

**U.S. Department of the Interior
Bureau of Land Management
Glenwood Springs Field Office
2420 S. Grand Ave, Suite 101
Glenwood Springs, CO 81601**

ENVIRONMENTAL ASSESSMENT

NUMBER: CO-140-2006-055 EA

CASEFILE NUMBER: Lease # COC-52889, COC-56298

PROJECT NAME: Proposal to Drill 3 Directional Wells from proposed fee/fee H23W Well Pad and proposed fee/fee F24W Well Pad in West Mamm Creek drainage (Benefiting program, Fluid Minerals 1310)

LEGAL DESCRIPTION:

Couey Federal 23-10 (H23W Pad) Surface location: T7S, R93W, Sec 23 SE¹/₄NE¹/₄, 6th P.M.
Bottom Hole: T7S, R93W, Sec 23, NW¹/₄SE¹/₄ (3495' FNL, 105' FEL)
Surface Owner: Marvelle and Kelly Couey
Federal Lease: COC-52889

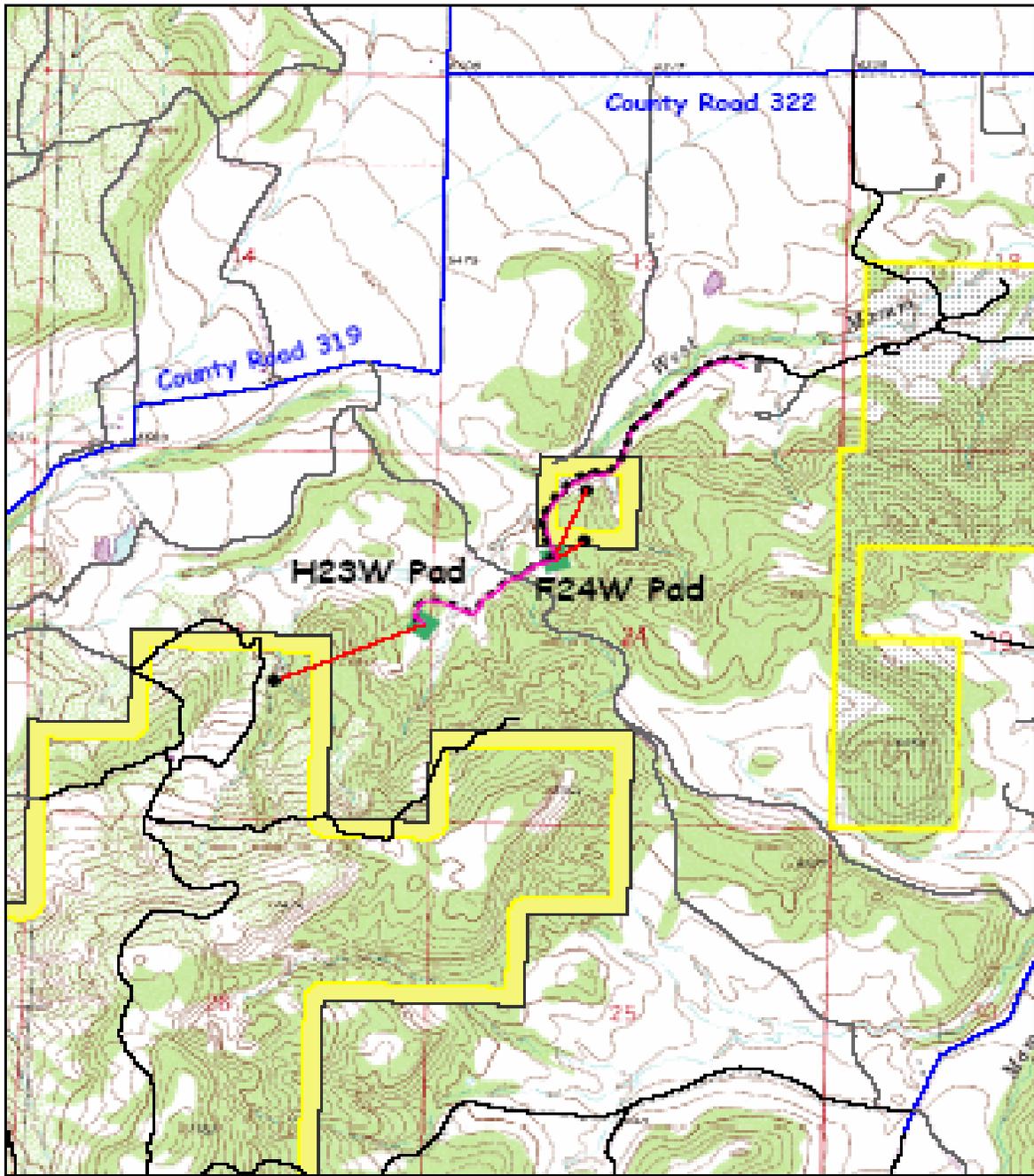
Couey Federal 24-3 (F24W Pad) Surface location: T7S, R93W, Sec 24 SE¹/₄NW¹/₄, 6th P.M.
Bottom Hole: T7S, R93W, Sec 24, NE¹/₄NW¹/₄ (570' FNL, 1920' FWL)
Surface Owner: Marvelle and Kelly Couey
Federal Lease: COC-56298

Couey Federal 24-3D (F24W Pad) Surface location: T7S, R93W, Sec 24 SE¹/₄NW¹/₄, 6th P.M.
Bottom Hole: T7S, R93W, Sec 24, NE¹/₄NW¹/₄ (1250' FNL, 1970' FWL)
Surface Owner: Marvelle and Kelly Couey
Federal Lease: COC-56298

APPLICANT: EnCana Oil & Gas (USA) Inc.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Proposed Action: The proposed action is to directionally drill and develop 1 federal natural gas well from the proposed fee/fee well pad (H23W) and 2 federal natural gas wells from the proposed fee/fee well pad (F24W) listed above and shown on Project Map. Construction of both pads would disturb 13.7 acres. The pad disturbance on Marvelle and Kelly Couey's private land would involve 12.9 acres with 7.4 acres attributed to F24W pad and 5.5 acres related to the H23W pad. Approximately 0.8 acres of the proposed 8.2 acres surface disturbance related to construction of F24W pad will occur on public land with placement of topsoil piles. The planned total surface disturbance for road and pipeline serving these 2 well pads (length of 6755 feet and width of 85 feet) would be 13.2 acres. Approximately 2000 feet of the improved access road and new pipeline (maximum 8" diameter) will occur across an isolated BLM 40-acre parcel, resulting in 3.7 acres of surface disturbance on public



**EnCana's Proposed H23W and F24W pads w/
Federal Directional Wells**

T7S R93W Sec 23, SE $\frac{1}{4}$ NE $\frac{1}{4}$ 6th P.M. (H23W pad)

T7S R93W Sec 24, SE $\frac{1}{4}$ NW $\frac{1}{4}$ 6th P.M. (F24W pad)

Garfield County, CO

Surface Owners: M. & K. Couey, BLM



Scale 1: 24,000
2/1/08

Proposed Pipeline shown in solid purple
Proposed Road shown in dash black
Proposed Pads shown in green block

land. Total proposed surface disturbance on public lands for the well pads, roads and pipeline would be 4.5 acres.

The pads lie approximately 8 miles south of Garfield County Airport. The proposed road and pipeline serving the pads would be constructed from existing systems in the Mamm Creek field with County Roads 319 and 322 serving the area. No public access is available to the sites as the area is comprised of large ranch holdings with exception of the isolated 40-acre BLM parcel. Road maintenance will be the operator's responsibility. The proposed surface disturbance on isolated BLM parcel would be hidden from views within the surrounding valley floor. Portions of the excavated material piles and cut slopes planned for the H23W pad would be background visible from the valley.

Road construction would be conducted in manner that adheres to fragile soil lease stipulations identified in Lease #COC56298. Furthermore, no sidecasting of excavated material will be allowed in West Mamm Creek as the existing 2 track route is improved into serviceable field development road. The proposed pipeline disturbance along the road alignment parallel to West Mamm Creek would also be limited to minimum width (45 feet) while maintaining safe work environment. Grades on proposed road would not exceed 10%, with average grade of road planned for less than 6%. Culverts, permitted with Army Corps of Engineers, would be installed in natural side draws that road would bisect.

These wells qualify as GAP waivers as defined in Appendix B of the 1999 SEIS, ROD since the wells would be drilled on existing pad served by existing road and pipeline.

The proposed action includes drilling and completion operations, installation of production facilities (pipeline, separator/dehydrator, water tank, etc.), 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 will be implemented consistent with the oil and gas lease (listed above), federal regulations (43 CFR 3100), the Record of Decision and Resource Management Plan Amendment March 1999, and the operational measures included in the APD as well as the Conditions of Approval (COA) attached to the APD.

