

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

ENVIRONMENTAL ASSESSMENT

NUMBER: CO-140-2007-064EA

CASEFILE NUMBER: Federal Lease COC-2799 (1976)

PROJECT NAME: Application for a Permit to Directionally Drill 8 Federal Wells from a Private Surface Location (Clough RWF 23-14) on Webster Mesa.

LOCATION: NW¼SW¼, Section 14, Township 6 South, Range 94 West, Sixth Principal Meridian.

LEGAL DESCRIPTIONS:

Table 1. Surface and Bottomhole Locations of Proposed Federal Wells		
<i>Proposed Wells</i>	<i>Surface Locations (Sec.14, T.6 S., R.94W.)</i>	<i>Bottomhole Locations (Sec.14, T.6 S., R.94W.)</i>
Clough RWF 13-14	2551 feet FSL x 1029 feet FWL, NWSW	2043 feet FSL x 613 feet FWL, NWSW
Clough RWF 23-14	2550 feet FSL x 1039 feet FWL, NWSW	1882 feet FSL x 1929 feet FWL, NESW
Clough RWF 313-14	2588 feet FSL x 1033 feet FWL, NWSW	2629 feet FSL x 770 feet FWL, NWSW
Clough RWF 323-14	2587 feet FSL x 1043 feet FWL, NWSW	2515 feet FSL x 1965 feet FWL, NESW
Clough RWF 413-14	2581 feet FSL x 1032 feet FWL, NWSW	2349 feet FSL x 692 feet FWL, NWSW
Clough RWF 423-14	2580 feet FSL x 1042 feet FWL, NWSW	2164 feet FSL x 2008 feet FWL, NESW
Clough RWF 513-14	2543 feet FWL x 1028 feet FWL, NWSW	1547 feet FSL x 1015 feet FWL, NWSW
Clough RWF 523-14	2542 feet FSL x 1038 feet FWL, NWSW	1549 feet FSL x 2020 feet FWL, NESW

APPLICANT: Williams Production RMT Company (“Williams”)

DESCRIPTION OF THE PROPOSED ACTION AND NO ACTION ALTERNATIVE

Proposed Action: The proposed action is to drill and develop eight Federal wells from one new pad located on private surface (Figures 1 and 2). These wells would be drilled from the private surface location using directional drilling equipment into underlying Federal mineral estate. A Surface Use Agreement (SUA) with the private landowner is in place.

The pad would be approximately 500 feet x 300 feet and its construction would disturb approximately 4.8 acres. Maximum cut on the pad would be 23.8 feet and the maximum fill would be 12.7 feet.

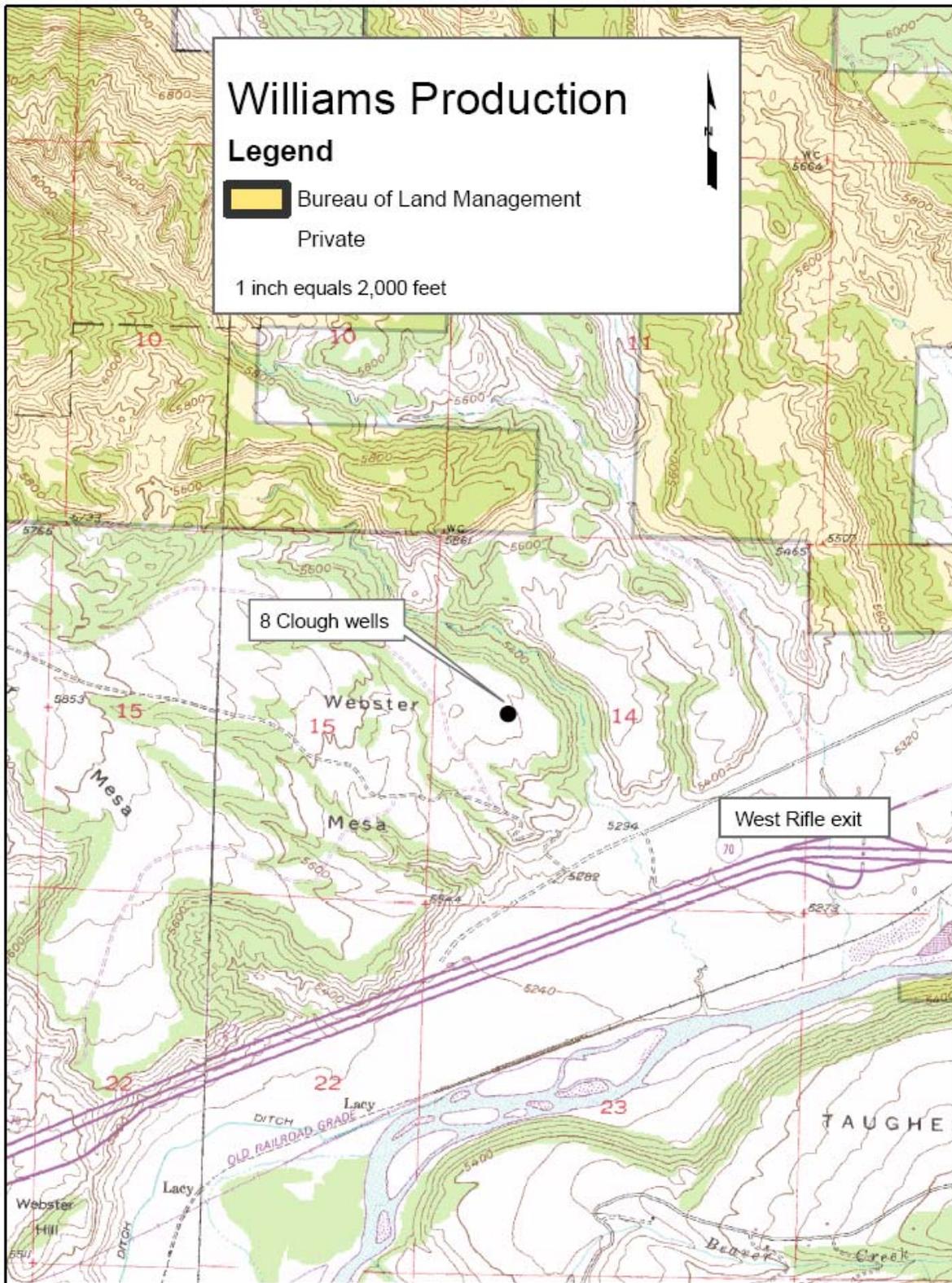


Figure 1. Location of the Proposed Action.

