

**U.S. Department of the Interior  
Bureau of Land Management  
Little Snake Field Office  
455 Emerson Street  
Craig, CO 81625-1129**

**ENVIRONMENTAL ASSESSMENT**

**EA-NUMBER:** DOI-BLM-CO-NO10-2010-0011-EA

**CASEFILE/PROJECT NUMBER/LEASE NUMBER:**

COD038749B: Powder Wash #7-1H, Pipeline ROW COC074343  
COCO4761A : BW Musser #34, Pipeline ROW COC074398  
COC47671A: Musser #30, Pipeline ROW COC074364  
COCO47671A: JC Donnell #20, Pipeline ROW COC074357  
COC47639A: Jacks Draw #18, Pipeline ROW COC074367  
COC47639A : Jacks Draw #19, Pipeline ROW COC074368  
COC47671A: BW Musser #35, Pipeline ROW COC074365

**PROJECT NAME:** Powder Wash and Jacks Draw Unit Wells

**LEGAL DESCRIPTION:** All seven wells in Moffat County, Colorado

Musser Well #30: NENE Section 4, T11N, R97W, 6<sup>th</sup> PM  
B.W. Musser Well #34: NWNE Section 5, T11N, R97W, 6<sup>th</sup> PM  
B.W. Musser Well #35: NWNE Section 5, T11N, R97W, 6<sup>th</sup> PM  
JC Donnell Well #20: NENW Section 6, T11N, R97W, 6<sup>th</sup> PM  
Jacks Draw #18: NENW Section 28, T12N, R97W, 6<sup>th</sup> PM  
Jacks Draw #19: SWSE Section 10, T11N, R97W, 6<sup>th</sup> PM  
Powder Wash #7-1H: SENE Section 7, T11N, R97W, 6<sup>th</sup> PM

**APPLICANT:** Wexpro Company

**PLAN CONFORMANCE REVIEW:** The proposed action is subject to the following plan:

Name of Plans: Little Snake Resource Management Plan and Record of Decision (ROD) approved on April 26, 1989; and the Colorado Oil and Gas Leasing & Development Environmental Impact Statement (EIS) and the ROD signed on November 5, 1991.

Remarks: The proposed Powder Wash Wells would be located within Management Unit 2 (Little Snake Resource Management Plan). One of the objectives of Management Unit 2 is to provide for the development of the oil and gas resource. The development of other resource uses/values within this unit is allowed consistent with the management objectives for oil, gas, and forest resources.

The proposed action has been reviewed for conformance with this plan (43 CFR 1610.5, BLM 1617.3). The proposed action is in conformance with the objectives for this management unit.

**NEED FOR PROPOSED ACTION:** To provide for the development of oil and gas resources and to supply energy resources to the American public.

**PUBLIC SCOPING PROCESS:** The Notices of Staking (NOSs) have been posted in the public room of the Little Snake Field Office for a 30-day public review period beginning September 23, 2009 when the NOSs were received, and may be viewed during regular business hours (7:45 a.m. to 4:30 p.m.), Monday through Friday, except holidays.

**DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:** The proposed action is to approve seven Applications for Permit to Drill (APD) submitted by Wexpro Company. Wexpro Company proposes to drill seven gas wells on BLM administered land located in the Powder Wash Field in T11N & T12N, R97W. APDs have been filed with the LSFO for: Powder Wash #7-1H, BW Musser #34, Musser#30, JC Donnell #20, Jacks Draw #18, Jacks Draw #19, and BW Musser #35. The APDs include drilling and surface use plans that cover mitigation of impacts to vegetation, soil, surface water, and other resources. Mitigation not incorporated by Wexpro Company in the drilling and surface use plans would be attached by the BLM as Conditions of Approval to an approved APD.

The proposed wells are located approximately 65 miles northwest of Craig, Colorado. Construction work is planned to start during the fall of 2010 and the estimated duration of construction and drilling for each of the wells is 20 days. Short access roads would be constructed for each well 6,540 feet of new access road would be constructed resulting in new surface disturbance of 3.5 acres. All road construction would be on lease and on BLM surface and would not require a federal Right-of-Way.

The proposed well pads would be cleared of all vegetation and leveled for drilling. Topsoil and native vegetation would be stockpiled for use in reclamation. All of the other wells will be drilled from single well pads. Approximately 32 acres would be disturbed for construction of the well pads. This would include the 350' by 400' well pad, the topsoil, and subsoil piles. A reserve pit would be constructed on each well pad to hold drill mud and cuttings. If a well is a producer, cut portions of the well site would be backfilled and unused portions of the well sites would be stabilized and re-vegetated. If a gas well proves unproductive, it would be properly plugged and the entire well pad and access road would be reclaimed.

Wexpro Company did include plans for a gas sales pipeline with each APD. Questar Gas Management Company will construct the pipelines as rights-of-way (ROW). Approximately

18,100 feet of new pipeline would be installed and connected to existing Questar pipelines in the Powder Wash Field to service the wells once production is established. The proposed pipelines parallel new or existing roads. Total surface disturbance associated with pipeline construction would be 12.5 acres. The pipeline ROWs would have a 50-ft construction width, reverting to 30 feet after interim reclamation. All pipeline construction would be on BLM surface.