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. The no action constitutes denial of the proposed action and could be used to prevent unnecessary and undue degradation. Absent a non-discretionary statutory prohibition against drilling, BLM cannot deny the right to drill and develop the leasehold. Only Congress can completely prohibit development activities (Western Colorado Congress, 130 IBLA 244, 248 (1994), citing *Union Oil Co. of California v. Morton*, 512 F.2d 743, 750-51 (9th Cir. 1975). For this reason, the No Action alternative has been considered but eliminated.

Description of Lease Stipulations that apply to Proposed Action and/or Alternative:

F24 Pad ; Lease #COC56298:

CSU for protection of scenic values in Class II VRM area

CSU for protection of fragile soils

TL to protect big game winter range from 12/1 - 4/30 with exception last 60 days for mild winter conditions

LN for inventory of fossil resources in Class I and II paleontological areas

With the federal surface location for the Couey Federal 23-10 being on proposed private surface H23W pad, the lease stipulations for Lease#COC52889 are not applicable. All surface use, including drilling and completion work, planned for the H23W pad (including fee wells) would be subject to winter timing limitation shown on Lease #COC56298 above attributed to road use.

NEED FOR THE ACTION: The purpose and need is to authorize the Application for Permit to Drill (APD) to satisfy federal lease obligations that will in turn provide natural gas for commercial marketing to the public.

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.

Date Approved: **Amended in November 1991 - Oil and Gas Leasing and Development - Final Supplemental Environmental Impact Statement;** amended Nov. 1996 - Colorado Standards and Guidelines; amended in August 1997 - Castle Peak Travel Management Plan; **amended in March 1999 - Oil and Gas Leasing & Development Final Supplemental Environmental Impact Statement;** amended in November 1999 - Red Hill Plan Amendment; and amended in September 2002 – Fire Management Plan for Wildland Fire Management and Prescriptive Vegetation Treatment Guidance.

Decision Number/Page: The proposed action is located on leases in area designated Open for oil and gas leasing in 1984 in the Glenwood Springs Resource Management Plan (page 14 and map 4).

Decision Language: The FSEIS described the environmental effects, including the cumulative effects, of oil and gas development, but did not authorize the construction of any individual well locations. This EA is more site-specific than the FSEIS and includes the results of the on-the-ground inventories for cultural resources and special status plant and animal species, if appropriate. This EA tiers to both the DSEIS and FSEIS and the information in the FSEIS is incorporated by reference. The EA will focus on specific issues and will not deal with the larger regional issues addressed in the FSEIS. The proposed action has been reviewed for and is in compliance with the FSEIS (43 CFR 1610.5, BLM 1617.3) - Page or Decision Number: Pages 1-5, Record of Decision dated March 24, 1999.

Standards for Public Land Health: In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. The Glenwood Springs Field Office is in the ongoing process of completing Land Health Assessments on a landscape basis. At this time the landscape addressed in this EA has not had a formal Land Health Assessment completed. As such, no formal determination on conformance with the Standards will be made until a formal Land Health Assessment and Determination Document is completed. The tentative schedule for Land Health Assessment on this landscape is 2010. At the time this landscape is scheduled, a Land Health Assessment will be completed addressing all of the Land Health Standards. Based on the findings of these assessments, the authorized officer may take appropriate action to achieve conformance with the standards or implement further mitigating measures on future actions to maintain or prevent a further decline in 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. Because a standard exists for these five categories, the impact analysis must address whether the proposed action or any alternatives being analyzed would result in impacts that would maintain, improve, or deteriorate land health conditions for that specific parameter. These analyses are located in specific elements listed below:

AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES / MITIGATION MEASURES:

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. For further details, refer to the Draft Roan Plateau RMPA EIS, page 3_20-22.

Environmental Consequences/Mitigation: The Draft Roan Plateau EIS, pages 4_31-48, describes potential effects from oil and gas development. 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, and 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 Draft EIS. Findings indicate that no adverse long term effects would be realized under the Draft Roan Plateau EIS plan. It is anticipated that the proposed action in this document would not likely produce adverse effects to air quality when compared to the Roan Plateau plan.

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 Draft Roan Plateau EIS mentioned above. However, it is anticipated that road and pad construction activities along with production activities associated with the proposed activities would likely produce high levels of dust in dry conditions without dust abatement. To mitigate dust generated by these activities, the operator will 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.

AREAS of CRITICAL ENVIRONMENTAL CONCERN, WILD AND SCENIC RIVERS and WILDERNESS

Affected Environment: There are no Wilderness Areas or Wilderness Study Areas, citizen proposed wilderness areas, ACECs, or Wild and Scenic Rivers within the proposed project area.

CULTURAL RESOURCES

Affected Environment: Two Class III inventories (GSFO#'s 5406-10 and 5406-12) have been conducted. One for each well, access road and pipeline. No historic properties were identified eligible for listing on the National Register of Historic Places. As no historic properties are within the Area of Potential Effect and none will be impacted by construction, formal consultation with the Colorado State Historic Preservation Office (SHPO) was not initiated and a determination of **“No Historic Properties Affected”** was made based upon the results of the inventories in accordance with the 2001 revised regulations [36CFR 800.4(d)(1)] for Section 106 of the National Historic Preservation Act (16U.S.C 470f), the BLM/SHPO Programmatic Agreement (1998) and Colorado Protocol (1997) for these proposed actions.

Environmental Consequences/Mitigation: No historic properties will be affected. However, 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, from illegal collection and excavation to vandalism.

The importance of the Education/Discovery Stipulation needs to be stressed to EnCana and their subcontractors informing them of their responsibilities to protect and report any cultural resources encountered on public land during operations under this permit.

Mitigation:

A standard Education/Discovery Condition of Approval for Cultural Resource protection will be attached to the APDs.

ENVIRONMENTAL JUSTICE

Affected Environment: Review of 2001 data from US Census Bureau indicates the median annual income of Garfield County averages \$43,560 and is neither an impoverished or wealthy county. Median annual income of Eagle County averages \$51,578 and is not impoverished but is considered a wealthy county. U.S. Census Bureau data from July, 2002 shows the minority population of Garfield and Eagle County comprises less than 3 % of the total population¹.

| Garfield County | | Eagle County | |
|-------------------------|-------------------------|-------------------------|-------------------------|
| Median Household Income | | Median Household Income | |
| Estimate | 90% Confidence Interval | Estimate | 90% Confidence Interval |
| \$43,560 | \$40,491 to \$46,613 | \$51,578 | \$47,958 to \$55,177 |

Environmental Consequences/Mitigation: The proposed action and alternatives are not expected to create a disproportionately high and adverse human health impact or environmental effect on minority or low-income populations within the area.

FARMLANDS, PRIME AND UNIQUE

Affected Environment: The proposed action does not involve any prime or unique farmlands.

FLOODPLAINS, WETLANDS, RIPARIAN ZONES (includes a analysis on Standard 2)

Affected Environment: There would be no impacts to floodplains, wetlands, or riparian zones associated with the proposed activities. Major drainages crossed by the proposed access road are incised, ephemeral, and do not contain riparian vegetation. The existing two-track road does, however, parallel a portion of West Mamm Creek to the northeast of the proposed well pads. In this vicinity, West Mamm Creek is perennial and contains a small riparian corridor consisting of some willows and cottonwoods. To prevent impacts to riparian vegetation, no sidecasting into the drainage would occur.

Analysis on the Public Land Health Standard for riparian systems: The proposed action with associated mitigation would not likely prevent standard 2 for riparian systems from being met.

INVASIVE, NON-NATIVE SPECIES

¹ Table CO-EST2002-ASRO-02-08-County Population Estimates by Race Alone and Hispanic or Latino Origin: July 1, 2002
 Source: Population Division, U.S. Census Bureau
 Release Date: September 18, 2003

Affected Environment: The vegetation on proposed pad H23W consists of Wyoming big sagebrush and greasewood on the eastern portion of the pad, and pinyon juniper woodland with birchleaf mahogany and snowberry on the western area. The vegetation on proposed pad F24W consists of a Basin big sagebrush community. Cheat grass is present at both areas, but is not a dominant component. Along the access road in to the pads, on the 40-acre BLM parcel, is an infestation of Russian knapweed. EnCana has treated this site and will continue to treat this infestation until it is eradicated.

Environmental Consequences: Surface-disturbing activities provide a niche for the invasion and establishment of noxious and non-native species, particularly when these species are already present in the surrounding area. Because cheat grass and Russian knapweed are already present in the area, the potential for invasion following construction is extremely high.