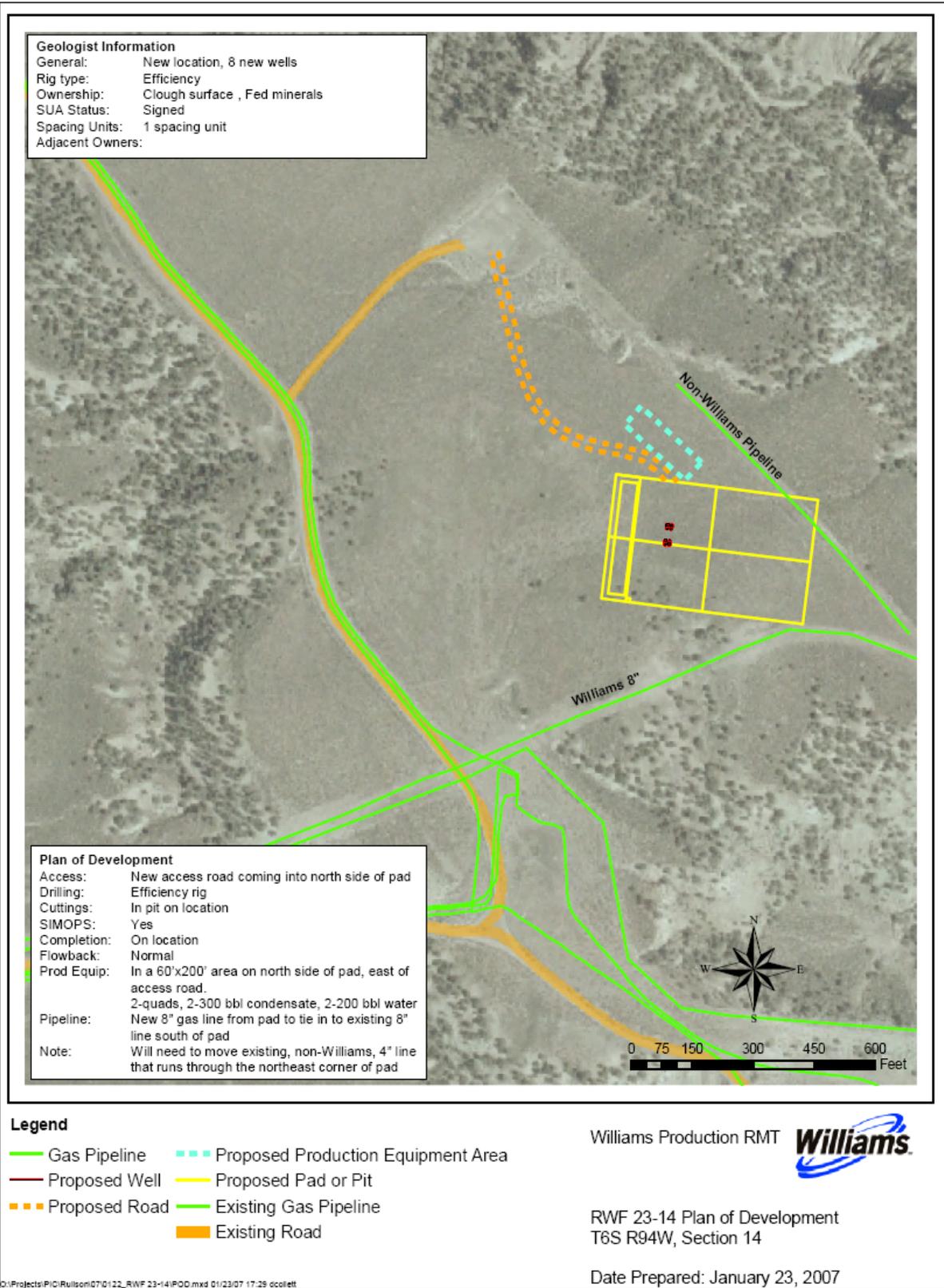


Figure 2. Details of the Proposed Action.

Production equipment would be placed in a 200-foot x 60-foot area at the northern edge of the proposed pad. Preparation of this area would disturb approximately 0.3 acres.

To accommodate access to the proposed pad, approximately 770 feet of new road is also proposed. The road would begin at an existing pad to the northwest and run to the northwestern corner of the proposed pad. The road would have a running surface of 20 feet and would be constructed using standard equipment and techniques approved by the BLM. Construction of the road would disturb approximately 0.35 acres.

A new 8-inch pipeline would run from the proposed pad and tie into an existing 8-inch line just to the south of the proposed pad. The installation of the pipeline would not result in additional ground disturbance beyond what would be required to construct the pad.

The proposed action also includes drilling and completion operations, production of natural gas, and intermediate and final reclamation measures. Completion operations would occur on location.

The Williams Master Application for Permit to Drill (APD) would be applicable to all proposed Federal wells. The Master APD includes a drilling program and a multi-point surface use and operations plan that describe further details of well pad construction and interim reclamation.

The proposed action would be implemented consistent with Federal oil and gas lease COC-2799, Federal regulations (43 CFR 3100), and the operational measures included in the APDs or attached to the APDs as Conditions of Approval (COAs). The COAs to be applied to this project are presented in Appendix A.

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

In accordance with Council on Environmental Quality (CEQ) regulations, the impacts of this alternative are evaluated to provide a base to compare impacts associated with the proposed action. For the purpose of the following comparative analysis, none of the proposed development activities presented under the proposed action would occur under this alternative.

PURPOSE AND NEED FOR THE ACTION: The purpose of the action is to develop oil and gas resources on Federal Lease COC-2799 consistent with existing Federal lease rights. The action is needed to increase the development of oil and gas resources for commercial marketing to the public.

SUMMARY OF LEASE STIPULATIONS: Federal Lease COC-2799, issued in 1976, carries no special stipulations.

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

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

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

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

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

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

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

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

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

A variety of laws, regulations, and policy directives mandate the evaluation of the effects of a proposed action and alternative(s) on certain critical environmental elements. Not all of the critical elements that require inclusion in this EA are present, or if they are present, may not be affected by the proposed action and alternative (Table 2). Only those mandatory critical elements that are present and affected are described in the following narrative.

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

Critical Elements

Air Quality

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

Proposed Action:

Environmental Consequences: The Roan Plateau RMPA and EIS describes potential effects from oil and gas development (BLM 2006:4-26 - 4-37). Analysis was completed with regard to greenhouse gas emissions, a near-field and far-field analysis for carbon monoxide, particulate matter (PM₁₀ and PM_{2.5}), sulfur dioxide, hazardous air pollutants including: benzene, ethylbenzene, formaldehyde, hydrogen

Table 2. Critical Elements of the Human Environment									
Critical Element	Present		Affected		Critical Element	Present		Affected	
	Yes	No	Yes	No		Yes	No	Yes	No
Air Quality	X		X		Prime or Unique Farmlands		X		X
ACECs		X		X	Special Status Species*		X		X
Cultural Resources		X		X	Wastes, Hazardous or Solid	X		X	
Environmental Justice	X			X	Water Quality, Surface and Ground*	X			X
Floodplains		X		X	Wetlands and Riparian Zones*		X		X
Invasive, Non-native Species	X		X		Wild and Scenic Rivers		X		X
Migratory Birds	X		X		Wilderness/ WSAs		X		X
Native American Religious Concerns		X		X					

* Public Land Health Standard

sulfide, toluene, and xylenes. Sulfur and nitrogen deposition analysis, acid neutralizing capacity, and visibility screening-level analysis were also completed in the Roan Plateau RMPA and EIS. Findings indicate that no adverse long-term effects would result under that plan. Since the proposed action is within the scope of the reasonable foreseeable development (RFD) scenario analyzed in that document, it is anticipated that the proposed action would be unlikely to have adverse effects on air quality.

Activities described in the proposed action would result in localized short-term increases in vehicle and equipment emissions. Concentrations of emissions would be below applicable ambient air quality standards as analyzed in the Roan Plateau RMPA & EIS. However, it is anticipated that construction and production activities would likely produce high levels of dust in dry conditions without dust abatement.

To mitigate dust generated by these activities, the operator would be required to implement dust abatement strategies as needed by watering the access road and construction areas and/or by applying a surfactant approved by the Authorized Officer (Appendix A, Number 2).

No Action Alternative:

Environmental Consequences: The no action alternative would not result in additional emissions and would have no affect on air quality.

Cultural Resources

Affected Environment: A Class III cultural resource inventory (GSFO #1107-14) was conducted of the Clough Block Area (which contains the proposed project area) by Grand River Institute of Grand Junction, Colorado. Seven additional inventories were previously performed within or near the project vicinity (GSFO #179, 810, 886, 9801-1, and 1107-3). No properties were identified that are eligible for listing on the National Register of Historic Places. Therefore, no formal consultation with the Colorado State Historic Preservation Officer (SHPO) was needed and a determination of “**No Historic Properties Affected**” was made in accordance with the National Historic Preservation Act (16U.S.C 470f), National BLM/SHPO Programmatic Agreement (1997), and Colorado Protocol (1998).