Total surface disturbance for the proposed action would be 48 acres. Upon interim reclamation total surface disturbance would be 25 acres.

**NO ACTION ALTERNATIVE:** The “no action” alternative is that the wells would not be permitted and therefore no wells would be drilled. Wexpro Company holds a valid and current oil and gas lease for the area where the proposed nineteen Powder Wash Wells would be located. Under leasing contracts, the BLM has an obligation to allow mineral development if the environmental consequences are not irreversible or too severe. The APD process is designed to overcome the no action situation of not accepting the APDs through the mitigation of predicted environmental consequences. Since the proposed action is consistent with the ROD and the Oil and Gas Leasing EIS, the no action alternative will not be analyzed further in this EA.

## **AFFECTED ENVIRONMENT/ENVIRONMENTAL CONSEQUENCES/MITIGATION MEASURES**

### **CRITICAL RESOURCES**

#### **AIR QUALITY**

Affected Environment: There are no special designation air sheds or non-attainment areas nearby that would be affected by the proposed action.

Environmental Consequences: Short term, local impacts to air quality from dust would result during and after well pad construction. Drilling operations produce air emissions such as exhaust from diesel engines that power drilling equipment. Air pollutants could include nitrogen oxides, particulates, ozone, volatile organic compounds, fugitive natural gas, and carbon monoxide. Gas flaring reduces the health and safety risks in the vicinity of the well by burning combustible and poisonous gases like methane and hydrogen sulfide.

Mitigative Measures: None.

Name of specialist and date: Roy McKinstry 10/28/09

### **AREA OF CRITICAL ENVIRONMENTAL CONCERN**

Affected Environment: Not present.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Roy McKinstry 10/28/09

## CULTURAL RESOURCES

Affected Environment: Cultural resources, in this region of Colorado, range from late Paleo-Indian to Historic. For a general understanding of the cultural resources in this area of Colorado, see *An Overview of Prehistoric Cultural Resources, Little Snake Resource Area, Northwestern Colorado*, Bureau of Land Management Colorado, Cultural Resources Series, Number 20, *An Isolated Empire, A History of Northwestern Colorado*, Bureau of Land Management Colorado, Cultural Resource Series, Number 2 and *Colorado Prehistory: A Context for the Northern Colorado River Basin*, Colorado Council of Professional Archaeologists.

Environmental Consequences: Portions of the proposed project, Powder Wash and Jacks Draw Unit, **has not** undergone a Class III cultural resource survey for the following pipelines:

Powder Wash #7-1 H  
Jacks Draw #19 Pipeline

Most of the proposed project Powder Wash and Jacks Draw Unit, has undergone a Class III cultural resource survey for the following pipelines, wells, and access roads:

Darlington, David

2009 Class III Cultural Resource Inventory for the Wexpro Company Jacks Draw Unit 19. (BLM 12.1.2010)

Johnson, David

- 2009 Class III Cultural Resource Inventory and Testing Report for the Wexpro Company Jacks Draw Unit No. 18 Well Pad and Access Road, Moffat County, Colorado (12.38.09)
- 2009 Class III Cultural Resource Inventory and Testing Report for the Wexpro Corporation Donnell #20 Well Pad, Access Road (BLM 12.2.2010)
- 2009 Class III Cultural Resource Inventory and Testing Report for the Wexpro Corporation Musser #34 Well Pad, Access Road, Moffat County, Colorado (12.44.09)
- 2009 Class III Cultural Resource Inventory Report for the Wexpro Company Powder Wash 7-1 Well Pad and Access Road (BLM 12.7.2010)
- 2010 Class III Cultural Resource Inventory for the Questar Gas Management Musser No. 35 Pipeline (BLM 12.16.2010)
- 2010 Class III Cultural Resource Inventory Report for the Wexpro Company Musser No. 35 Well Pad and Access Road (BLM12.21.2010)
- 2010 Class III Cultural Resource Inventory Report for the Questar Gas Management Musser No. 30 Pipeline (BLM 12.17.2010)

2010 Class III Cultural Resource Inventory Report for the Wexpro Company Musser No. 30 Well Pad and Access Road (BLM 12.19.2010)

Werner, Heidi

2010 Class III Cultural Resource Inventory for the Questar Gas Management Company Musser #34 Pipeline (BLM 12.15.2010)

2010 Class III Cultural Resource Inventory for the Questar Gas Management Company Donnell #20 Pipeline (BLM 12.20.2010)

2010 Class III Cultural Resource Inventory for the Questar Gas Management Company Jacks Draw #18 Pipeline (BLM 12.22.2010)

The survey identified no eligible to the National Register of Historic Places cultural resources. The proposed project may proceed as described with the following mitigative measures in place.