Mitigations: In order to minimize the high potential for invasion of cheat grass, Russian knapweed and other weeds, these steps will be taken:

- All disturbed areas not needed for immediate access to the wells will be seeded with a mixture of native shrubs and grasses, and native or desirable non-native forbs. The seed mix designed to reclaim the disturbed areas can be found in the Vegetation section. The project proponent will adhere to the specified seed mix and will continue with reclamation activities, including additional reseeding if necessary, until interim reclamation objectives are achieved.
- The seed will be certified free of noxious weeds. All seed to be applied to public land must have a valid seed test, within one year of the acceptance date, from a seed analysis lab by a registered seed analyst (Association of Official Seed Analysts). The seed lab shall show no more than 0.5 percent by weight of “other weed” seeds; and the seed lot shall contain no “noxious, prohibited, or restricted weed” seeds according to the All States Noxious Test. Seed may contain up to 2.0 percent of “other crop” seed by weight which includes the seed of other agronomic crops and native plants; however, a lower percent of other crop seed is recommended. Seed tags shall be supplied to the Glenwood Springs BLM Energy Office Ecologist at least 14 days prior to the date of proposed seeding for acceptance. Seed which does not meet the above criteria shall not be applied to public lands.
- A Standard Condition of Approval is attached requiring the project proponent to monitor for the presence of any Colorado-listed noxious weeds at least once or twice annually during the growing season until final reclamation of the pad is complete. The project proponent will promptly treat and control any noxious weeds. A Pesticide Use Proposal must be approved by BLM prior to the use of herbicides.

Because cheat grass is already abundant in the general vicinity, it may not be feasible to completely eliminate it from the project area. Therefore, if the area adjacent to the project site contains less than a 50% cover of cheat grass, interim reclamation will be considered acceptable when the cover of cheat grass on the project site does not exceed 5%. If the area adjacent to the project site contains more than a 50% cover of cheat grass, interim reclamation will be considered acceptable when the cover of cheat grass on the project site does not exceed 50%.

MIGRATORY BIRDS

Affected Environment: The project area is comprised mainly of pinyon-juniper woodlands surrounded by sagebrush parks. Given this mix of vegetation, the project area provides both foraging and nesting habitat for a variety of migratory birds. A few species found on the U.S. Fish & Wildlife Service’s Birds of Conservation Concern list may be present. Within the sagebrush vegetation, the sage sparrow may be found. Within the juniper woodlands, the black-throated gray warbler, gray vireo, and pinyon jay may be

found. The sage sparrow is a ground nester that requires dense stands of intact sagebrush or mixed sagebrush & mountain shrub vegetation in which to nest. The remaining 3 species are all tree nesters that prefer pinyon-juniper woodlands.

No raptor nests are known to occur in the immediate vicinity of the existing well pads, roads, or pipelines. It is likely that a variety of raptors forage in the general project area.

Environmental Consequences/Mitigation: The proposal for 2 new pads, access road and pipeline will involve new disturbance totaling 26.9 acres with about 4.5 acres of that disturbance occurring on public land adversely affecting foraging habitat. If ground disturbance is conducted during the spring nesting season it is possible that destruction of nests and/or eggs could occur. The action will result in the direct loss of 26.9 acres of nesting, breeding, and foraging habitat, although portions may be reclaimed with grasses and forbs. The action will further fragment important bird habitats and will reduce habitat connectivity and habitat patch size. It is likely that during any construction, drilling and completion activities, individual birds may be displaced to adjacent habitats due to noise and commotion associated with construction and human presence. Limited public access into the pad location will reduce some indirect impacts. 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 management measures must be conservative and relegated to preventing bird contact with produced water and drilling and completion fluids that may pose a problem (e.g., acute or chronic toxicity, compromised insulation). Raptors should be minimally affected as no nests will be disturbed and upland foraging habitat is plentiful in the area.

Mitigation:

It will be the responsibility of the operator to comply with the Migratory Bird Treaty Act with respect to “take” of migratory bird species. As such, 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.

NATIVE AMERICAN RELIGIOUS CONCERNS

Affected Environment: At present, no Native American concerns are known by the GSFO for the proposed actions and none were identified during the surveys. The Ute Tribes currently claim the area as part of their ancestral homeland. If new data is disclosed, new terms and conditions may have to be negotiated to accommodate their concerns.

Environmental Consequences/Mitigation: Indirect impacts from increased access and personnel could result in a range of impacts to unknown cultural resources from illegal collection to vandalism. The importance of the Education/Discovery Stipulation needs to be stressed to EnCana and their subcontractors. See Cultural Section.

THREATENED, ENDANGERED, AND SENSITIVE SPECIES (includes analysis on Standard 4)

Affected Environment: According to the latest species list from the U. S. Fish and Wildlife Service, the following federally listed and candidate species may reside or be impacted by actions occurring in Garfield County: bald eagle, Canada lynx, Mexican spotted owl, black-footed ferret, Uinta Basin hookless cactus, Parachute beardtongue, DeBeque phacelia, yellow-billed cuckoo, razorback sucker, Colorado pikeminnow, bonytail chub, and humpback chub.

Specific to the project location, no federal or state listed species or federal candidate or proposed species or their habitat occur within the project area. Only those BLM sensitive species with habitat or the potential to occur within the project area will be discussed.

The BLM Sensitive plant species, *Penstemon harringtonii*, is generally found in sagebrush and sagebrush/mixed mountain shrub habitats between 6,400 and 9,200 feet in elevation. Although the proposed project area is located between 6,450 to 6,580 feet, the soil type of this area is different from any known locations of *Penstemon harringtonii*. Therefore, the project area is not considered potential habitat for *P. harringtonii*.

Environmental Consequences/Mitigation: Due to a lack of habitat, the proposed action should have “No Effect” to any listed species and no impact to any other special status species.

Analysis on the Public Land Health Standard for Threatened & Endangered species: Since there is no suitable habitat for any special status species in the project area and no known occurrences in the vicinity, the proposed action will have no effect on special status species. With implementation of the reclamation measures proposed in the COA’s, the proposed action should not result in a failure of the area to achieve Standard 4 for special status, threatened and endangered species.

WASTES, HAZARDOUS OR SOLID

Affected Environment: All wastes will be managed in accordance with the applicable Oil and Gas regulations and On-Shore Orders.

WATER QUALITY, SURFACE AND GROUND (includes analysis on Standard 5)

Affected Environment:

Surface Water

Proposed activities occur within the 9,762 acre West Mamm Creek sub-watershed and include upgrading the existing two-track road, new road and pipeline construction, and the construction of two well pads. In addition, a portion of the ephemeral drainage along the western edge of the proposed H23W pad would be rerouted to accommodate the dimensions of the pad. The existing two-track road parallels the incised perennial West Mamm Creek and crosses several small ephemeral drainages to access the proposed F24W pad. Access to the proposed H23W pad would cross four large ephemeral drainages, two of which are deeply incised. Both proposed well pads are bordered on the east and west by ephemeral drainages. All drainages encountered within the proposed action area are tributary to West Mamm Creek which joins East Mamm Creek downstream to form Mamm Creek, a tributary to the Colorado River just east of the City of Rifle.

Drainages encountered in the proposed action area are characterized as incised, having low width to depth ratios, and having moderately steep channel gradients. Channels in this area are dominated by silt and clay materials and are stabilized primarily by greasewood and sagebrush vegetation. These systems are very sensitive to disturbances and are capable of transporting large loads of fine sediment during high run-off events.

The State of Colorado has developed *Stream Classifications and Water Quality Standards* (CDPHE, Water Quality Control Commission, Regulation No. 37) that identify beneficial uses of water and numeric standards used to determine allowable concentrations of water quality parameters. All tributaries to the Colorado River from the confluence with the Roaring Fork River to below the confluence with Parachute Creek are classified aquatic life cold 2, recreation 2, water supply, and agriculture. Aquatic life cold class 2 refers to waters not capable of sustaining a wide variety of cold or warm water biota due to habitat, flows, or uncorrectable water quality conditions. Recreation class 2 refers to waters that are not suitable or intended to become suitable for primary contact recreation but may be suitable for recreation that occurs on or adjacent to the water. The water supply class refers to waters that are suitable or intended to become suitable for potable water supplies after receiving standard treatment. The agriculture class refers to waters that are suitable for irrigation or livestock use. Numeric standards include a comprehensive list of physical, biological, inorganic, and metal standards that have been established to protect the designated uses above. At this time there is no water quality data for West Mamm Creek or its tributaries.

The State of Colorado has developed a *303(d) List of Water Quality Limited Segments Requiring TMDLS* (CDPHE, Water Quality Control Commission, Regulation No. 93) that identifies stream segments that are not currently meeting water quality standards with technology based controls alone. West Mamm Creek and its tributaries are within the Lower Colorado River Basin segment COLCLC04a that includes tributaries to the Colorado River from the confluence with the Roaring Fork River to Parachute Creek. This segment is listed for impairment due to Selenium and has been given medium priority by the State.