Proposed Action:

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

A standard Education/Discovery Condition of Approval (COA) for cultural resource protection would be attached to the APDs (Appendix A, Number 3). The importance of this COA should be stressed to Williams and its contractors, including informing them of their responsibilities to protect and report any cultural resources encountered on public land during drilling and development operations.

No Action Alternative:

Environmental Consequences: The no action alternative would not include the Education/Discovery COA designed to protect cultural resources. The lack of this mitigating measure could lead to illegal collection and excavation or vandalism.

Invasive, Non-native Species

Affected Environment: The pad lies within a Wyoming big sagebrush community with scattered greasewood. Two invasive non-native annual forbs, Russian-thistle and kochia, occur along the existing road in the vicinity of the proposed pad. Cheatgrass, an invasive non-native annual grass, is the prevalent understory species throughout the project area.

Proposed Action:

Environmental Consequences: Surface-disturbing activities create conditions favorable for the invasion and establishment of noxious weeds and other invasive non-native species, particularly when these species are already present in the surrounding area. Since cheatgrass, kochia and Russian-thistle are present in the vicinity of the proposed pad and access road, the potential for weed invasion following construction is extremely high. Mitigation measures designed to minimize the spread of invasive, non-native species are presented in Appendix A (Number 4).

No Action Alternative:

Environmental Consequences: Under the no action alternative, no construction or development activities would take place; therefore, new or expanded infestations of invasive, non-native species would not be expected.

Migratory Birds

Affected Environment: The pad, road, and pipeline are located on the edge of a small, sagebrush-covered mesa. Widely scattered pinyon and juniper are found nearby. The area provides cover, forage, and nesting habitat for a variety of migratory birds. However, the habitat in the area is highly fragmented and few obligates of either sagebrush or pinyon-juniper are likely to occur.

No species included on the U. S. Fish and Wildlife Service Birds of Conservation Concern (BCC) (USFWS 2002) are likely to breed in the vicinity of the pad. However, pinyon jays were observed during surveys for this and two other nearby pads in late September 2006. Pinyon jays likely use the general

area for foraging habitat during this time of year. Other more common migratory birds may use the area for nesting and foraging.

No raptor nests are known to occur in the immediate vicinity of the proposed well pad, road, or pipeline. However, golden eagles and red-tailed hawks are known to nest in the area. In 2006, an active red-tailed hawk nest was identified approximately 0.35 mile from the proposed pad.

Proposed Action:

Environmental Consequences: The proposed action would involve the initial removal of approximately 5.45 acres of Wyoming big sagebrush habitat and would result in a loss of nesting, breeding, perching, and foraging habitat for migratory birds. The loss of vegetation would result in further fragmentation of the local habitat, leading to additional reductions in habitat patch size. Species most sensitive to fragmentation would likely avoid the area. Portions of the disturbed acreage would be reclaimed which would reduce, but not eliminate, long-term habitat loss.

If the removal of vegetation occurs during the March 15 to August 15 nesting period, direct take of active nests could occur. Indirect take of nearby nests could also occur as a result of disturbance. Reactions to disturbance can vary from subtle physiological changes undetectable to human observers to aggressive defensive behavior. Disturbance may cause some birds to spend less time at the nest, leaving chicks vulnerable to overheating, chilling, predation, or starvation.

The construction of a reserve pit on the proposed pad may be expected to attract waterfowl and other migratory birds for purposes of resting, foraging, or as a source of free water. Effects to birds contacting this water could vary by species and range from no discernible effect to mortality. The extent and nature of the problem is not well-defined, but management measures should be aimed at preventing bird contact with produced water and drilling and completion fluids that may pose a problem (e.g., acute or chronic toxicity, compromised insulation) (Appendix A, Number 5).

Based on distance, vegetation, and topography, it is unlikely that the known raptor nest would be affected by the proposed project activities. Therefore, no conservation measures in relation to this nest are recommended. However, new raptor surveys may be required under certain circumstances (Appendix A, Number 6). Upland foraging habitat for raptors is abundant in the area and the proposed action should not impact raptor foraging behavior.

Nesting habitat for pinyon jays is not present near the project area and, therefore, the proposed action would not affect the nesting behavior of this species. Flocks of foraging jays may avoid the area temporarily during construction as a result of noise and human activity, but are unlikely to be negatively affected because of the abundance of preferred foraging habitat in the area.

No Action Alternative:

Environmental Consequences: Under the no action alternative, natural gas development would not occur and the local habitat would not be further fragmented. Disturbance-related effects to birds would not occur, and there would be no potential for “take” under the Migratory Bird Treaty Act.

Native American Religious Concerns

Affected Environment: At present, no Native American concerns are known within the project area, and none were identified during the cultural resource records search or inventory. The Ute Tribes claim the

area as part of their ancestral homeland. If new data are disclosed by the Ute Tribes, new terms and conditions may have to be negotiated to accommodate their concerns

Proposed Action:

Environmental Consequences: A standard Education/Discovery COA for the protection of Native American values would be attached to the APDs (Appendix A, Number 3). The importance of this COA should be stressed to Williams and its contractors, including informing them of their responsibilities to protect and report any cultural resources encountered on public land during development operations.

No Action Alternative:

Environmental Consequences: The no action alternative would not include the Education/Discovery COA designed to protect resources of Native American Religious Concern. The lack of these mitigating measures could lead to illegal collection, illegal excavation, or vandalism.

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

Affected Environment The USFWS list of endangered species for Garfield County (<http://mountain-prairie.fws.gov/endspp/CountyLists/COLORADO.htm>) identifies the following federally listed, proposed, or candidate species that may occur within the project area or could be impacted by the proposed action: Canada lynx (*Lynx canadensis*), bald eagle (*Haliaeetus leucocephalus*), Mexican spotted owl (*Strix occidentalis*), yellow-billed cuckoo (*Coccyzus americanus*), razorback sucker (*Xyrauchen texanus*), Colorado pikeminnow (*Ptychocheilus lucius*), bonytail chub (*Gila elegans*), humpback chub (*Gila cypha*), Uinta Basin hookless cactus (*Sclerocactus glaucus*), Parachute beardtongue (*Penstemon debilis*), and DeBeque phacelia (*Phacelia submutica*).

Field visits to assess suitable habitat for special status plant and wildlife species were conducted in September 2006 by WestWater Engineering. According to WestWater, Wyoming big sagebrush communities do not provide suitable habitat for any special status plant species found within the area administered by the Glenwood Springs Field Office.

Of the Federally listed, proposed, or candidate wildlife species listed above, habitat is present near the project area for the threatened bald eagle and two endangered fishes, the Colorado pikeminnow and razorback sucker. Winter habitat and potential nesting habitat for the bald eagle is present in the Colorado River corridor, while the Colorado River and 100-year floodplain are Designated Critical Habitat for the two endangered fishes.

BLM sensitive wildlife species with habitat and/or occurrence records in the area include the milk snake (*Lampropeltis triangulum taylori*), midget faded rattlesnake (*Crotalus viridis concolor*), Great Basin spadefoot (*Spea intermontana*), flannelmouth sucker (*Catostomus latipinnis*), bluehead sucker (*Catostomus discobolus*), and roundtail chub (*Gila robusta*). The milk snake is potentially present in riparian and floodplain habitats, the midget faded rattlesnake could be present in rocky uplands, and the Great Basin spadefoot may be present within or near seasonal surface waters. The three native fish species are known to inhabit the Colorado River near the project area.

Proposed Action:

Environmental Consequences: Since special status plants or suitable habitat are not present in the project vicinity, the proposed action would have no impact on these species. The pad, road, and pipeline are

located more than 0.5 mile from bald eagle winter and nesting habitat. Therefore, it has been determined that the proposed developments associated with this action would have “**No Effect**” on bald eagles.