Mitigative Measures: No permits may be authorized for the Powder Wash 7-1H pipeline or Jacks Draw #19 pipeline until cultural resource surveys for these projects are accepted.

The following standard stipulations apply for this project:

1. The operator is responsible for informing all persons who are associated with the operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are encountered or uncovered during any project activities, the operator is to immediately stop activities in the immediate vicinity of the find and immediately contact the authorized officer (AO) at (970) 826-5000. Within five working days, the AO will inform the operator as to:

Whether the materials appear eligible for the National Register of Historic Places; The mitigation measures the operator will likely have to undertake before the identified area can be used for project activities again; and Pursuant to 43 CFR 10.4(g) (Federal Register Notice, Monday, December 4, 1995, Vol. 60, No. 232) the holder of this authorization must notify the AO, by telephone at (970) 826-5000, and 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), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

2. If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation costs. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

Name of specialist and date: Robyn Watkins Morris 5/24/10

## **NATIVE AMERICAN RELIGIOUS CONCERNS**

A letter was sent to the Uinta and Ouray Tribal Council, Southern Ute Tribal Council, Ute Mountain Ute Tribal Council on May 26, 2009. The letter listed the FY08 and FY09 projects that the BLM would notify them on and projects that would not require notification. A followup phone call was performed on July 26, 2009. No comments were received (Letter on file at the Little Snake Field Office). This project requires no additional notification.

Name of specialist and date: Robyn Watkins Morris 5/24/10

## **ENVIRONMENTAL JUSTICE**

Affected Environment: The proposed action is located in an area of isolated dwellings. Ranching, farming and oil and gas development are the primary economic activities.

Environmental Consequences: The project area is relatively isolated from population centers, so no populations would be affected by physical or socioeconomic impacts of the proposed action. The proposed action would not directly affect the social, cultural or economic well-being and health of Native American, minority or low-income populations.

Mitigative Measures: None.

Name of specialist and date: Louise McMinn 3/1/10

## **FLOOD PLAINS**

Affected Environment: Active floodplains and flood prone zones are avoided.

Environmental Consequences: No threat to human safety, life, welfare, or property will result from the proposed action.

Mitigative Measures: None.

Name of specialist and date: Roy McKinstry 10/28/09

## **INVASIVE, NONNATIVE SPECIES**

Affected Environment: Invasive species and noxious weeds occur within the affected area. Downy brome (cheatgrass), yellow alyssum, blue mustard and other annual weeds are common along roadsides and on other disturbed areas. Canada thistle and several species of biennial thistles are known to occur in this area. Halogeton has become a very noticeable problem in the affected area, as well as other areas in the western portion of Moffat County. Russian knapweed and hoary cress (whitetop) have been found in the vicinity of these projects. Other species of noxious weeds are not known to be a problem in this area, but they can always be introduced by vehicle traffic, livestock and wildlife.

The BLM, Moffat County, livestock operators, pipeline companies and oil and gas operators have formed the Northwest Colorado Weed Partnership to collaborate their efforts on controlling weeds and finding the best integrated approaches to achieve these results.

**Environmental Consequences:** The surface disturbing activities and associated traffic involved with drilling these wells, constructing access roads, installing pipelines and subsequent activities will create an environment and provide a mode of transport for invasive species and other noxious weeds to become established. Construction equipment and any other vehicles and equipment brought onto the site can introduce weed species. Wind, water, recreation vehicles, livestock and wildlife will also assist with the distribution of weed seed into the newly disturbed areas. The annual invasive weed species (yellow alyssum, blue mustard and other annual weeds) occur on adjacent rangelands and would occupy the disturbed areas; the bare soils and the lack of competition from a perennial plant community would allow these weed species to grow unchecked and can affect the establishment of seeded plant species. Halogeton is a noxious annual weed that would also occupy the disturbed areas, but this weed species would likely require intensive control with herbicides to prevent it from moving into adjacent rangelands. Establishment of perennial grasses and other seeded plants is expected to provide the necessary control of invasive annual weeds within 2 or 3 years. Additional seeding treatments of the disturbed areas may be required in subsequent years if initial seeding efforts have failed.

The perennial and biennial noxious weeds in the area are less frequently established on the uplands but some potential exists for their establishment in draws and swales or areas along the road that would collect additional water. The largest concern in the project area would be for these species to become established and not be detected, providing seed which can be moved onto adjacent rangelands. The operator would be required to control any invasive and/or noxious weeds that become established within the disturbed areas involved with drilling and operating the well.

Mitigation attached as Conditions of Approval to minimize disturbance and obtain successful reclamation of the disturbed areas, as well as weed control utilizing integrated practices, including herbicide applications would help to control the noxious weed species. All principles of Integrated Pest Management should be employed to control noxious and invasive weeds on public lands.

Mitigative Measures: None.

Name of specialist and date: Roy McKinstry 10/28/09

## **MIGRATORY BIRDS**

**Affected Environment:** The Powder Wash area provides potential nesting habitat for ferruginous hawks, golden eagles and pinyon jays. All three of these species are listed on the USFWS 2002 Birds of Conservation Concern List.