The State of Colorado has developed a *Monitoring and Evaluation List* (CDPHE, Water Quality Control Commission, Regulation No. 94) that identifies water bodies suspected to have water quality problems. West Mamm Creek and its tributaries do not qualify for this list. However, nearby Mamm Creek has total recoverable iron (Fe) listed as a monitoring parameter and falls within segment COLCLC04a that includes tributaries to the Colorado River from the Roaring Fork River to Parachute Creek.

Environmental Consequences/Mitigation: Proposed activities would occur adjacent to and in several drainages to access the proposed well pads. Activities would also involve the removal of soil and vegetation that could result 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; the potential for sediment transport to these drainages would be minimized. Due to the close proximity of proposed activities to drainages, the following mitigation measures will be implemented to protect surface water.

- The operator will consult with the State of Colorado Water Quality Control Division regarding storm water discharge permits prior to commencing construction activities. All construction activities that disturb one acre or greater require a storm water discharge permit. Written documentation to the Authorized Officer is required to indicate that appropriate permits have been obtained or are not required by the permitting agency.
- The operator will consult with the US Army Corps of Engineers to obtain approval prior to discharging fill material into waters of the US in accordance with Section 404 of the Clean Water Act. Waters of the US are defined in 33 CFR Section 328.3. Written documentation to the Authorized Officer is required to indicate that 404 permits have been obtained or are not required by the permitting agency.
- Roads will be crowned, ditched, surfaced, and constructed to BLM Gold Book standards. Culverts will be installed during no flow or low flow conditions at drainage crossings and will be required to pass a 25-year or greater storm event. The 25-year storm event for the proposed action area is approximately 1.6 inches of precipitation in 6 hours.

- The channel reroute around the proposed H23W pad will be properly designed to mimic the sinuosity, gradient, and geomorphic characteristics of the channel segment being abandoned. The constructed segment will contain grade controls and sufficient armoring to prevent excessive erosion and channel degradation during high runoff events. In addition, the constructed segment will be able to efficiently transport and store sediment without any excessive aggradation.
- Well pads will be constructed to BLM Gold Book standards. Fill slopes will be seeded to minimize erosion and protected with silt fences to prevent sediment from leaving the site.
- An engineered reserve pit will be required to store drilling muds, cuttings, fracing material, and any other byproducts of production activities. Water produced during drilling activities would be contained in an engineered pit on the pad site and hauled to a disposal facility.

Ground Water

The operator proposes to set and cement surface casing to 1500 feet, which is adequate for isolating and protecting all water zones which are currently being utilized. In addition, the operator is required to isolate and protect any usable water zones encountered below the surface casing.

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.

NON-CRITICAL ELEMENTS

The following elements must be addressed due to the involvement of Standards for Public Land Health:

SOILS (includes analysis on Standard 1)

Affected Environment: The soil map from the *Soil Survey of Rifle Area, Colorado: Parts of Garfield and Mesa Counties* (USDA Soil Conservation Service, 1985) indicates that the existing two-track road is located on soil map units Ascalon fine sandy loam and Nihill channery loam. Proposed well pad F24W is located on soil map unit Ascalon fine sandy loam and proposed well pad H23W is located on soil map unit Torriorthents-Rock outcrop complex. Following is a brief description of the soil map units encountered in the proposed action area.

- Ascalon fine sandy loam is a deep, well drained, moderately sloping to rolling soil that occurs on mesas, terraces, sides of valleys, and alluvial fans. Slopes range from 6 to 12 percent and elevations range from 5,000 to 6,500 feet. Erosion hazard is moderate and surface runoff is medium. Primary uses for this soil include irrigated hay and pasture.
- Nihill channery loam is a deep, well drained, nearly level to gently sloping soil that occurs on alluvial fans and sides of valleys. Slopes range from 1 to 6 percent and elevations range from 5,000 to 6,500 feet. Erosion hazard is moderate and surface runoff is slow. Primary uses for this soil include grazing and wildlife habitat.
- Torriorthents-Rock outcrop complex consists of exposed sandstone and shale bedrock with stony soils that are shallow to moderately deep. Soils and outcrops occur on slopes from 15 to 70 percent. Erosion hazard for this complex varies from moderate to severe. Primary uses for this complex include limited grazing, wildlife habitat, and recreation.
 - Torriorthents make up about 60 percent of this complex and occur on foothills and mountainsides below the Rock outcrop. Composition is clayey to loamy and often contains variable amounts of gravel, cobbles, and stones.
 - The Rock outcrop makes up about 25 percent of this complex and mainly consists of Mesa Verde sandstone and Wasatch shale.

Environmental Consequences/Mitigation: There would be some soil loss, loss of soil productivity, and an increase in sediment available for transport resulting from construction activities. Due to the close proximity of the proposed activities to drainages, the following mitigation measures will be implemented to minimize potential negative impacts associated with soil loss and transport.

- Reclamation measures such as contouring disturbed areas, roughing the soil surface, re-vegetating, and controlling runoff will minimize soil erosion and transport by stabilizing areas and capturing sediment.
- Due to the moderate to severe erosion potential of the area soils, the access road will be crowned, ditched, graveled, and include drainage features in accordance with BLM Gold Book standards. In addition, well pads will be constructed to BLM Gold Book standards and will include Best Management Practices (BMPs) designed to minimize erosion and offsite sedimentation. BMPs such as silt fences will be used to prevent sediment from entering nearby drainages.
- 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 of 4 inches.

Analysis on the Public Land Health Standard for upland soils: With appropriate mitigation measures in place, the proposed activities would not likely prevent standard 1 from being achieved.

VEGETATION (includes analysis on Standard 3)

Affected Environment: The vegetation on proposed pad H23W consists of Wyoming big sagebrush and greasewood on the eastern portion of the pad, and pinyon juniper woodland with birchleaf mahogany and snowberry on the western area. Indian ricegrass, junegrass, Sandberg's poa, native clover and other native forbs and grasses make up the herbaceous layer. The vegetation on proposed pad F24W consists of a Basin big sagebrush community.

Environmental Consequences: The well pads would result in an estimated 13.7 acres of disturbance, and a new access road and gathering pipeline would result in additional disturbance of 13.2 acres, for a total of 26.9 acres of disturbance on both private and public land. Total surface disturbance on public land would be 4.5 acres. In order to accommodate access to the wells (if production occurs), about half of each pad would not be reclaimed during the life of the wells, and the driving surface of the road would not be reclaimed during the life of the wells. With implementation of reclamation practices identified in the COA's, 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. However, because of the periodic workovers and the potential for additional well bores to be drilled from this pad, it is possible that vegetation could remain in an early seral stage for the life of the wells.

Mitigation: The following steps will be taken to successfully reclaim the disturbed area:

- A BLM seed mix designed to meet interim reclamation standards using a mixture of native shrubs and grasses, and native or desirable non-native forbs is recommended; however, because the well pads and the main portion of the proposed road and pipeline are located on private surface, the private landowner would ultimately determine the seed mix to be used for reclamation. Revegetating the area will help prevent noxious and invasive weed establishment, maintain big game winter range habitat and prevent erosion. The following seed mix and rates are recommended for use on all disturbed surfaces within the project area:

| Species of Seed | Variety | Drilled Application Rate* (PLS lbs/acre) |
|------------------------|----------------|---|
| Wyoming big sagebrush | | 0.2 |
| 4-wing saltbush | Rincon | 3.4 |
| Indian ricegrass | Paloma | 1.3 |
| Prairie junegrass | | 0.1 |
| Sandberg bluegrass | | 0.3 |
| Thickspike wheatgrass | Critana | 2.0 |
| Scarlet globemallow | | 0.3 |
| Northern sweetvetch | | 6.5 |
| TOTAL | | 14.1 PLS lbs/acre |

* In areas that cannot be drilled, broadcast seed at twice the application rate and cover ¼ to ½ deep with a harrow or drag bar.

- The pads will be fenced to exclude livestock grazing for the first two growing seasons or until the seeded species or native volunteer species become firmly established. The seeded species will be considered firmly established when at least 50% of the new plants are producing seed.

Analysis of the Public Land Health Standard for plant and animal communities (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial): A formal Land Health Assessment is not planned for completion until 2010. However, the Invasive, Non-native Species section includes provisions to revegetate the disturbances with native vegetation and to control noxious weeds. If successfully revegetated, the proposed action may result in a localized improvement in vegetative conditions by improving the density, frequency and composition of native plant species.

WILDLIFE, AQUATIC (includes analysis on Standard 3)

Affected Environment: There are no aquatic systems at the proposed project sites. However, the well pads are located less than ½ mile from West Mamm Creek, a perennial stream which drains into Mamm Creek which in turn enters the Colorado River, which contains a variety of fishes and aquatic insects.