The proposed action would occur in habitats of the milk snake, the midget faded rattlesnake, and the Great Basin spadefoot. Direct effects on these species could include injury or mortality as a result of construction, production, and maintenance activities. These effects would be most likely during the active season for these species, which are April to October for the milk snake, March to October for the midget faded rattlesnake, and May through September for the Great Basin spadefoot. Indirect effects to the milk snake and midget faded rattlesnake could include a greater susceptibility to predation if the road or pad is used to aid in temperature regulation. Overall, there is a low likelihood that these species would be affected.

Construction of the road and pad would increase the potential for soil erosion and sedimentation. Although a minor, temporary increase in sediment transport to the Colorado River may occur, it is not likely that the increase would be detectable above current background levels. In any case, all of the special status fish species associated the Colorado River are adapted to naturally high sediment loads. Therefore, the proposed action would have “**No Effect**” on the Colorado pikeminnow or razorback sucker.

Since the flannelmouth sucker, bluehead sucker, and roundtail chub have similar habitat requirements and are similarly adapted to high sediment loads, the proposed action would also not be expected to adversely affect these special status species. Mitigation measures presented in Appendix A (Numbers 7 and 8) would be implemented to minimize sedimentation.

No Action Alternative:

Environmental Consequences: Under the no action alternative, natural gas development would not occur and no impacts to special status species are anticipated.

Analysis on the Public Land Health Standard for Special Status Species: According to a recent land health assessment, habitat conditions within this watershed appear suitable for special status animal species known or likely to occur there (BLM 2005). However, large portions of the landscape are being fragmented due to extensive natural gas development. Continued habitat fragmentation is of concern, because large blocks of contiguous intact habitat are required by many species. Sustained development and the proliferation of roads, well pads, pipelines, compressor stations, tank farms, and other surface facilities will continue to reduce habitat patch size and affect both habitat quality and quantity. The potential to impact some species would increase as development continues. The proposed action in conjunction with similar activities throughout this watershed would increase fragmentation and could increase sediment loads. Although the contribution of the proposed action would be minimal, it may further trend the area away from meeting Standard 4 for special status wildlife.

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

The no action alternative would not result in a failure of the area to achieve Standard 4 for special status plant and animal species, because the proposed developments would not occur.

Wastes, Hazardous or Solid

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

Proposed Action:

Environmental Consequences: A variety of materials, including lubricants, treatment chemicals, gasoline, oil, and diesel fuel, would be used in the development activities. Potentially harmful substances used in the construction and operation would be kept onsite in limited quantities and trucked to and from the site as required.

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

No Action Alternative:

Environmental Consequences: Under the no action alternative, no development activities would occur and no potentially hazardous substances associated with development would be present in the area.

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

Surface Water

Affected Environment: The proposed well pad and access road would be located within a 24,411 acre unnamed sub-watershed located north of I-70 and the Colorado River and between the Town of Parachute and the City of Rifle. Approximately 650 feet northeast of the proposed pad is an unnamed ephemeral drainage that is directly tributary to the Colorado River.

According to the *Stream Classifications and Water Quality Standards* (Colorado Department of Health and Environment [CDPHE], Water Quality Control Commission [WQCC], Regulation No. 37), the unnamed ephemeral drainage is within the Lower Colorado River Basin segment 4a that includes all tributaries to the Colorado River from the confluence with the Roaring Fork River to a point immediately below the confluence with Parachute Creek. This segment has been classified aquatic life cold 2, recreation 2, water supply, and agriculture. Aquatic life cold 2 indicates that this water course is not capable of sustaining a wide variety of coldwater or warmwater 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. This segment is, however, suitable or intended to become suitable for potable water supplies and agricultural purposes that include irrigation and livestock use. At this time, no water quality data are available for this unnamed ephemeral drainage.

The State of Colorado has developed a *303(d) List of Water Quality Limited Segments Requiring TMDLS* (CDPHE, WQCC, Regulation No. 93) that identifies stream segments that are not currently meeting water quality standards with technology based controls alone. The unnamed ephemeral drainage is within the Lower Colorado River Basin segment COLCLC04a that includes tributaries to the Colorado River from the Roaring Fork to Parachute Creek. This segment is listed as impaired due to selenium and has been given medium priority by the State of Colorado. However, this drainage is not currently listed on the *Monitoring and Evaluation List* (CDPHE, WQCC, Regulation No. 94) as a water body suspected to have water quality problems.

Waters of the U.S.

An evaluation of the hydrology of the proposed action area indicates that no wetlands and other waters of the U.S. are present. Under the protocol established by the BLM and U.S. Army Corps of Engineers (USACE), the absence of potentially jurisdictional waters means that no permit pursuant to Section 404 of the Clean Water Act is required. An offsite drainage northeast of the proposed action area is jurisdictional, however, current project plans indicate that it would not be subject to direct or indirect impacts and therefore would also not require a Section 404 permit. However, a Condition of Approval (COA) attached to any drilling permits issued by the BLM will require authorization by USACE if development plans would result in the placement of fill or other direct impact to the offsite channel or any associated wetlands (Appendix A, Number 9).

Proposed Action:

Environmental Consequences: Proposed activities would temporarily remove soil and vegetation resulting in an increase in erosion potential and offsite sedimentation. Sidecasting could occur during construction and maintenance activities that could result in sediment delivery to the nearby drainage. With measures to control runoff water in place, reestablishment of vegetation, and proper engineering of roads, the potential for sediment transport to the nearby drainage would be minimized. The mitigation measures presented in Appendix A (Numbers 7, 8, and 10) would be implemented to protect surface water.

No Action Alternative:

Environmental Consequences: This alternative would have no affect on surface water because development activities would not occur.

Groundwater

Affected Environment: The surficial formation within the proposed action area is the Wasatch Formation. Water wells in the area are relatively shallow with the nearest well being approximately 2,900 feet southeast of the proposed activities. The proposed well surface casing depths are adequate to protect area water wells from possible contamination from downhole fluids or from drilling fluids (Williams Production RMT 2006). The top of the cement in the production casing annular space must be 200 feet above the top of the Mesaverde Group for all the proposed wells. The 10-point drilling plan is adequate to protect downhole resources.

Proposed Action:

Environmental Consequences: With the use of practices presented in the Master APD (Williams Production RMT 2006), no adverse impacts to groundwater aquifers are anticipated to result from the proposed activities. A geologic and engineering review was performed on the 10-point drilling plan to ensure that the cementing and casing programs adequately protect the downhole resources. The surface casing must have cement behind pipe from the surface casing shoe to the surface.

No Action Alternative:

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

Analysis on the Public Land Health Standard for Water Quality: The proposed action with associated mitigation and the no action alternative are unlikely to prevent standard 5 for water quality from being met.

Other Affected Resources

In addition to the critical elements, the resources presented in Table 3 were considered for impact analysis relative to the proposed action and no action alternative. Resources that would be affected by the proposed action and no action alternative are discussed below.

Table 3. Other Resources Considered in the Analysis.			
<i>Resource</i>	<i>NA or Not Present</i>	<i>Present and Not Affected</i>	<i>Present and Affected</i>
Access and Transportation			X
Cadastral Survey	X		
Fire/Fuels Management		X	
Forest Management	X		
Geology and Minerals			X
Law Enforcement	X		
Paleontology		X	
Noise			X
Realty Authorizations			X
Recreation			X
Socio-Economics			X
Soils			X
Vegetation			X
Visual Resources			X
Wildlife, Aquatic			X
Wildlife, Terrestrial			X

Access and Transportation

Affected Environment: Primary access to the proposed well pad would be from I-70 at the West Rifle exit. A frontage road and two graveled roads provide secondary access to the project area. In order to support the development of the new pad, approximately 770 feet of new road is proposed. Traffic in this area is heavy at present due to gas field-related construction and drilling activity.