Sandstone bluffs and juniper lined ridge tops provide nesting habitat for golden eagles and ferruginous hawks. These features can be found throughout the Powder Wash area. There are multiple historical nest sites for both species in the Powder Wash area. Only one ferruginous hawks nest is located within 1 mile of the proposed well locations. No known golden eagle nests are located near the proposed well locations.

Juniper woodlands located along the south portion of the Powder Wash Area provide potential nesting habitat for pinyon Jay.

Environmental Consequences: The Jacks Draw # 19 and the Donnell #20 wells are located within 1 mile of a known ferruginous hawk nest site. Construction and drilling activities associated with the development of these two well sites could have a negative impact on nesting ferruginous hawks if conducted during the nesting season (February 1 through August 15). If construction and drilling activities are conducted outside of the nesting season, it is unlikely that ferruginous hawks would be impacted. While the Powder Wash area does provide suitable nesting habitat for golden eagles, there are no known nests sites near any of these well locations. As mitigated, chance of take occurring to either of these species is low.

Mitigative Measures: No surface disturbing activities would be permitted for the Jacks Draw #19 and Donnell 20 well sites between February 1 and August 15 in order to protect nesting ferruginous hawks. If the nest site is determined to be inactive after May 15, an exception to this timing restriction may be granted.

Name of specialist and date: Timothy Novotny 3/5/10

## **PRIME & UNIQUE FARMLANDS**

Affected Environment: Not Present.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Roy McKinstry 10/28/09

## **T&E SPECIES – ANIMALS**

Affected Environment: There are no threatened or endangered species or habitats for such species present within the proposed project area. The proposed action would result in impacts to Colorado pikeminnow, razorback sucker, humpback chub, and bonytail chub through minor water depletions associated with drilling activities. The Musser # 34 and the Powder Wash #7-1H wells are within nesting habitat for greater sage-grouse, a candidate species for Federal listing.

Environmental Consequences, In May 2008, BLM prepared a Programmatic Biological Assessment (PBA) that addresses water depleting activities associated with BLM's fluid minerals program in the Colorado River Basin in Colorado. In response to BLM's PBA, the FWS issued a Programmatic Biological Opinion (PBO) (ES/GJ-6-CO-08-F-0006) on December 19, 2008, which determined that BLM water depletions from the Colorado River Basin are not likely to jeopardize the continued existence of the Colorado pikeminnow, humpback chub, bonytail, or razorback sucker, and that BLM water depletions are not likely to destroy or adversely modify designated critical habitat.

A Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin was initiated in January 1988. The Recovery Program serves as the reasonable and prudent alternative to avoid jeopardy and provide recovery to the endangered fishes by depletions from the Colorado River Basin. The PBO addresses water depletions associated with fluid minerals development on BLM lands, including water used for well drilling, hydrostatic testing of pipelines, and dust abatement on roads. The PBO includes reasonable and prudent alternatives developed by the FWS which allow BLM to authorize oil and gas wells that result in water depletion while avoiding the likelihood of jeopardy to the endangered fishes and avoiding destruction or adverse modification of their critical habitat. As a reasonable and prudent alternative in the PBO, FWS authorized BLM to solicit a one-time contribution to the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program) in the amount equal to the average annual acre-feet depleted by fluid minerals activities on BLM lands.

This project has been entered into the Little Snake Field Office fluid minerals water depletion log which will be submitted to the Colorado State Office at the end of the Fiscal Year.

The Musser # 34 and the Powder Wash #7-1H well site fall within four miles of an active sage-grouse lek. This well provides nesting habitat for sage-grouse. If drilling activities were to take place during the breeding or nesting season (March 1 to June 30), significant impacts to sage grouse using this habitat would be expected. Impacts to grouse species from oil and gas development are discussed in the Colorado Oil and Gas EIS (1991). Impacts include, but are not limited to, displacement into less suitable habitat, nest abandonment, destruction of nests and loss of habitat. Other impacts, such as habitat fragmentation and the spread of exotic plants can also degrade sage grouse habitat (Connelly et al. 2004). Noise and increased human activity related to drilling can disrupt breeding and nesting (Connelly et al. 2004). Holloran and Anderson (2004) found a higher annual decline in male lek attendance at leks within 3.2km from drilling activity. To prevent significant impacts to sage grouse species, construction and drilling activities associated with the proposed access road, pipeline and well pad should not be permitted from March 1 to June 30. This timing limitation would prevent accidental nest destruction, nest and lek abandonment and displacement into less suitable habitat. The proposed project would result in a loss of approximately 4 acres of nesting habitat.

*References:*

Bureau of Land Management. 1991. *Colorado Oil and Gas Leasing and Development. Final Environmental Impact Statement.* U.S. Dept. of Interior.