Environmental Consequences/Mitigation:

The action calls for the construction of 2 new well pads, access road and pipeline and the drilling of 3 wells. It is possible that until such time as the well pad is reclaimed, erosion from thunderstorm activity could add sediment into Middle Mamm Creek and eventually the Colorado River. However, any sediment that eventually reaches the Colorado River through rain and snowmelt events will be well within the background levels of the Colorado River and minor potential increases in sediment would be undetectable and should have no impact to aquatic wildlife.

Analysis on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Terrestrial): A formal Land Health Assessment is not planned for completion in the project area until 2010. Although a determination has not been formalized, assuming proper, timely well pad reclamation, the proposed action should result in minimal effects to aquatic wildlife and will have no negative effects on the ability to maintain or meet Standard 3 for aquatic wildlife.

WILDLIFE, TERRESTRIAL (includes analysis on Standard 3)

Affected Environment: The proposed project would be located within pinyon-juniper woodlands and sagebrush vegetation with an understory comprised of native grasses and forbs. The project area provides cover, forage, and nesting habitat for a variety of big game, small game, and non-game mammals, birds, and reptiles. The area is also mapped as crucial big game winter range.

With the surface locations of the federal wells being on private surface (Couey) for essentially both well pads, the lease stipulations are not generally applicable. However, because the operator must use a road and pipeline in NE¼NW¼ Section 24, T7S R93W crossing federal Lease #COC-56298 which stipulates the standard 5 month big game winter timing limitation, any well pad/road/pipeline construction or drilling and/or completion work will not be allowed from December 1 through April 30. An exception for the last 60 days may be granted by the Authorized Officer if mild winter conditions exist.

Environmental Consequences/Mitigation: General impacts (short term, long term, and cumulative) to terrestrial wildlife were adequately addressed in 1999 FSEIS. Standard measures are incorporated into the APD along with other measures (i.e., automatic well reporting, and reclamation) to conform to the FSEIS that will help to mitigate wildlife impacts. Public access and use of the roads to the well sites will be prevented due to controlled access on private lands. This will minimize disturbance and reduce effective habitat loss. The action will result in the direct loss of 26.9 acres of foraging habitat, cover, and nesting habitat. The action will further fragment habitat and reduce habitat connectivity and habitat patch size. Human use of the area will further displace big game due to increased vehicular use of roads and noise and commotion associated with well pad construction, and drilling and completion activities.

Mitigation:

Enforce big game winter timing limitation on lease #COC-56298 with respect to all construction, drilling, and completion activities.

Analysis on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Aquatic): A formal Land Health Assessment is not planned for completion until 2010. Since the proposed action calls for the use of existing surface locations, the action should result in no further deterioration of the ability of the landscape to maintain or meet Standard 3 for terrestrial wildlife species. Proper and timely reclamation will help to minimize the potential failure to meet this Standard.

THRESHOLD ANALYSIS FOR WILDLIFE AND WILDLIFE HABITAT MITIGATION: In the FSEIS Record of Decision (March 1999) on page 14 it states that: *“Within high value or crucial big game winter range, the operator is required to implement specific measures to reduce impacts of oil and gas operations on wildlife and wildlife habitat.. Measures to reduce impacts would generally be considered when well density exceeds four wells per 640 acres, or when road density exceeds three miles of road per 640 acres.”* Furthermore, Lease Notice GS-LN-05 states: *“Within high value or crucial big game winter range, the operator is required to implement specific measures to reduce impacts of oil and gas operations on wildlife and wildlife habitat.”*

The road and well density thresholds will not be exceeded via implementation of the proposed action, as no new road or well pad construction will occur. As such offsite or replacement mitigation measures to reduce impacts to wildlife are not currently being considered. However, as future activity increases in the area, it is possible that mitigation will be sought to offset habitat loss and fragmentation. Cumulative impacts will be monitored over time and as future development increases mitigation opportunities will be identified and pursued.

OTHER NON-CRITICAL ELEMENTS:

ACCESS AND TRANSPORTATION

Environmental Consequences/Mitigation: Existing road access to the well pads is through privately owned lands with no legal public access. Truck traffic will be the heaviest during rig-up, completion

activities, and the rig-move to the next location. The proposed drilling and completion activities on the federal wells will likely commence in fall, 2006.

GEOLOGY AND MINERALS

Affected Environment/Environmental Consequences/Mitigation:

The target gas zones for the proposed directional wells are sands within the middle and lower part of the Williams Fork Formation (Mesaverde Group). The shallower Wasatch G sands may contain gas but are currently not an economic target. The wells will reach total depth in the Rollins Sandstone (base of Williams Fork). All coal zones are too deep for underground mining. The operator would be required to cement the production casing from total depth to about 200' above the top of the Mesaverde, which would isolate the gas-producing Williams Fork from other formations and zones.

NOISE:

Environmental Consequences/Mitigation: There will be increased levels of noise during the construction, drilling, and completion phases of the proposed action. The noise will be most noticeable along the roads used to haul equipment and at the well site. Drilling activities are subject to noise abatement procedures as defined in the Colorado Oil and Gas Conservation Commission Rules and Regulations (Aesthetic & Noise Control Regulations).

PALEONTOLOGY

Affected Environment: The proposed wells and access road fall within a Condition I area for possible sites of paleontological or scientific value. However, dense soil and vegetation cover rock outcrops and as a result a paleontological survey would not be required for those specific potentially fossiliferous areas prior to BLM project authorization. If scientifically important fossils are discovered during construction activities and cannot be avoided, mitigation may be necessary.

All persons associated with operations under this authorization should be informed that any objects or sites of paleontological value, such as vertebrate or scientifically important invertebrate fossils, should not be destroyed, damaged or removed.

Environmental Consequences/Mitigation: A standard Education/Discovery Condition of Approval for Paleontology Resource protection will be attached to the APDs.

VISUAL RESOURCES

Affected Environment: The proposed 2 well pads, new access road and pipeline are located on primarily private surface in an area classified as VRM Class II in the GSRA 1984 Resource Management Plan. The objective of VRM Class II is to retain the existing characteristic landscape. The level of change in any of the basic landscape elements (line, form, color, texture) due to management activities should be low and not evident.

Visual resource management objectives do not apply to non-BLM lands, but visual concerns may be addressed on split estate where federal minerals occur. VRM classes shown for non-public lands are an indication of the visual values for those lands, and those values are only protected by landowner discretion.

The protection of VRM classes, landscape character and scenic quality on private lands and split estate is discussed on pages 3-41 through 3-45 of the FSEIS. The impacts of development are also discussed on pages 4-49 through 4-54 of the FSEIS. The proposed action will not affect any of the key viewing areas

or viewsheds described in the FSEIS. In particular, the proposed action will not be seen from the key viewing areas of the 1-70 corridor or the town of Rifle

Environmental Consequences/Mitigation: The proposed action is likely to lengthen the long term visual modifications due to the construction of the new well pads where removal of pinyon-juniper and/or sagebrush would occur. The locations lie within relatively open, flat terrain, surrounded by taller mesas; the new construction activities would create contrast in color, line, shape and texture, particularly when viewed from local area (within ½ mile). Cuts and fills also create contrast by introducing new colors, shapes and forms into the existing landscape. Interim reclamation of the well pads with seeded shrub and grass species would reduce the contrast after two to three growing seasons. After completion and reclamation, long term impacts are expected due to the removal of vegetation and the presence of production facilities. Views into the narrow valley where both pads are situated are limited from the valley floor, and the construction activities are not expected to draw the eye from long-term viewing perspective. No KOPS were found along existing County roads as the proposed disturbance would not be readily evident aside from potential background view of excess material piles.

The production facilities to be located on the pads will be painted conforming environmental colors as specified in the COAs or lease terms. The well facilities including the metal containment ring will be painted Shale Green, based on on-site recommendations. Efforts should be made to leave as much existing vegetation as possible to screen the excavated disturbance. The facilities should be placed against the cut side of the pad, where feasible.

For the following elements, those brought forward for analysis will be formatted as shown above.

| Non-Critical Element | NA or Not Present | Applicable or Present, No Impact | Applicable & Present and Brought Forward for Analysis |
|------------------------|-------------------|----------------------------------|---|
| Travel/Access | | | X |
| Cadastral Survey | X | | |
| Fire/Fuels Management | | X | |
| Forest Management | | X | |
| Geology and Minerals | | | X |
| Hydrology/Water Rights | X | | |
| Law Enforcement | X | | |
| Paleontology | | | X |
| Noise | | | X |
| Range Management | X | | |
| Realty Authorizations | | X | |
| Recreation | X | | |
| Socio-Economics | | X | |
| Transportation | | X | |
| Visual Resources | | | X |

CUMULATIVE IMPACTS SUMMARY:

The 2004 Draft Roan Plateau Resource Management Plan Amendment & Environmental Impact Statement released in November, 2004 (DEIS, 2004) analyzed 5 alternatives for within the Roan Plateau planning area. These alternatives assessed impacts, including cumulative impacts, for oil and gas development scenarios ranging from 855 to 1582 new gas wells on public lands. The drilling of the wells

addressed in this Environmental Assessment is well below the low range of development analyzed in the DEIS.

