission shall hold a hearing and may, based upon its findings, grant an extension. During the period that the human remains are in the temporary custody of the archaeologist who conducted the disinterment, an archaeological analysis and report shall be prepared. At the same time, a physical anthropological study shall be conducted to include, but not be limited to, osteometric measurement, pathological analysis, and age, sex, and cause of death determinations. The cost of the disinterment, archaeological analysis, and physical anthropological study shall be borne by the state archaeologist except when the human remains are recovered from private lands. In the latter case, if no party can be identified who will bear the cost of such scientific study; the state archaeologist shall bear such costs.

(f) Upon completion of the studies pursuant to paragraph (e) of this subsection (4), the state archaeologist shall consult with the commission regarding reinterment.

(5) Those remains which are verifiably nonnative American and are otherwise unclaimed will be delivered to the county coroner for further conveyance to the Colorado state anatomical board.

24-80-1303. Discovery of human remains during an anthropological investigation.

(1) Prior to the commencement of an anthropological investigation in which it is probable that skeletal remains will be discovered, the anthropologists conducting such an investigation shall apply to the state archaeologist for an excavation permit issued under the authority of section 24-80-405

(1)(g). Upon receipt of said permit by a qualified applicant, he shall notify the coroner and sheriff of the county in which the investigation shall be conducted.

(2) When skeletal remains are discovered during such an investigation, the anthropologists shall determine whether such skeletal remains are human remains, and, if such remains are determined to be human remains, the anthropologists shall determine, whenever possible, the age and cultural affiliation of the individual. Based on such determinations, the anthropologists shall proceed as follows:

(a) If it is determined that the human remains are of an individual who has been dead less than one hundred years, the anthropologists shall notify the coroner of the discovery and shall offer an opinion as to the forensic significance of the human remains. The coroner shall respond to such notification within 24 hours, during which time all activity which could disturb such human

remains shall cease. If, on the basis of the anthropologist's opinion or on an independent onsite inquiry, the coroner determines that the human remains are of no forensic significance, the anthropologists shall notify either the state archaeologist, if the human remains are those of a native American, or the Colorado state anatomical board, if the human remains are those of a human being who was not a native American.

(b) If it is determined that the skeletal remains are human remains but of an individual who has been dead for more than one hundred years, notwithstanding the provisions of section 30-10-606 (1.2),

C.R.S., the anthropologists need not notify the coroner but shall notify either the state archaeologist, if the human remains are those of a Native American, or the Colorado state anatomical board, if the remains are of a nonnative American.

(3) Upon notification by the anthropologists of the discovery of the human remains of a native American, the state archaeologist shall notify the commission and shall thereafter proceed in accordance with the provisions of section 24-80-1302 (4).

24-80-1305. Violation and penalty

(1) Any person who knowingly disturbs an unmarked human burial in violation of this part 13 commits a class 1 misdemeanor and shall be punished as provided in section 18-1-106 C.R.S.

(2) Any person who has knowledge that an unmarked human burial is being unlawfully disturbed and fails to notify the local law enforcement agency with jurisdiction in the area where the unmarked human burial is located commits a class 2 misdemeanor and shall be punished as provided in section 18-1-106,C.R.S.

3. Weed Control. The operator shall regularly monitor and promptly control noxious weeds or other undesirable plants 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 BLM prior to the use of herbicides.

4. Migratory Birds. It will be the responsibility of the operator to comply with the Migratory Bird Treaty Act with respect to "take" of migratory bird species. The term "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 is requested to 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 will be applied within 24 hours after completion activities have begun. All lethal and non-lethal events that involve migratory birds will be reported to the Natural Resource Specialist immediately upon their discovery.