Connelly, J.W., S.T. Knick, M.A. Schroeder and S.J. Stiver. 2004. *Conservation Assessment of Greater Sage-grouse and Sagebrush Habitats.* Western Association of Fish and Wildlife Agencies. Unpublished Report. Cheyenne, Wyoming.

Holloran, M.J., and S.H. Anderson. 2004. *Sage-grouse response to natural gas filed development in northwestern Wyoming.* Proceedings of the 24th Meeting of the Western Agencies Sage and Columbian Sharp-tailed Grouse Technical Committee. Wenatchee, Washington (Abstract).

Mitigative Measures: CO-30 No surface disturbing activities between March 1 and June 30 in order to protect nesting greater sage-grouse. (This timing restriction applies to the Musser # 34 and the Powder Wash #7-1H wells.)

Name of specialist and date: Timothy Novotny 3/5/10

**T&E SPECIES – PLANTS**

Affected Environment: There are no federally listed threatened or endangered plant species present within or in the vicinity of any of the proposed wells.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Hunter Seim 3/5/10

**T&E SPECIES - SENSITIVE PLANTS**

Affected Environment: There are no BLM sensitive plant species present within or in the vicinity of any of the proposed wells with the exception of a population of Nelson's milkvetch which is located within a one mile radius of the Jacks Draw Unit 19.

Environmental Consequences: None. The population of Nelson's milkvetch would not be impacted by any of the proposed wells.

Mitigative Measures: None.

Name of specialist and date: Hunter Seim 3/5/10

**WASTES, HAZARDOUS OR SOLID**

Affected Environment: If a release does occur, the environment affected would be dependent on the nature and volume of material released. If there are no releases, there would be no impact on the environment.

Environmental Consequences: Consequences would be dependent on the volume and nature of the material released. In most every situation involving hazardous materials, there are ways to remediate the area that has been contaminated. Short-term consequences would occur, but they can be remedied, and long-term impacts would be minimal.

Mitigative Measures: None.

Name of specialist and date: Roy McKinstry 10/28/09

## **WATER QUALITY – GROUND**

Affected Environment: Rocks at or near the surface consist primarily of Tertiary age, Wasatch Formation member, Cathedral Bluffs Tongue (Twc). These rocks can and do contain potable, useable water.

Environmental Consequences: There is the potential that during drilling and setting of surface casing the operation will encounter useable groundwater. Fresh to moderately saline groundwater (TDS concentration < 10,000 PPM) is likely to be found within the Wasatch Formation. Water flows are most likely to occur in the sandstone beds of the Wasatch Formation.

Mitigative Measures: The APDs contains a geologic downhole report that requires that the Operator isolate and protect all fresh to moderately saline water (TDS < 10,000 PPM) that is encountered during drilling from communication and contamination with other fluids. The Operator is required to submit a report showing the depth and analysis of all groundwater encountered during drilling.

Name of specialist and date: Marty O'Mara 3/5/10

## **WATER QUALITY/HYDROLOGY – SURFACE**

Affected Environment: The proposed wells would be constructed near Ace in the Hole Draw, an ephemeral drainage. Any runoff from the well pads, pipelines, or access roads would drain towards the Ace in the Hole Draw, which drains into Powder Wash. All stream segments near the well pad location are presently supporting classified beneficial uses. No impaired stream segments occur in the vicinity of the proposed action.

Environmental Consequences: Runoff water from the well sites would drain towards Powder Wash, which is an ephemeral tributary to the Little Snake River. Increased sedimentation to Powder Wash during spring runoff or from high intensity rainstorms is the most likely environmental consequence from the proposed action. Although some

sediment may be transported off site and eventually reach perennial waters, the mitigation provided in the Surface Use Plan and the Conditions of Approval would reduce the potential impacts caused by surface runoff.

Mitigative Measures: None.

Name of specialist and date: Roy McKinstry 10/28/09

### **WETLANDS/RIPARIAN ZONES**

Affected Environment: There are no identified wetlands or riparian zones within the proposed project areas.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Emily Spencer 3/8/10

### **WILD & SCENIC RIVERS**

Affected Environment: Not present.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Roy McKinstry 10/28/09

### **WILDERNESS, WSAs**

Affected Environment: Not present.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Roy McKinstry 10/28/09

### **NON-CRITICAL ELEMENTS**

#### **FLUID MINERALS**

Affected Environment: The proposed wells would be in favorability zone 4 (highest for oil and gas potential). These wells would penetrate the Wasatch and Fort Union Formations.

Environmental Consequences: The casing and cementing program would be adequate to protect all of the resources identified above. All coal seams and fresh water zones would also be protected. The BOP system would be adequately sized. All of these zones would be cased off.

Mitigative Measures: None.

Name of specialist and date: Marty O'Mara 3/5/10

## PALEONTOLOGY

Affected Environment: The geologic formation at the surface of these well pads is the Tertiary Age formation, Wasatch Formation, Cathedral Bluffs Tongue (Twc), a variegated claystone, mudstone and sandstone formation. This formation has been classified a Class II formation for the potential for occurrence of scientifically significant fossils.