Since the completion of the 1999 Oil and Gas Leasing and Development FSEIS, the number of wells analyzed in subsequent NEPA documents has exceeded the 230 federal wells forecast in the RFD for lands outside the NOSR Production Area. However, drilling technology advancements has drastically reduced the expected surface disturbance of 3.4 acres per well or 1,020 acres from Federal wells analyzed in the 1999 FSEIS. The FSEIS analysis was based on a reasonably foreseeable development scenario, including the numbers of wells, well spacing, equipment necessary, and assumed emission rates. Since completion of the FSEIS, the majority of new wells have been drilled directionally and, in many instances, are being drilled from existing well pads, thereby reducing the overall anticipated surface impact addressed in the 1999 FSEIS.

The air quality analysis conducted in the 2004 DEIS does assess the impacts to the airshed from oil and gas development within and around the Roan Plateau Planning Area. The proposed action addressed in this document, which could include well pad and/or road construction, well drilling and well completion work typical for oil and gas development, would not represent a significant increase in emissions relative to the emissions assumed in the 2004 DEIS.

PERSONS / AGENCIES CONSULTED:

RuthAnn Morss, Permit Agent, EnCana Oil & Gas (USA) Inc.
 Joe Schmid, Construction Foreman, EnCana Oil & Gas (USA) Inc.
 Miracle Pfister, Permit Agent, EnCana Oil & Gas (USA) Inc.
 Dayton Slaugh, Surveyor, Tri-State Land Surveying, Inc.

INTERDISCIPLINARY REVIEW:

| <u>Name</u> | <u>Title</u> | <u>Area of Responsibility</u> |
|-----------------|---------------------------------|---|
| Jim Byers | Natural Resource Specialist | Team Leader |
| Cheryl Harrison | Archaeologist | Cultural Resources, Native American Religious Concerns |
| Tom Fresques | Wildlife Biologist | Terrestrial & Aquatic Wildlife, Special Status Wildlife Species |
| Beth Brenneman | Ecologist | Special Status Plants, Vegetation, Invasive/Non-native Species |
| Bruce Fowler | Geologist | Ground Water/Minerals |
| Mike Kinser | Rangeland Management Specialist | Riparian |
| Marty O'Mara | Petroleum Engineer | Downhole Conditions of Approval |
| Kay Hopkins | Outdoor Recreation Planner | Visual Resources |
| Jeff O'Connell | Hydrologist | Air, Riparian, Water, Soil |
| Mike McGuire | Rangeland Management Specialist | Range |

FONSI
CO-140-2006-055 EA

EnCana Oil & Gas (USA) Inc.

Proposal to Drill 3 Directional Wells from proposed fee/fee H23W Well Pad and proposed fee/fee F24W Well Pad in West Mamm Creek drainage

Couey Federal 23-10 (H23W Pad)
Couey Federal 24-3 & 24-3D (F24W Pad)

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

DECISION RECORD

DECISION: It is my decision to approve the Applications for Permit to Drill the directional wells [Couey Federal 23-10 (H23W Pad) and Couey Federal 24-3 & 24-3D (F24W Pad)] with the Conditions of Approval 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.

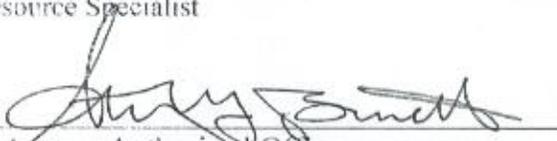
RATIONALE:

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 Surface Use Plan and the attached Conditions of Approval.

MITIGATION MEASURES: Mitigation measures are included in the Surface Use Plan and Conditions of Approval for both surface and drilling operations.

NAME OF PREPARER: Jim Byers, Natural Resource Specialist

SIGNATURE OF AUTHORIZED OFFICIAL:


Authorized Officer

DATE SIGNED:

AUG 02 2006

CONDITIONS OF APPROVAL
APPLICATION FOR PERMIT TO DRILL

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

| | | | |
|------------------|-----------------|-----------------------------|--------------|
| PAD | H23W | SENE Sec 23, T07S, R93W | |
| Well Name | Well No. | Bottom Hole Location | Lease |
| Couey Fed | 23-10 (H23W) | NWSE Sec 23 T07S, R93W | COC-52889 |

NOTIFICATION REQUIREMENTS

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

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

APD approval is valid for a period of one (1) year from the signature date. An extension period may be granted, if requested, prior to the expiration of the original approval period.

Please contact Marty O'Mara (970) 947-5221 of the Glenwood Springs Energy Office at least 24 hours prior to spud.

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

**DOWNHOLE CONDITIONS OF APPROVAL FOR NOTICE TO DRILL
H23W PAD WELLS**

1. The TOC for the production casing needs to be a minimum of 200' above the Williams Fork Formation either during the primary cement job or through remedial cementing. The TOC for each well must be a minimum depth of:

| <u>Well No.</u> | <u>MD</u> | <u>Minimum TOC</u> | <u>TVD</u> |
|-----------------|-----------|--------------------|------------|
| 23-10 (H23W) | 4801' | | 4485' |

2. A cement bond log (CBL) will be run from the production casing shoe to **TOC** and shall be utilized to determine the bond quality for the production casing.
3. Any usable water zones encountered below the surface casing shall be isolated and or protected by cementing across the zone. The minimum requirement is to cement from 50 feet above to 50 feet below each usable water zone encountered.
4. Open hole logs (PEX) shall be run in the surface section of the hole to determine shallow gas and waters. This COA is necessary only for the first well drilled on a pad.
5. The neutron-density porosity log shall be run from TD to surface casing in at least one of the wells on the pad.
6. Encana Oil & Gas, Inc. shall test domestic water wells within a ¼ mile radius within 30 days after the well penetrates 500 feet, or penetrates 100 feet past the water well(s) depth (whichever depth is more shallow). In addition, Encana shall test the water wells(s) within 30 days upon the completion of hydraulic fracturing treatments. These tests are to ensure the domestic water well(s) are free of potential contamination from the drilling and completion operations. Water samples should be tested for like fluids utilized in the drilling and completion operations.

REGULATORY REMINDERS

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

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

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

A copy of the approved application for permit to drill (APD), including the conditions of approval and accompanying surface use plan will be furnished to the field representative by the operator to insure compliance and will be available to authorized personnel at the drillsite whenever active construction or drilling operations are underway.

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

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

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

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

| | | |
|--|--|-----------------|
| Marty O'Mara Petroleum Engineer | C: 970.319.5837 BLM Fax: 970.947.5267 | W: 970.947.2825 |
| Jennifer Gallegos Petroleum Engineering Tech. | C: 970.319.2211 | W: 970.947.5220 |
| Steve Ficklin Petroleum Engineering Tech. | C: 970.319.2509 | W: 970.947.5213 |
| Jim Byers Natural Resource Specialist | | W: 970.947.5222 |

EPA'S LIST OF NONEXEMPT EXPLORATION AND PRODUCTION WASTES

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

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

SURFACE USE CONDITIONS OF APPROVAL

1. At least forty-eight (48) hours prior to construction of access road and/or well pad, operator will notify BLM representative of construction startup plans.
2. 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) .
3. The big game winter timing limitation outlined on BLM Lease #COC-56298 calling for no construction, drilling or completion activities from December 1 through April 30 will remain in full force and effect. Exceptions may be granted for last 60 days of timing limitation if mild winter conditions exist.
4. During road and pipeline construction, no sidcasting of excavated material or large rocks will be allowed into West Mamm Creek. Provisions to control rolling boulders and rock during construction will be implemented. Large excavated rocks will bedded into the subgrade and fill so as to prevent movement downslope during road pioneering and after construction completion.
5. Maximum width of right-of-way for pipeline installation across the BLM 40 acre parcel in NE $\frac{1}{4}$ NW $\frac{1}{4}$ Section 24, T7S R93W will be **55 feet which includes the proposed road** along edge of West Mamm Creek. This is a deviation from the 55 feet pipeline working area “in addition to road” requested on cover sheet of APD.
6. Topsoil stockpile will be established in windrow along entire south edge of pad (between corners 2 & 4) to act as deflection berm for storm water management instead of placed between Corners 6 & 7 on sheet 4 of 11. Topsoil piles will be seeded within 72 hours with prescribed BLM seed mix unless otherwise approved by Authorized Officer.
7. Juniper trees within the construction limits would be removed and placed at the toe of fillslope in a windrow to help catch excavated material. Such woody material will be placed perpendicular to the slope (or placed cross-slope) to help retain soil, reduce soil erosion and reduce visual contrast of the cuts and fills. Clearing and grubbing debris shall not be placed or buried under any embankment sections except as described above. Any trees damaged outside the construction limits from rolling material or other construction activities would be removed or limbed, depending on the extent of damage.
8. The proposed drainage re-route as shown on Sheet 4 to be established between Corners 4 and 5 will be constructed so as to deflect flows away from the cutslope of constructed pad. Various-sized rock material including large boulders will be used to line and armor the entire length of the constructed channel.
9. The operator will be required to adhere to the flagged centerline road alignment marked on-the-ground and construct the access road with a maximum grade not to exceed 10%. Culverts (24” minimum diameter) will be installed along spur road to pad as determined by Authorized Officer. The inlet and outlet sides of the culvert will be riprapped with a well-graded mixture of rock sizes to prevent erosion or headcutting.