Proposed Action:

Environmental Consequences: The proposed action would result in a future increase in truck traffic. The largest increase would be during rig-up, drilling, and completion activities. Data indicate that approximately 1,160 truck trips over a 30-day period would be required to support the drilling and completion of each well (Table 4). Extended across the development of eight wells, approximately 9,280 trips, primary by pickups and 6-and 10-wheeled trucks, would be required over a 240-day period.

Table 4. Traffic Associated with Drilling and Completion Activities.		
Vehicle Class	Number of trips per well	Percentage of total
16-wheel tractor trailers	88	7.6%
10-wheel trucks	216	18.6%
6-wheel trucks	452	39.0%
Pickup trucks	404	34.8%
Total	1,160	100.0%
BLM 2006 Note: trips by different vehicle types are not necessarily distributed evenly during the drilling process. Drilling and completion period is approximately 30 days.		

Once the wells are producing, the volume of traffic would increase dramatically. During the operations phase of the project, traffic would be limited to weekly visits to the well pad for inspection and maintenance. Each well may have to be recompleted once per year, requiring three to five truck trips per day for approximately seven days.

Slight increases in traffic volume would occur on I-70 and large increases would occur on the secondary access routes. Public access to the area would not be affected by these increases since the public has no legal access. Degradation of the secondary access roads may occur due to heavy equipment travel and fugitive dust and noise would be created.

No Action Alternative:

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

Geology and Minerals

Affected Environment: The proposed action would involve drilling eight Federal wells from one new surface location. These wells would penetrate the Wasatch and Williams Fork Formations. In these wells, conventional sands would be explored for possible economic gas recovery in the underlying Mesaverde Group. The casing and cementing programs are adequate to protect downhole resources. Coals would be encountered from approximately 7,285 to 7,340 feet (True Vertical Distance or TVD) and would be found in the lower Williams Fork Formation for all wells drilled on the proposed wellpad. There mineable value is low. Nonetheless, the above identified seams would be isolated by the proposed casing and cementing program.

Proposed Action:

Environmental Consequences: All coal seams and fresh water zones would be protected with casing and cement. Production casing cement must fill up the annular space to a depth of at least 200 feet above the

top of the Mesaverde Group. With the implementation of these protective measures, the proposed action is not likely to affect geologic and mineral resources.

No Action Alternative:

Environmental Consequences: The no action alternative would have no effect on geology and mineral resources.

Noise

Affected Environment: The proposed wells would be located approximately 1 mile northwest of the West Rifle exit of I-70. Noise in this area is presently created by various types of traffic on I-70 and by oil and gas development activities and associated truck traffic.

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

Table 5. Noise Levels Associated with Oil and Gas Production and Development.	
<i>Source</i>	<i>Reported Noise Level</i>
Typical compressor station	50 dB(A) (375 feet from property boundary)
Pumping units	50 dB(A) (325 feet from well pad)
Fuel and water trucks	68 dB(A) (500 feet from source)
Crane for hoisting rigs	68 dB(A) (500 feet from source)
Concrete pump used during drilling	62 dB(A) (500 feet from source)
Average well construction site	65 dB(A) (500 feet from source)
La Plata County (2002)	

Proposed Action:

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

Noise impacts from drilling and completion activities would occur 24 hours a day. Based on a measured noise level of 68 dB(A) at 500 feet, actions associated with drilling and completion would generate approximately 55 dB(A) at 1,000 feet. This level of noise approximates that associated with light industrial activities (EPA 1974).

Traffic noise levels would also be elevated as a consequence of the proposed action. The greatest increase would be along secondary access roads during the drilling and completion phases. Based on the La Plata County data presented in Table 5, approximately 68 dB(A) of noise (at 500 feet) would be created by each fuel and water truck that travels these roads. Less noise would be created by smaller trucks, such as pickups. Although the duration of increased noise from this source would be short, it would occur repeatedly during the drilling and completion phases.

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

Although noise would be much greater than background levels, especially during drilling and completion, the impact to the public would be minor because there are no residential, commercial, or ranching activities in the area.

No Action Alternative:

Environmental Consequences: Since there would no development under this alternative, noise levels would not increase.

Paleontology

Affected Environment: Surficial geology consists of the Wasatch Formation of Paleocene age. The Wasatch is a Class 1 formation, with areas known or likely to produce abundant scientifically important fossils. The Wasatch Formation may contain early horses, rare primates, rhinoceroses, birds, crocodiles, rodents, fish, turtles, freshwater clams, snails, and plants. There is an identified paleontological site located approximately 1,275 feet to the east of the proposed activities.

Proposed Action:

Environmental Consequences: Any new disturbance associated with constructing the new access road and wellpad could result in the uncovering or destruction of paleontological resources. However, the proposed wellpad and access road occur on flat topography comprised primarily of sagebrush. Due to this setting, a survey will not be required prior to BLM authorization of the APDs. However, if any fossils are identified at anytime, the AO must be notified so the resource can be recorded, evaluated, stabilized, or mitigated. The standard paleontology condition of approval shall be applied to the APDs (Appendix A, Number 11).

No Action Alternative:

Environmental Consequences: The no action alternative would have no effect on paleontological resources.

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

Affected Environment: The proposed well pad and access road would be located on the soil map unit Potts loam (USDA 1985). This deep, well-drained soil is found on mesas, benches, and the sides of valleys at elevations ranging from 5,000 to 7,000 feet and on slopes of 6 to 12 percent. Parent material for this soil includes sandstone, shale, and basalt. Surface runoff for this soil is medium and the erosion hazard is severe. Primary uses for this soil include grazing, wildlife habitat, and dryland farming.

Proposed Action:

Environmental Consequences: Some soil loss, loss of soil productivity, and an increase in sediment available for transport would result from construction and maintenance activities. Due to the severe erosion hazard of area soils, mitigation measures would be implemented to minimize potential impacts associated with soil loss and transport (Appendix A, Numbers 7 and 8).

No Action Alternative:

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

Analysis on the Public Land Health Standard for Upland Soils: Neither the proposed action with associated mitigation nor the no action alternative is likely prevent standard 1 from being achieved.

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

Affected Environment: The proposed pad lies within a Wyoming big sagebrush community with scattered greasewood. Cheatgrass is the dominant understory species. Native grasses such as alkali sacaton, Sandberg bluegrass, and galleta grass are also present.

Proposed Action:

Environmental Consequences: The proposed developments would result in approximately 5.45 acres of new ground disturbance. In order to accommodate access to the wells (if production occurs), about half of the disturbance would not be reclaimed during the life of the wells. With implementation of reclamation practices identified in Appendix A (Number 8), establishment of desirable herbaceous vegetation on the unused portions of the pad 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 periodic workovers and the potential for additional well bores in the future, it is likely that vegetation would remain in an early seral stage for the life of the wells.

No Action Alternative:

Environmental Consequences: Under the no action alternative, no drilling activities or pad and access road construction would take place; therefore, there would be no impacts to vegetation.

Analysis on the Public Land Health Standard for Plant and Animal Communities (partial, see also **Wildlife, Aquatic and Wildlife, Terrestrial**): Problems related to plants in the Rifle West watershed includes the widespread invasion of cheatgrass with a corresponding loss of other functional groups such as perennial native grasses and forbs (BLM 2005). In addition, sagebrush communities are dominated by old, decadent sagebrush with poor recruitment. The surface disturbance associated with the proposed action has the potential to encourage expansion and dominance of the site by cheatgrass. Appendix A 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.

The no action alternative would have no bearing on the ability of the area to meet the public land health standard for plant and animal communities.

Visual Resources

Affected Environment: The proposed action would be located on private property within an area classified as VRM Class IV (BLM 1984). The objective of this classification is to provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. Management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating basic landscape elements.

The protection of VRM classes, landscape character, and scenic quality on private and split-estate lands is discussed in the FSEIS (BLM 1999b:3-41 to 3-45). The impacts of development are also described (BLM 1999b:4-49-54).