Environmental Consequences: Scientifically significant fossils are occasionally found within this formation (Armstrong & Wolney, 1989). The potential for discovery of significant fossils on these locations is considered to be moderate. If any such fossils are located here, construction activities could damage the fossils and the information that could have been gained from them would be lost. The significance of this impact would depend upon the significance of the fossil. Ceasing operations and notifying the Field Office Manager immediately upon discovery of a fossil during construction activities can effectively mitigate this impact. An assessment of the significance is made and a plan to retrieve the fossil or the information from the fossil is developed.

The proposed action could also constitute a beneficial impact to paleontological resources by increasing the chances for discovery of scientifically significant fossils.

Mitigative Measures: If fossils are discovered during construction or other operations, all activity in the area will cease and the Field Office Manager will be notified immediately. An assessment of significance will be made within an agreed time frame. Operations will resume only upon written notification by the Authorized Officer.

### *References:*

Armstrong, Harley J. and Wolney, David G., 1989, *Paleontological Resources of Northwest Colorado: A Regional Analysis*, Museum of Western Colorado, Grand Junction, CO, prepared for Bur. Land Management, Vol. I of V.

Miller, A.E., 1977, *Geology of Moffat County, Colorado*, Colo. Geol. Surv. Map Series 3, 1:126,720.

Name of specialist and date: Marty O'Mara 3/5/10

## **RANGE MANAGEMENT**

Affected Environment: Five of the seven proposed wells fall within the Nipple Rim Allotment and two fall within the Powder Wash Allotment. The Powder Wash Allotment is permitted for cattle and sheep grazing from November through May for a total of 2,502 AUMs although the grazing permittee has taken substantial non-use for the past several years due to drought and increasing oil and gas activity. The Nipple Rim Allotment is permitted for sheep grazing March through May and October through February for a total of 1,989 AUMs.

Environmental Consequences: The proposed wells and associated road construction would remove approximately 48 acres of native vegetation. This loss of vegetation and associated disturbance from vehicle traffic, noise and human presence may cause livestock to alter their distribution pattern. This may result in over utilization of the vegetative resources in some areas of the allotments and under utilization in areas with the most noise and activity. Gates leading into the allotments could be left open by the drilling crew and other personnel, which could lead to possible livestock trespass situations. The presence of livestock may hinder reclamation efforts.

Mitigative Measures: Installation of cattleguards at gate locations would prevent livestock from leaving the allotments through an open gate. Fencing of the well pad during reclamation efforts may help the establishment of native vegetation.

Name of specialist and date: Kathy McKinstry 3/9/10

## **REALTY AUTHORIZATIONS**

Affected Environment: The proposed project area is a developed oil and gas field and contains numerous buried pipeline rights-of-way and other realty authorizations.

Environmental Consequences: Existing buried pipelines or other facilities could be accidentally damaged during project activities. Impacts would be temporary until any damage is repaired.

Mitigative Measures: Potential damage to existing rights-of-way would be minimized by the following actions:

- Avoid existing rights-of-way during the project.
- Utilize the “One Call” system to locate and stake the centerline and limits of all underground facilities in the area prior to project initiation.
- Provide 48-hour notice to the owner/operator of all facilities prior to performing any work near existing rights-of-way.

Name of specialist and date: Louise McMinn 3/1/10

## SOILS

**Affected Environment:** The proposed wells would be located within the Tresano-Hiatha-Kandaly association loam soil-mapping unit, the Talamantes loam saline soil-mapping unit, the Talamantes soil-mapping unit, and the Torriorthents soil mapping unit. These very deep soils are well drained and found on hills, toe slopes, and alluvial fans. Slopes within these units average 0 to 20 percent. These soils formed in alluvium derived from sedimentary rocks. Runoff is slow to rapid and the hazard of wind and water erosion is moderate to high.

**Environmental Consequences:** The construction and operation of the Powder Wash Wells would affect soils within and immediately adjacent to the proposed areas of disturbance. Increased soil erosion from wind and water would occur during construction of the well pads, pipelines, and access roads. Erosion would continue throughout the operational life of the wells. Loss of topsoil, soil compaction, and possible increases in sediment loads to drainages are impacts most likely to occur.

Vegetation and soil would be removed from approximately 48 acres of land. Soil productivity would decline due to reduced soil microbial activity, impaired water infiltration, mixing of soil horizons, top soil loss, and introduction of weeds. Soil loss from construction would be greatest shortly after project start and would decrease in time as a result of stabilization through revegetation and reclamation of disturbed areas. Soil erosion would be reduced to an acceptable level with the mitigation described in the Surface Use Plan and Conditions of Approval in the approved APDs. This mitigation would reduce the potential to have excessive sediments and salts in runoff water from the well sites.

**Mitigative Measures:** Additional mitigative measures would be employed to prevent or reduce accelerated erosion if it begins to occur within or on constructed drainage and diversion ditches or surface drainages affected by the roads, pipelines, or well pads.