The road will be crowned, ditched, and drained. When rutting within the traveled way becomes greater than 6 inches, gravel will be applied as approved by the Authorized Officer.
10. Culverts will be installed during no flow or low flow conditions at drainage crossings and will be required to pass a 25-year or greater storm event. The 25-year storm event for the proposed action area is approximately 1.6 inches of precipitation in 6 hours.

11. The operator is responsible for applying dust abatement measures as needed or directed by the Authorized Officer. The level and type of treatment (watering or application of various dust agents, surfactants and road surfacing material) may be changed in intensity and must be approved by the Authorized Officer. Dust control is needed to prevent heavy plumes of dust from road use that create safety problems and disperses heavy amounts of particulate matter on adjacent vegetation.

12. Any existing range fence damaged from construction work or rolling material would be replaced and or repaired to the satisfaction of the Authorized Officer.

13. To avoid pinon tree mortality created from the ongoing pinon ips beetle outbreak, any pinon trees disturbed during road, pad or pipeline construction work will be chipped after severed from stump or grubbed from ground, buried in toe of fillslopes (if feasible) or cut and removed from site within 24 hours to a Colorado State Forest Service-approved site.

14. Operator will be responsible for providing timely year-round road maintenance and cleanup on the access road. A regular schedule for maintenance will include, but not be limited to, blading, ditch and culvert cleaning, road surface replacement and dust abatement.

15. Measures will be undertaken to identify and protect the existing survey monument (US GLO Brass Cap for ¼ Corner between Section 23 and 24) from damage during pad construction. The Brass Cap is situated in proximity to corner 1 of H23W pad (refer to Sheet 4 in APD).

16. The project proponent is required to monitor for the presence of any Colorado-listed noxious weeds at least once or twice annually during the growing season until final reclamation of the pad is complete. The project proponent will promptly treat and control any noxious weeds. A Pesticide Use Proposal must be approved by BLM prior to the use of herbicides.

17. Remote monitoring will 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. Cultural Resource Education/Discovery Stipulation

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 43CFR10.4(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 43CFR10.4 (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, 36CFR800.112). 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); and,
- a time frame 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 of 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 of 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.

19. 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.

20. Reclamation Plan. Refer to Appendix I. Surface Reclamation of the 6/98 GSFO's Draft Supplemental EIS for Oil & Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, objectives, timelines, measures and monitoring methods. These guidelines will be followed in completing the reclamation of disturbed surfaces on well pads, access roads and pipelines

Some effective practices that will be implemented during reclamation include, but are not limited to: proper siting of the well pad to minimize impacts, the immediate seeding of disturbed areas after construction, proper storage and redistribution of topsoil, reshaping cut and fill slopes, seeding with

specified seed mix within the first available growing season after disturbance, deep ripping (>18 inches on 2 foot centers), fencing reclaimed areas to protect from livestock use, and the use of riprap, slash or other erosion control structures to help control sediment loss.

The 4 Reclamation Categories defined on Page I-8 of Appendix I (6/98 GSFO’s Draft Supplemental EIS for Oil & Gas Leasing Development) will be used in gauging the progress of reclamation monitoring.

Seed Mix Application Practices

A BLM seed mix designed to meet interim reclamation standards using a mixture of native shrubs and grasses, and native or desirable non-native forbs is recommended; however, because the well pads and the main portion of the proposed road and pipeline are located on private surface, the private landowner would ultimately determine the seed mix to be used for reclamation. Revegetating the area will help prevent noxious and invasive weed establishment, maintain big game winter range habitat and prevent erosion. The following seed mix and rates are recommended for use on all disturbed surfaces within the project area:

| <u>Species of Seed</u> | <u>Variety</u> | <u>Drilled Application Rate* (PLS lbs/acre)</u> |
|------------------------|----------------|---|
| Wyoming big sagebrush | | 0.2 |
| 4-wing saltbush | Rincon | 3.4 |
| Indian ricegrass | Paloma | 1.3 |
| Prairie junegrass | | 0.1 |
| Sandberg bluegrass | | 0.3 |
| Thickspike wheatgrass | Critana | 2.0 |
| Scarlet globemallow | | 0.3 |
| Northern sweetvetch | | 6.5 |
| TOTAL | | 14.1 PLS lbs/acre |

* In areas that cannot be drilled, broadcast seed at 2 times the application rate and cover ¼ to ½ deep with a harrow or drag bar.

The above rate of application is listed in pounds of pure live seed (PLS)/acre. The seed will be certified free of noxious weeds. All seed to be applied to public land must have a valid seed test, within one year of the acceptance date, from a seed analysis lab by a registered seed analyst (Association of Official Seed Analysts). The seed lab shall show no more than 0.5 percent by weight of “other weed” seeds; and the seed lot shall contain no “noxious, prohibited, or restricted weed” seeds according to the All States Noxious Test. Seed may contain up to 2.0 percent of “other crop” seed by weight which includes the seed of other agronomic crops and native plants; however, a lower percent of other crop seed is recommended. Seed tags or other official documentation shall be supplied to the Glenwood Springs BLM Energy Office Ecologist at least 14 days prior to the date of proposed seeding for acceptance. Seed which does not meet the above criteria shall not be applied to public lands.

Upon completion of backfilling, leveling, ripping to minimum 18 inch depth on 2 foot centers, and recontouring, the stockpiled topsoil will be evenly spread over the reclaimed areas(s). Prior to reseeding, all disturbed surfaces will be scarified and left with a rough surface. No depressions will be left that would trap water and form ponds.

The prepared seedbed will be seeded within 24 hours after completing dirt work unless a change is requested by the operator and approved by the Authorized Officer. Prepare the seedbed by contour cultivating 4-6 inches deep. **Drill seed ¼ to ½ inch deep** following the contour. All seeding will be conducted after September 1 and prior to ground frost. Spring seeding will be done after the frost leaves the ground and no later than May 15th. If the seeding is unsuccessful, operator will be required to make

subsequent seedings until the reclamation objectives identified in Appendix I. Surface Reclamation of the 6/98 GSFO's Draft Supplemental EIS for Oil & Gas Leasing Development are met.

Erosion Control Practices

The cut and fill slopes will be protected against rilling and erosion with measures such as water bars, lateral furrows, or other measures approved by the Authorized Officer. Weed free straw bales, straw "wattles", straw matting or a well-anchored fabric silt fence will be used on cuts and fill slopes to protect against soil erosion.

Topsoil Practices

During well pad, road and/or pipeline construction, topsoil will be stripped to a minimum depth of 6 inches and segregated from other subsurface material piles, ie. excess material from reserve pit construction. If topsoil is less than 6 inches, the top 6 inches of surface material will be stripped and piled. Topsoil pile will be seeded with sterile grass or listed seed mix above within 72 hours after topsoil stripping is completed.

Site Protection Practices

Both pads will be fenced to exclude livestock grazing for the first two growing seasons or until the seeded species or native volunteer species become firmly established. The seeded species will be considered firmly established when at least 50% of the new plants are producing seed. The Authorized Officer will approve the type of fencing. Fencing shall be to BLM standards

The operator will submit an annual reclamation report by December 31 to the Authorized Officer. The report will document compliance with all aspects of the reclamation objectives. The report will specify if the reclamation objectives are likely to be achieved and what additional actions were taken or are needed to meet these objectives.

21. The operator will consult with the State of Colorado Water Quality Control Division regarding Stormwater Discharge Permits prior to commencing construction activities. All construction activities that disturb one acre or greater require a Stormwater Discharge Permit. Written documentation to the BLM Authorized Officer is required within 30 days of the APD approval date to indicate that appropriate permits have been obtained. Written documentation may be a copy of the Stormwater Discharge Permit or an official verification letter from the State Water Quality Control Division to the operator that includes the Permit Certification Number. For further information contact Jeff O'Connell, Hydrologist of the Glenwood Springs Energy Office at 970-947-5215 or Jeffrey_O'Connell@blm.gov. Appropriate documents may be sent via electronic mail, faxed (970-947-5267), or mailed to Jeff O'Connell at the Glenwood Springs Energy Office.