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 protected only at landowner discretion.

Proposed Action:

Environmental Consequences: The proposed action is contributing to long-term visual modifications within the foreground landscape viewed from I-70. The proposed pad was rotated and facilities locations were adjusted in an effort to minimize contrasts. However, the overall landscape continues to take on a more industrialized character, especially on private property between Rifle and Parachute. Contrasts to color, line, form and texture are evident throughout this area. Planned reclamation work with seeded shrub and grass species would reduce the contrast after two to three growing seasons. After construction and reclamation, long term impacts are still expected due to the presence of facilities and the road. Reductions in the long-term impact would be realized by painting production facilities a non-reflective environmental color (Appendix A, Number 12). VRM Class IV objectives would be met as this class allows for this level of modification.

No Action Alternative:

Environmental Consequences: No new impacts to visual values along the I-70 viewshed would result from this alternative.

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

Affected Environment: The well pad and road would be placed near an ephemeral drainage that feeds the Colorado River approximately 1 mile to the south. In addition to the special status fish already addressed, the Colorado River contains a variety of other fishes, including trout, and a variety of aquatic invertebrates.

Proposed Action:

Environmental Consequences: Proposed development activities would increase site-specific erosion and sedimentation due to soil exposure. This increase would persist until such time as adequate vegetation establishment is attained on reclaimed portions of disturbed areas. The new road segment would increase the long-term risk of erosion and sedimentation. Sediment-intolerant fish species such as trout could be

negatively impacted due to silting of important spawning substrates, which reduces egg survival due to reduced oxygen and reduced water quality.

In addition, aquatic invertebrate productivity and diversity may decline due to water quality changes and silting of stream substrates. This directly affects aquatic insects while indirectly affecting the fish that prey on this important food source. The small amount of sediment that would ultimately reach the Colorado River should have minimal impact on fisheries, because sediment levels are projected to be well within the background levels for the Colorado River. Minor increases in sediment produced from the action would be undetectable. However, as similar oil and gas development activity continues within the Colorado River, increases in sediment may have a greater impact on sediment-intolerant aquatic species. To minimize impacts to downstream fishes and aquatic invertebrates, the mitigation measures presented in Appendix A (Numbers 7 and 8) are required.

No Action Alternative:

Environmental Consequences: Since natural gas development would not occur, no impacts to aquatic wildlife are anticipated.

Analysis on the Public Land Health Standard 3 for Plant and Animal Communities (partial, see also **Vegetation and Wildlife, Terrestrial**): The proposed action and no action alternative should result in minimal impacts to aquatic wildlife and would have little bearing on the ability to maintain or meet Standard 3.

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

Affected Environment: The pad, road, and pipeline are located on the edge of a small, sagebrush covered mesa. Scattered pinyon and juniper are found nearby. The area around the pad provides cover, forage, and nesting habitat for a variety of big game and small game, as well as nongame mammals, birds, and reptiles. The pad, road, and pipeline location would be within mule deer winter range and severe winter range. The project area does not carry those designations for elk but is within a half mile of elk winter range south of the Colorado River (CDOW 2006).

Proposed Action:

Environmental Consequences: Impacts to terrestrial wildlife would include, but are not limited to, displacement into less suitable habitat, increased stress, and habitat loss. These impacts are more substantial during critical seasons, such as winter or during reproduction.

The proposed action would result in the direct loss of approximately 5.45 acres of terrestrial wildlife habitat, while a larger area would be indirectly affected. Indirect impacts to wildlife habitat may occur if increased human activity (e.g., traffic, noise) associated with infrastructure displace animals or alter their habitat use patterns.

The surface location of proposed developments is on private land and the lease under which minerals rights are held (COC-2799) does not contain a big game winter timing limitation. Because Federal wells would be developed from this surface location, the BLM would apply a 60-day timing limitation to protect wintering big game. The timing limitation, which would be included as a COA on the eight APDs, would prohibit development activities from February 1 to March 31 (Appendix A, Number 13).

No Action Alternative:

Environmental Consequences: Since oil and gas development would not occur, no impacts to terrestrial wildlife are anticipated.

Analysis on the Public Land Health Standard for plant and animal communities (partial, see also **Vegetation and Wildlife, Aquatic**): A recent study found that 38,373 acres of land within the Rifle West watershed were not meeting Standard 3 for some wildlife species, most notably mule deer (BLM 2005). Of this acreage, 12,549 acres are located on BLM land. The main problem with the watershed is large-scale habitat fragmentation due primarily to natural gas exploration and development. This physical loss of habitat is a problem with regard to the loss of forage and cover, and is exacerbated when combined with increasing human uses of the area.

Other factors contributing to the failure to achieve Standard 3 for wildlife include the encroachment of juniper into sagebrush habitats, a lack of forb production, poor condition of sagebrush, and poor understory conditions. Some individual sagebrush stands are hedged and some stands are decadent with poor age class diversity and limited regeneration or recruitment.

The proposed action would result in direct and indirect impacts to habitat, including further loss and fragmentation and increased human use of the area. Given the level of activity in the greater area, the proposed action may further trend the watershed away from meeting Standard 3 for some terrestrial wildlife species.

The no action alternative would have no bearing on Standard 3 for terrestrial wildlife species.

SUMMARY OF CUMULATIVE IMPACTS

The Draft and Final Roan Plateau Resource Management Plan Amendment & Environmental Impact Statements (BLM 2004, 2006) collectively analyzed six alternatives for oil and gas development in the Roan Plateau planning area. The assessment included an analysis of impacts of past, present, and reasonable foreseeable future actions, including predicted future oil and gas development, on both public and private lands. Since the Final Roan Plateau RMP Amendment and EIS presents a recent analysis of cumulative impacts in an area encompassing that of the proposed action, it is incorporated by reference.

Until relatively recently, modifications of the region have been characteristic of agricultural and ranching lands, with localized industrial impacts associated with the railroad and I-70 highway corridors and the Anvil Points mine. More recently, these changes are cumulative to the growth of residential and commercial uses, utility corridors, oil and gas developments, and other rural industrial uses. These increasing activity levels have accelerated the accumulation of impacts in the area. These impacts have included: 1) direct habitat losses, 2) habitat fragmentation and losses in habitat effectiveness, 3) elevated potential for runoff, erosion, and sedimentation, 4) expansion of noxious weeds and other invasive species, and 5) increased noise and traffic and reductions in the scenic quality of the area (BLM 2006: 4-1 to 4-129).

Although none of the cumulative impacts described in the Final Roan Plateau RMP Amendment and EIS were characterized as significant, and while new technologies and regulatory requirements have reduced the impacts of some land uses, it is nonetheless clear that past, present, and reasonably foreseeable future actions has had and would continue to have adverse affects on various elements of the human environment. The anticipated impact levels for existing and future actions range from negligible to locally major, and primarily negative, for specific resources. The primary reasons for this assessment are twofold: (1) the rate of development, particularly oil and gas development, is increasing in the area,

resulting in an accelerated accumulation of individually nominal effects; and (2) the majority of residential and commercial expansion, as well as oil and gas development, has occurred, and is likely to continue to occur, on private holdings where mitigation measures designed to protect and conserve resources are not in effect.

It is clear that the proposed action would contribute to the collective impact. Additional ground disturbance would occur, additional habitat would be lost, noise and traffic would increase, and additional oil-and gas-related developments would be visible. Therefore, the impacts of the proposed action would move the cumulative impact incrementally closer to a threshold of significance for some resources. However, the contribution to the accumulated effects would be minor because the scale of the proposed development is relatively small, multiple wells would be developed from a single pad, and mitigation measures represented by the conditions of approval for resource protection are mandated for implementation (Appendix A).