5. Raptors. To protect nesting raptors, raptor surveys shall be conducted prior to any oil and gas development activities. If raptor surveys have previously been conducted for a project, new raptor surveys shall be required if (a) a period of 2 years or greater has elapsed between initial surveys and the commencement of new development activities, or (b) changes to the location of planned infrastructure were made after initial surveys, and the new location occurs outside the original survey area. All

potential nesting habitat within 0.25 mile of these developments shall be surveyed and the results documented and submitted to the BLM Glenwood Springs Energy Office wildlife biologist. If an active raptor nest is located within 0.25 mile of the proposed activity, a 60-day timing limitation during the critical nesting period and/or relocation of the well pad/road/pipeline up to 200 meters may be required. In the event of an active raptor nest within 0.25 mile of developments, the operator is advised to ensure compliance with the Migratory Bird Treaty Act by contacting Creed Clayton, U.S. Fish and Wildlife Service (USFWS), Glenwood Springs Energy Office at 970-947-5219 or at john_c_clayton@blm.gov and Jeff Cook, BLM, Glenwood Springs Energy Office at 970-947-5231 or at jeffrey_cook@blm.gov.

6. Native American. 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)).

7. Pad Construction Measures. The following changes will be made to Cut/Fill sheet found in the Surface Use Plan for PC28 Pad:

Rock placement, cleared trees and brush, and/or straw wattles could also be installed along the fill slopes and excess material piles to stabilize slope, minimize sedimentation into the existing draw, and reduce soil rilling. Topsoil stockpile will be seeded within 48 hours of finishing pad construction with specified seed mix.

8. Material Sidcasting Limits. No sidcasting of material during road construction will be allowed on any sideslopes exceeding 35%.

9. 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.

10. Wetlands and Waters of the U.S. The operator shall obtain appropriate permits from the U.S. Army Corps of Engineers (contact Sue Nall at 970-243-1199 x16 or susan.nall@usace.army.mil) prior to discharging fill material into waters of the U.S. in accordance with Section 404 of the Clean Water Act. Waters of the U.S. are defined in 33 CFR Section 328.3 and may include perennial, intermittent, and ephemeral streams. Temporary or permanent impacts to waters of the U.S. may require mitigation in addition to measures required by BLM.

11. Culverts. Culverts at drainage crossings shall be installed during no-flow or low-flow conditions and shall be designed and installed to pass a 25-year or greater storm event. On perennial streams, culverts shall be designed to allow for passage of aquatic biota. The minimum culvert diameter in any installation, drainage crossing or road drainage, is 18 inches. For crossings of waters of the U.S., the U.S. Army Corps of Engineers may apply additional or more stringent requirements on culvert design (contact Sue Nall at 970-243-1199 x16 or susan.nall@usace.army.mil).

12. Road Maintenance. The operator shall be responsible for providing timely year-round road maintenance and cleanup on the access road. 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.

13. Paleontological Resource Education/Discovery. All persons associated with operations under this authorization must 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 proponent 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 authorized officer.

As feasible, the proponent 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 proponent shall work around or set the discovery aside in a safe place to be accessed by the BLM-permitted paleontologist.

14. Range Management.

a. The operator shall install a steel frame gate, or cattleguard with bypass gate, where the new access road to PC28 pad leaves the PA29 pad. Furthermore, to control livestock use between existing range allotment pastures, a standard 4-strand barb wire fence shall be constructed along the east side of the PA29 pad and connect with the nearby existing pasture fence.

b. Range improvements (fences, gates, reservoirs, pipelines, etc.) shall be avoided during development of natural gas resources to the maximum extent possible. If range improvements are damaged during exploration and development, the operator shall be responsible for repairing or replacing the damaged range improvements. If a new or improved access road bisects an existing livestock fence, steel frame gate(s) or a cattleguard with associated bypass gate shall be installed across the roadway to control grazing livestock.

15. Reclamation. Reclamation 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 are recommended during interim reclamation of disturbed surfaces associated with well pads, access roads, and pipelines. These measures, except seedbed preparation, should also be applied to temporary reclamation of topsoil storage piles and surfaces that are subject to interim reclamation but not scheduled to undergo interim reclamation for more than 1 year.

a. Seedbed Preparation. For interim reclamation, all slopes should be reshaped prior to seedbed preparation. Initial seedbed preparation should 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 should be scarified and left with a rough surface. No depressions should be left that would trap water and form ponds. Final seedbed preparation should 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.