22. The operator will consult with the US Army Corps of Engineers to obtain approval prior to discharging fill material into waters of the US in accordance with Section 404 of the Clean Water Act. Waters of the US are defined in 33 CFR Section 328.3. Written documentation to the BLM Authorized Officer is required within 45 days of the APD approval date to indicate that the US Army Corps of Engineers has been notified prior to construction or that 404 Permits have been obtained or are not required by the permitting agency. Written documentation may be a copy of the Pre-Construction Notification (PCN) Form or an official verification letter from the US Army Corps of Engineers to the operator stating that a permit has been issued or is not required for the activities in question. For further information contact Jeff O'Connell, Hydrologist of the Glenwood Springs Energy Office at 970-947-5215 or Jeffrey_O'Connell@blm.gov. Appropriate documents may be sent via electronic mail, faxed (970-947-5267), or mailed to Jeff O'Connell at the Glenwood Springs Energy Office.

CONDITIONS OF APPROVAL
APPLICATION FOR PERMIT TO DRILL

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

| PAD | F24W | SEnw Sec 24, T07S, R93W | |
|------------------|-----------------|--------------------------------|--------------|
| Well Name | Well No. | Bottom Hole Location | Lease |
| Couey Fed | 24-3 (F24W) | NENW Sec 24 T07S, R93W | COC-56298 |
| Couey Fed | 24-3D (F24W) | NENW Sec 24 T07S, R93W | COC-56298 |

NOTIFICATION REQUIREMENTS

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

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

APD approval is valid for a period of one (1) year from the signature date. An extension period may be granted, if requested, prior to the expiration of the original approval period.

Please contact Marty O’Mara (970) 947-5221 of the Glenwood Springs Energy Office at least 24 hours prior to spud.

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

**DOWNHOLE CONDITIONS OF APPROVAL FOR NOTICE TO DRILL
F24W PAD WELLS**

1. The TOC for the production casing needs to be a minimum of 200' above the Williams Fork Formation either during the primary cement job or through remedial cementing. The TOC for each well must be a minimum depth of:

| <u>Well No.</u> | <u>MD</u> | <u>Minimum TOC</u> <u>TVD</u> |
|-----------------|-----------|----------------------------------|
| 24-3 (F24W) | 4101' | 4008' |
| 24-3D (F24W) | 4052' | 4023' |

2. A cement bond log (CBL) will be run from the production casing shoe to **TOC** and shall be utilized to determine the bond quality for the production casing.
3. Any usable water zones encountered below the surface casing shall be isolated and or protected by cementing across the zone. The minimum requirement is to cement from 50 feet above to 50 feet below each usable water zone encountered.
4. Open hole logs (PEX) shall be run in the surface section of the hole to determine shallow gas and waters. This COA is necessary only for the first well drilled on a pad.
5. The neutron-density porosity log shall be run from TD to surface casing in at least one of the wells on the pad.
6. Encana Oil & Gas, Inc. shall test domestic water wells within a ¼ mile radius within 30 days after the well penetrates 500 feet, or penetrates 100 feet past the water well(s) depth (whichever depth is more shallow). In addition, Encana shall test the water wells(s) within 30 days upon the completion of hydraulic fracturing treatments. These tests are to ensure the domestic water well(s) are free of potential contamination from the drilling and completion operations. Water samples should be tested for like fluids utilized in the drilling and completion operations.

REGULATORY REMINDERS

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

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

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

A copy of the approved application for permit to drill (APD), including the conditions of approval and accompanying surface use plan will be furnished to the field representative by the operator to insure compliance and will be available to authorized personnel at the drillsite whenever active construction or drilling operations are underway.

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

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

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

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

| | | |
|--|--|-----------------|
| Marty O'Mara Petroleum Engineer | C: 970.319.5837 BLM Fax: 970.947.5267 | W: 970.947.2825 |
| Jennifer Gallegos Petroleum Engineering Tech. | C: 970.319.2211 | W: 970.947.5220 |
| Steve Ficklin Petroleum Engineering Tech. | C: 970.319.2509 | W: 970.947.5213 |
| Jim Byers Natural Resource Specialist | | W: 970.947.5222 |

EPA'S LIST OF NONEXEMPT EXPLORATION AND PRODUCTION WASTES

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

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

SURFACE USE CONDITIONS OF APPROVAL

1. At least forty-eight (48) hours prior to construction of access road and/or well pad, operator will notify BLM representative of construction startup plans.
2. 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) .
3. The big game winter timing limitation outlined on BLM Lease #COC-56298 calling for no construction, drilling or completion activities from December 1 through April 30 will remain in full force and effect. Exceptions may be granted for last 60 days of timing limitation if mild winter conditions exist.
4. During road and pipeline construction, no sidcasting of excavated material or large rocks will be allowed into West Mamm Creek. Provisions to control rolling boulders and rock during construction will be implemented. Large excavated rocks will bedded into the subgrade and fill so as to prevent movement downslope during road pioneering and after construction completion.
5. Maximum width of right-of-way for pipeline installation across the BLM 40 acre parcel in NE $\frac{1}{4}$ NW $\frac{1}{4}$ Section 24, T7S R93W will be **55 feet which includes the proposed road** along edge of West Mamm Creek. This is a deviation from the 55 feet pipeline working area “in addition to road” requested on cover sheet of APD.
6. Topsoil piles will be seeded within 72 hours with prescribed BLM seed mix unless otherwise approved by Authorized Officer.
7. Juniper trees within the construction limits would be removed and placed at the toe of fillslope in a windrow to help catch excavated material. Such woody material will be placed perpendicular to the slope (or placed cross-slope) to help retain soil, reduce soil erosion and reduce visual contrast of the cuts and fills. Clearing and grubbing debris shall not be placed or buried under any embankment sections except as described above. Any trees damaged outside the construction limits from rolling material or other construction activities would be removed or limbed, depending on the extent of damage.
8. The proposed drainage re-route as shown on Sheet 4 to be established between Corners 4 and 6 will be constructed so as to deflect flows away from the cutslope of constructed pad. Various-sized rock material including large boulders will be used to line and armor the entire length of the constructed channel. Existing drainage scheduled for re-route will be ripped, seeded and reclaimed prior to completion of pad construction.
9. The operator will be required to adhere to the flagged centerline road alignment marked on-the-ground and construct the access road with a maximum grade not to exceed 10%. Culverts (24” minimum diameter) will be installed along spur road to pad as determined by Authorized Officer. The inlet and outlet sides of the culvert will be ripped with a well-graded mixture of rock sizes to prevent erosion or headcutting.

The road will be crowned, ditched, and drained. When rutting within the traveled way becomes greater than 6 inches, gravel will be applied as approved by the Authorized Officer.
10. Culverts will be installed during no flow or low flow conditions at drainage crossings and will be required to pass a 25-year or greater storm event. The 25-year storm event for the proposed action area is approximately 1.6 inches of precipitation in 6 hours.

11. The operator is responsible for applying dust abatement measures as needed or directed by the Authorized Officer. The level and type of treatment (watering or application of various dust agents, surfactants and road surfacing material) may be changed in intensity and must be approved by the Authorized Officer. Dust control is needed to prevent heavy plumes of dust from road use that create safety problems and disperses heavy amounts of particulate matter on adjacent vegetation.

12. Any existing range fence damaged from construction work or rolling material would be replaced and or repaired to the satisfaction of the Authorized Officer.

13. To avoid pinon tree mortality created from the ongoing pinon ips beetle outbreak, any pinon trees disturbed during road, pad or pipeline construction work will be chipped after severed from stump or grubbed from ground, buried in toe of fillslopes (if feasible) or cut and removed from site within 24 hours to a Colorado State Forest Service-approved site.

14. Operator will be responsible for providing timely year-round road maintenance and cleanup on the access road. A regular schedule for maintenance will include, but not be limited to, blading, ditch and culvert cleaning, road surface replacement and dust abatement.

15. Proposed Sediment Reservoirs shown near corners 1 and 2 will be dropped from construction plan.

16. The project proponent is required to monitor for the presence of any Colorado-listed noxious weeds at least once or twice annually during the growing season until final reclamation of the pad is complete. The project proponent will promptly treat and control any noxious weeds. A Pesticide Use Proposal must be approved by BLM prior to the use of herbicides.

17. Remote monitoring will 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. Cultural Resource Education/Discovery Stipulation

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 43CFR10.4(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 43CFR10.4 (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, 36CFR800.112). 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); and,
- a time frame 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 of the authorization boundaries but directly associated with the impacted resource will also be included in this evaluation and/or mitigation.

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