PERSONS AND AGENCIES CONSULTED:

U.S. Fish and Wildlife Service
Williams Production RMT Company

INTERDISCIPLINARY REVIEW:

<i>Name</i>	<i>Title</i>	<i>Responsibility</i>
Bill Barter	Natural Resource Specialist	Team Leader
Mark Ennes	Planning and Environmental Coordinator	Access and Transportation, Noise, NEPA compliance
John Brogan	Archaeologist	Cultural Resources, Native American Religious Concerns
Kay Hopkins	Outdoor Recreation Planner	Visual Resources, ACECs, WSRs
Jeff O’Connell	Hydrologist	Soil, Air, Water, Geology, Paleontology
Beth Brenneman	Ecologist	Vegetation, Special Status Species (plants), Invasive Non-native species
Jeff Cook	Wildlife Biologist	Terrestrial and Aquatic wildlife, Special Status Species (fish and wildlife), Migratory Birds
Harley Armstrong	Paleontologist	Paleontology
Isaac Pitman	Rangeland Specialist	Range management
Marty O’Mara	Petroleum Engineer	Downhole Conditions of Approval

REFERENCES:

Bureau of Land Management (BLM)
1984. *Glenwood Springs Resource Management Plan*. Glenwood Springs Field Office.

1991. *Record of Decision, Oil and Gas Plan Amendment to the Glenwood Springs Resource Management Plan*. Glenwood Springs Field Office.

1999a. *Oil and Gas Leasing and Development – Record of Decision and Resource Management Plan Amendment*. Glenwood Springs Field Office.

1999b. *Oil and Gas Leasing and Development – Final Supplemental Environmental Impact Statement*. Glenwood Springs Resource Area. Glenwood Spring Field Office.

2004. *Draft Roan Plateau Planning Area Resource Management Plan Amendment and Environmental Impact Statement*. Glenwood Springs Field Office.

2005. *Rifle-West Watershed Land Health Assessment*. Glenwood Springs Field Office.

2006. *Final Roan Plateau Planning Area Resource Management Plan Amendment and Environmental Impact Statement*. Glenwood Springs Field Office.

Colorado Division of Wildlife (CDOW)

2006. Elk and mule deer GIS data.

2005. Colorado Species Distribution – Bald Eagle. Seasonal Activity Area Definitions. Fort Collins, CO 80526.

Harris. C.M.

1991. *Handbook of Acoustical Measurements and Noise Control*, McGraw-Hill, Inc., New York, NY.

La Plata County, Colorado.

2002. Final La Plata County Impact Report. October.

U.S. Department of Agriculture (USDA)

1985. *Soil Survey of Rifle Area, Colorado: Parts of Garfield and Mesa Counties*. Soil Conservation Service [Natural Resources Conservation Service].

U.S. Environmental Protection Agency (EPA)

1974. Information on Noise Levels Identified as Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. EPA-550/9-74-004, Arlington, VA.

U.S. Fish and Wildlife Service (USFWS)

2002. *Birds of Conservation Concern*. Division of Migratory Bird Management, Arlington, Virginia. 99 pp. [Online version available at <http://migratorybirds.fws.gov/reports/bcc2002.pdf>].

Williams Production RMT Company

2006. Master APD – Standard Operating Procedures – Rulison Field Area E. Williams Production RMT Company, Garfield County, Colorado.

FONSI
CO140-2007-064 EA

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

DECISION RECORD

DECISION: It is my decision to approve the Applications for Permit to Drill (APDs) for wells RWF 13-14, RWF 23-14, RWF 313-14, RWF 323-14, RWF 413-14, RWF 423-14, RWF 513-14, RWF 523-14. This decision will provide for the orderly, economical, and environmentally sound exploration and development of oil and gas resources on valid oil and gas leases.

RATIONALE:

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

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

NAME OF PREPARER: Bill Barter, Natural Resource Specialist

SIGNATURE OF PLANNING AND ENVIRONMENTAL COORDINATOR:



Planning and Environmental Coordinator

3/27/07
Date

SIGNATURE OF AUTHORIZED OFFICIAL:



Authorized Officer

3/27/07
Date

APPENDIX A
SURFACE USE CONDITIONS OF APPROVAL

SURFACE USE CONDITIONS OF APPROVAL

CO-140-2007-064 EA

Proposed wells: RWF 13-14, RWF 23-14, RWF 313-14, RWF 323-14, RWF 413-14, RWF 423-14, RWF 513-14, and RWF 523-14.

1. Administrative Notification: At least 48 hours prior to construction, the operator shall notify the BLM representative of construction startup plans.
2. Dust Abatement. The operator shall implement 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.
3. Cultural Education/Discovery. All persons in the area who are associated with this project must be informed that if anyone is found disturbing historic, archaeological, or scientific resources, including collecting artifacts, the person or persons will be subject to prosecution.

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

If in connection with operations under this contract, the operator, its contractors or 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 ruins or prehistoric ruins, graves or grave markers, fossils, or artifacts, the operator shall immediately suspend all operations in the vicinity of the cultural or paleontological resource and shall notify the Authorized Officer of the findings (16 USC 470h-3, 36 CFR 800.112). Operations may resume at the discovery site upon receipt of written instructions and authorization by the Authorized Officer. Approval to proceed will be based upon evaluation of the resource. Evaluation shall be by a qualified professional selected by the Authorized Officer from a Federal agency insofar as practicable. When not practicable, the holder shall bear the cost of the services of a non-Federal professional.

Within five working days the Authorized Officer will inform the holder as to:

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

The operator may relocate activities to avoid the expense of mitigation and 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 operator shall be responsible for mitigation costs. The Authorized Officer will provide technical and procedural guidelines for relocation and/or to conduct

mitigation. Upon verification from the Authorized Officer that the required mitigation has been completed, the operator will be allowed to resume construction.

Antiquities, historic ruins, prehistoric ruins, and other cultural or paleontological objects of scientific interest that are outside the authorization boundaries but potentially affected, either directly or indirectly, by the proposed action shall also be included in this evaluation or mitigation. Impacts that occur to such resources as a result of the authorized activities shall be mitigated at the operator's cost, including the cost of consultation with Native American groups.

Any person who, without a permit, injures, destroys, excavates, appropriates or removes any historic or prehistoric ruin, artifact, object of antiquity, Native American remains, Native American cultural item or archaeological resources on public lands is subject to arrest and penalty of law (16 USC 433, 16 USC 470, 18 USC 641, 18 USC 1170, and 18 USC 1361).

4. Weed Control. The Operator shall regularly monitor and promptly control noxious weeds or other undesirable plants species as set forth in the Glenwood Springs Energy Office *Noxious and Invasive Weed Management Plan for Oil and Gas Operators*, dated March 2007. A Pesticide Use Proposal (PUP) must be approved by BLM prior to the use of herbicides.
5. Migratory Birds. It will be the responsibility of the operator to comply with the Migratory Bird Treaty Act with respect to “take” of migratory bird species. 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.
6. Raptors. To protect nesting raptors, additional raptor surveys shall be required if two years have lapsed between initial surveys and the commencement of new development activities or if changes to the location of planned infrastructure were made after initial surveys and the new location occurs outside the original survey area. All potential nesting habitat within 0.25 mile of these developments shall be surveyed and the results documented and submitted to the BLM Glenwood Springs Energy Office wildlife biologist. If an active raptor nest is located within 0.25 mile of the proposed activity, a 60-day timing limitation during the critical nesting period and/or relocation of the well pad/road/pipeline up to 200 meters may be required. In the event of an active raptor nest within 0.25 mile of the pad, the operator is advised to ensure compliance with the Migratory Bird Treaty Act by contacting Creed Clayton, U.S. Fish and Wildlife Service (USFWS), Glenwood Springs Energy Office at 970-947-5219 or at john_c_clayton@blm.gov and Jeff Cook, BLM, Glenwood Springs Energy Office at 970-947-5231 or at jeffrey_cook@blm.gov.
7. Road and Well Pad. Due to the severe erosion potential of area soils, the access road will be crowned, ditched, graveled, and include drainage features in accordance with BLM Gold Book standards. The well pad will be constructed to BLM Gold Book standards and include Best Management Practices (BMPs) designed to minimize erosion and offsite sedimentation. The road 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.
8. Reclamation. Refer to Appendix I (Surface Reclamation) of the 1998 Draft Supplemental EIS (DSEIS) for specific reclamation goals, objectives, timelines, measures, and monitoring methods. The measures described below shall be followed in completing the reclamation of disturbed surfaces on well pads, access roads, and pipelines.