Name of specialist and date: Roy McKinstry 10/28/09

## VEGETATION

**Affected Environment:** The seven well sites would be located in four different range sites that occur in association with four soil mapping units as shown on the table below:

Well Name	Soil Map Unit	Range Site	Potential Native Vegetation	Actual Vegetation Present
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Well Name	Soil Map Unit	Range Site	Potential Native Vegetation	Actual Vegetation Present
JC Donnell #20	195	N/A	Wyoming big sagebrush, Indian ricegrass, bottlebrush squirreltail, saltbush, Needle and thread, shadscale, bud sagebrush, western wheatgrass	Wyoming big sagebrush, Indian ricegrass, bottlebrush squirreltail, shadscale, western wheatgrass, whitesage, needle and thread, Gardner's saltbush greasewood, juniper, crested wheatgrass, bluebunch wheatgrass
Musser Well #30 B.W. Musser Well #34 B.W. Musser #35 Jacks Draw #18	201	Clayey 9-11"	streambank wheatgrass, western wheatgrass, Indian ricegrass, Nevada bluegrass, Wyoming big sagebrush, needle and thread, shadscale saltbush	Western wheatgrass, Indian ricegrass, Gardner's saltbush, rabbit brush, cactus cheatgrass, halogeton, needle and thread, spiny horsebrush, Wyoming big sagebrush, inland saltgrass, galleta grass, shadscale, fringed sage, shadscale, Nevada bluegrass, juniper streambank wheatgrass, crested wheatgrass, whitesage,

Well Name	Soil Map Unit	Range Site	Potential Native Vegetation	Actual Vegetation Present
Jacks Draw #19	95	Alkali Upland	Gardner's saltbush, Indian ricegrass, western wheatgrass, streambank wheatgrass	Gardner's saltbush, western wheatgrass, Indian ricegrass
Powder Wash #7-1H	207	Loamy 7-10"	Wyoming big sagebrush, streambank wheatgrass, streambank wheatgrass, Indian ricegrass, bottlebrush squirreltail, shadscale saltbush, Nevada bluegrass, needle and thread, western wheatgrass	Wyoming big sagebrush, Indian ricegrass, bottlebrush squirreltail, shadscale, western wheatgrass, needle and thread grass

Each of the proposed well sites is in good ecological condition with no signs of previous disturbance or over-utilization by livestock.

Environmental Consequences: The Proposed Action would completely remove approximately 48 acres of vegetation on Federal surface. The removal of approximately 3.6 acres of vegetation per well would be relatively minor in the larger landscape, it becomes a larger action when all seven wells are considered as one action. The removal of 48 acres of vegetation would be in addition to numerous other plant community intrusions such as the dense road network, other wells, and the Powder Wash Camp. As evidenced by the high levels of halogeton and cheatgrass within the undisturbed plant community, any disturbance at these locations has the potential to greatly increase the presence of these non-native species if required weed management practices are not followed. As required, the sites would be partially reclaimed if the wells are producing wells, and completely reclaimed if the wells do not produce. Aridity, highly saline soils, and weed competition would result in very slow re-establishment of the native species that are reseeded. Careful adherence to required reclamation practices would be vital to ensuring that the direct impacts of the Proposed Action do not have long-term adverse impacts to the plant community.

Mitigative Measures: Adherence to COAs.

Name of specialist and date: Kathy McKinstry 3/9/10

### **WILDLIFE, AQUATIC**

Affected Environment: There is no aquatic wildlife habitat present within the proposed project area.

Environmental Consequences, All Alternatives: The construction and drilling of the wells in the Powder Wash area would not impact any aquatic wildlife or their habitats.

Mitigative Measures: None.

Name of specialist and date: Timothy Novotny 3/5/2010

### **WILDLIFE, TERRESTRIAL**

Affected Environment: The Powder Wash Area provides marginal habitat for mule deer and pronghorn antelope. Occasionally, elk will utilize the area although this is primarily for migration purposes. This area does not provide critical winter habitat for any of these species. Much of the project area has been impacted by previous oil and gas development. Most big game animals avoid the project area due to heavy human activity associated with the active gas field. Halogeton has become abundant throughout most of the project area. This weedy species has further degraded wildlife habitat in this area.

Environmental Consequences: The development of these wells in this project area would not likely have a negative impact on big game animals within the Powder Wash area. Big game animals that utilize the area now are most likely accustomed to human activity and are comfortable with it. Areas surrounding well pads will be avoided by wildlife during the construction and drilling phases. Any animals that have used this area would likely return to the area once construction and drilling are complete because they are accustomed to the existing disturbances.

Mitigative Measures: None.