- b. Seed Mixes. BLM recommends that selection of seed to be used in temporary or interim reclamation comply with the menu-based seed mixes in the letter provided to oil and gas operators dated April 16, 2007. However, for private surfaces, the landowner would have ultimate authority over the seed mix to be used in reclamation. The seed should be certified free of noxious weeds.
- c. Seeding Procedures. Seeding should be conducted no more than 24 hours following completion of final seedbed preparation. Revegetating the disturbed area promptly will help prevent erosion and invasion by weeds and provide food and cover for wildlife. Where practicable, seed should 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 should be conducted in two separate applications to ensure adequate contact of seeds with the soil.

If interim revegetation is unsuccessful, the operator should 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 should be applied within 24 hours following completion of seeding. In areas of interim reclamation that used drill-seeding or broadcast-seeding/raking, mulch should 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 should 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 should be used on cut-and-fill slopes and along drainages to protect against soil erosion. Additional BMPs should be employed as necessary to reduce erosion and transport of sediment to streams.
- f. Site Protection. The pad should be fenced to exclude livestock grazing for the first two growing seasons or until seeded species are firmly established, whichever comes later. Seeded species are considered firmly established when at least 50% of the new plants are producing seed.
- g. Monitoring. The operator should conduct annual monitoring surveys of reclaimed areas. If one or more of the reclamation objectives appears unlikely to be achieved, the operator should implement corrective actions.

16. Facility Placement and Color. The paint color to be used on all surface facilities including the metal containment rings surrounding the tank batteries is Shale Green (5Y 4/2). Storage tanks shall be staged between the wellhead and Corner 8 and no more than 100 feet from wellhead. The Production pack shall be set between the wellhead and Corner 1 and no more than 100 feet from wellhead. Tank placement shall be conducted in manner so that tanks are not placed directly against the cut slope – i.e., suitable

space between the cut slope and tanks shall be provided to maximize the reclaimed area. These measures are subject to differing requirements of the private surface owner.

17. Big Game Winter Timing Limitation. To minimize impacts to wintering big game, a big game winter habitat Timing Limitation (TL) from December 1 through April 30 would be implemented under the BLM right-of-way authorization. An exception for the last 60 days of the timing limitation due to mild winter condition would be available. BLM recommends that remote monitoring be conducted during the winter months to minimize site visits to pad locations and reduce traffic impacts to wintering big game wildlife. In addition, scheduled winter visits (those other than for emergency purposes) should be scheduled between 10 a.m. and 3 p.m. to further minimize disturbance to wintering big game wildlife.

18. Ips Beetle. To avoid pinyon tree mortality caused by infestations of the *Ips* beetle, any pinyon trees disturbed during road, pad, or pipeline construction work shall be chipped after being severed from the stump or grubbed from the ground, buried in the toe of fill slopes (if feasible) or cut and removed from the site within 24 hours to a location approved by the Colorado State Forest Service.

DOWNHOLE CONDITIONS OF APPROVAL

Company/Operator: EnCana Oil & Gas (USA), Inc.

Surface Location: NENW Sec. 28, T.7S., R.95W., 6th P.M. (PC28 Pad)

<u>Name</u>	<u>Number</u>	<u>Bottomhole Location</u>	<u>Lease</u>
Gardner Federal	21-15	SWSE Sec. 21, T.7S., R.95.W	COC01523

Conditions of Approval identified in the EnCana Oil & Gas (USA) Inc. South Parachute GAP shall apply.

Please contact Steve Ficklin (970-947-5213) or Jennifer Gallegos (970-947-5220) of the Glenwood Springs Energy office at least 24 hours:

- 1) pre- and post-spud
- 2) prior to running the surface and production casing
- 3) conducting the BOP test