- a. Seedbed Preparation. All slopes will be reshaped to 3:1 or flatter prior to seedbed preparation. Initial seedbed preparation shall consist of backfilling, leveling, and ripping all areas to be seeded to a minimum depth of 18 inches with a furrow spacing of 2 feet, followed by recontouring the surface and then spreading the stockpiled topsoil evenly. Prior to seeding, the seedbed shall be scarified and left with a rough surface. No depressions shall be left that would trap water and form ponds. Final seedbed preparation shall consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding.
- b. Seed Application. Seeding shall be conducted no more than 24 hours following completion of final seedbed preparation. A certified weed-free seed mix designed by BLM to meet interim reclamation standards is recommended; however, because the well pad is located on private surface, the private landowner would ultimately determine the seed mix to be used for reclamation. Revegetating the area will help prevent erosion and establishment of weeds and provide food and cover for wildlife. The following seed mix is recommended for use on all disturbed surfaces within the project area:

<i>Common Name</i>	<i>Variety</i>	<i>Percent</i>	<i>PLS lbs/acre</i>
Fourwing Saltbush	Rincon	7	3.7
Shadscale Saltbush		7	2.0
Wyoming Sagebrush	Hobble Creek	6	0.05
Western Wheatgrass	Arriba	18	3.0
Sandberg Bluegrass		19	0.4
Galleta	Viva florets	15	1.8
Alkali Sacaton	Salado	18	0.2
Scarlet Globemallow		10	0.4
Total		100	11.55

The application rate shown in the table is based on 45 pure live seeds (PLS) per square foot, drill-seeded to a depth of 0.25 to 0.5 inch, which is the method that shall be used where feasible. In areas that cannot be drill-seeded, the mix shall be broadcast-seeded at twice the application rate shown in the table and covered 0.25 to 0.5 inch deep with a harrow or drag bar.

Fall seeding shall be conducted after September 1 and prior to ground frost. Spring seeding shall be conducted after the frost leaves the ground and no later than April 15. If the seeding is unsuccessful, the operator shall make subsequent seedings until the reclamation objectives identified in Appendix I (Surface Reclamation) of the 1998 DSEIS are met.

- c. Erosion Control. Cut-and-fill slopes shall be protected against erosion with the use of water bars, lateral furrows, or other measures approved by the Authorized Officer. Weed-free straw bales, straw “wattles,” straw matting, or a well-anchored fabric silt fence shall be used on cuts and fill slopes and along drainages to protect against soil erosion. Additional BMPs shall be employed as necessary to ensure reduced offsite erosion and to protect drainages from sediment.
- d. Site Protection. The pad shall be fenced to BLM standards to exclude livestock grazing for the first two growing seasons or until seeded species become firmly established, whichever comes later. The seeded species will be considered firmly established when at least 50 percent of the new plants are producing seed. The Authorized Officer will approve the type of fencing.

- e. Monitoring. The operator shall conduct annual monitoring surveys of reclaimed areas and shall submit an annual monitoring report to the Authorized Officer by December 31 of each year. The monitoring program shall use the four Reclamation Categories defined in Appendix I of the 1998 DSEIS to assess progress toward reclamation objectives. The annual report shall document whether attainment of reclamation objectives appears likely. If one or more objectives appear unlikely to be achieved, the report shall identify appropriate corrective actions. Upon review and approval of the report by BLM, the operator shall be responsible for implementing the corrective actions or other measures specified by the Authorized Officer.
9. Waters of the U.S. In accordance with Section 404 of the Clean Water Act, it shall be the responsibility of the Operator to consult with the U.S. Army Corps of Engineers (contact Sue Nall, 970-243-1199 ext. 16, susan.nall@usace.army.mil) for authorization prior to discharging fill material (including construction of a culvert) into waters of the U.S., including wetlands and drainages. Waters of the U.S. are defined in 33 CFR 328.3 and may include ephemeral washes as well as perennial or intermittent streams. For further information, contact Jeff O'Connell, Hydrologist of the Glenwood Springs Energy Office, at 970-947-5215 or jeffrey_o'connell@blm.gov. Any culverted or other crossing of a drainage shall be installed during no-flow or low-flow conditions and shall be of a design and size adequate to convey a 25-year or greater storm event without detention. The 25-year storm event for the proposed action area is approximately 1.6 inches of precipitation in 6 hours.
10. Stormwater Discharge Permits. The operator shall consult with the State of Colorado Water Quality Control Division (contact Matt Czahor at: 303-692-3575 or matthew.czahor@state.co.us) regarding Stormwater Discharge Permits prior to commencing construction activities. All construction activities that disturb one acre or greater require a Stormwater Discharge Permit.
11. Paleontological Resources. All persons associated with operations under this authorization shall be informed that any objects or sites of paleontological or scientific value, such as vertebrate or scientifically important invertebrate fossils, shall not be damaged, destroyed, removed, moved or disturbed. If in connection with operations under this authorization any of the above resources are encountered the operator shall immediately suspend all activities in the immediate vicinity of the discovery that might further disturb such materials and notify the Authorized Officer of the findings. The discovery must be protected until notified to proceed by the Authorized Officer.

As feasible, the operator shall suspend ground-disturbing activities at the discovery site and immediately notify the Authorized Officer of any finds. The Authorized Officer will, as soon as feasible, have a BLM-permitted paleontologist check out the find and record and collect it if warranted. If ground-disturbing activities cannot be immediately suspended, the operator shall work around or set the discovery aside in a safe place to be accessed by the BLM-permitted paleontologist.
12. Visual Resources. All above-ground facilities associated with production and storage shall be painted the non-reflective environmental color, Desert Tan (10YR6/3).
13. Big Game Winter TL. No construction or completion activities shall occur during a 60-day Timing Limitation (TL) from January 1 to February 28 to reduce potential impacts on wintering big game.

APPENDIX B

DOWNHOLE CONDITIONS OF APPROVAL

DOWNHOLE CONDITIONS OF APPROVAL

APPLICATION FOR PERMIT TO DRILL

Company/Operator: **Williams Production RMT Company**

Surface Location: **NWSW Sec. 14, T. 6S., R. 94W.**

<i>Well Name</i>	<i>Well No.</i>	<i>Bottomhole Location</i>	<i>Lease</i>
Clough RWF	13-14	NWSW Sec. 14, T. 6S., R. 94W.	COC-2799
Clough RWF	23-14	NESW Sec. 14, T. 6S., R. 94W.	COC-2799
Clough RWF	313-14	NWSW Sec. 14, T. 6S., R. 94W.	COC-2799
Clough RWF	323-14	NESW Sec. 14, T. 6S., R. 94W.	COC-2799
Clough RWF	413-14	NWSW Sec. 14, T. 6S., R. 94W.	COC-2799
Clough RWF	423-14	NESW Sec. 14, T. 6S., R. 94W.	COC-2799
Clough RWF	513-14	NWSW Sec. 14, T. 6S., R. 94W.	COC-2799
Clough RWF	523-14	NESW Sec. 14, T. 6S., R. 94W.	COC-2799

Those Conditions of Approval identified in the Williams Production RMT Company Master APD (Approved April 27, 2006) for the Rulison Field Area E will apply.

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

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