Name of specialist and date: Timothy Novotny 3/5/10

**OTHER NON-CRITICAL ELEMENTS:** 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 and present Brought Forward for Analysis
Fluid Minerals			See Fluid Minerals
Forest Management	RM 10/282/09		
Hydrology/Ground			See Ground Water Quality
Hydrology/Surface			See Hydrology/Surface
Paleontology			See Paleontology
Range Management			See Range Mgmt
Realty Authorizations			See Realty Authorizations
Recreation/Travel Mgmt		GMR 03/03/10	
Socio-Economics		LM 3/1/10	
Solid Minerals			See Solid Minerals
Visual Resources		GMR 03/03/10	
Wild Horse & Burro Mgmt	RM 10/28/09		

**CUMULATIVE IMPACTS SUMMARY:** Cumulative impacts may result from the development of the Powder Wash wells when added to non-project impacts that result from past, present, and reasonably foreseeable future actions. The potential exists for future oil and gas development throughout the Powder Wash Field. Currently numerous producing wells exist within a one-mile radius of the proposed wells. Other past or existing actions near the project area that have influence on the landscape are wildfire, recreation, hunting, grazing, and ranching activities.

Surface disturbance associated with oil and gas activity would increase the potential for erosion and sedimentation. Displacement of hunters and recreationists during the short-term construction and drilling periods would occur. Contrasts in line, form, color, and texture from development would impact the visual qualities on the landscape.

Cumulative impacts to the plant communities within the gas lease and adjacent areas include an incremental reduction of continuity in the plant communities in terms of acreages that remain undisturbed. Loss of continuity results in smaller and smaller areas of undisturbed native vegetation and the potential for loss of integrity within the larger plant community. Fragmented plant communities can lose resilience to natural and man-made disturbance due to isolation of areas from seed sources necessary for proper age class distribution of plants, and subsequently, a greater opportunity for stressors such as drought to have a more severe impact on the plant community as a whole. The increased disturbance also makes native plant communities more susceptible to invasion by annual weeds as vectors for increasing weeds. Even with weed control measures applied, the potential for weeds to move further into undisturbed remnant areas increases as these remnants become smaller and more isolated from larger undisturbed areas.

Cumulative impacts to the livestock grazing operations in the area are also increased through the proposed action. The grazing allotment in which these wells are proposed is primarily a winter sheep allotment. The growth in wells, roads, and human activity has reduced the availability of forage in this area far beyond direct impacts caused by construction. Halogeton which has increased among the new roads and well pads is toxic to sheep. The resulting impact to grazing activities permitted in the area is a loss of available Animal Unit Months (AUMs), i.e. a loss of the amount of livestock that the allotment can reasonably carry. Due to recent years of drought, the livestock operators have only lightly used these allotments, so direct impacts to grazing activities have not been fully felt.

Habitat fragmentation from well pad construction and the associated roads have likely decreased the nesting suitability for migratory birds in Powder Wash. Ingelfinger (2001) found that roads associated with oil and gas development have a negative impact on passerines bird species. Bird densities were reduced within 100m of each road. Due to the amount of new road construction and an increase in traffic on these roads, passerine populations in the area are likely decreasing.

The cumulative impacts of additional wells and roads in the Powder Wash field will continue to degrade habitat for the greater sage grouse. Fragmentation, mostly due to road construction, is an important factor contributing to a decrease in habitat quality. Disturbances such as higher traffic volume and other human activities also contribute to degradation of habitat quality. However, as the area is not used for nesting, brood rearing, or wintering, these impacts would be less severe. Continued oil and gas development would lead to decreased sage grouse use of the habitat.

Although big game species are able to adapt to disturbances better than other wildlife, increased development would still have impacts to mule deer and antelope. Timing stipulations adequately protect big game species during critical times of the year; however, continued oil and gas development would lead to decreased use of the habitat due to increased human activity. A significant amount of vehicle traffic occurs with oil and gas development. Impacts to big game may be vehicle-animal collisions, as these are a major cause of mortality for big game species.

*References:*

Ingelfinger, F. 2001. *The Effects of Natural Gas Development on Sagebrush Steppe Passerines in Sublette County, Wyoming*. University of Wyoming, Laramie, WY.

**STANDARDS:**

**PLANT AND ANIMAL COMMUNITY (animal) STANDARD:** Much of the Powder Wash project area is not capable of supporting healthy diverse populations of wildlife. Existing heavy oil and gas development along with the abundance of halogeton has decreased habitat quality throughout the project area. Well locations along the fringe of the developed area are still capable of supporting use by wildlife. The development of these wells is likely to further displace wildlife from this area. This standard is not currently being met. The development of additional wells in this area would not improve habitat conditions for wildlife.

Name of specialist and date: Timothy Novotny 3/5/10

**SPECIAL STATUS, THREATENED AND ENDANGERED SPECIES (animal)**

**STANDARD:** The Musser # 34 and the Powder Wash #7-1H wells are within nesting habitat for greater sage-grouse, a candidate species for Federal listing. The development of these two wells would result in the loss of approximately 4 acres of nesting habitat. If construction occurs during the nesting season, it is likely that nesting grouse could be disturbed. This could lead to nest abandonment. Timing restrictions in place will protect nesting sage grouse.

The development of all 7 wells would result in minor water depletions. These depletions would have an effect on Colorado pikeminnow, razorback sucker, humpback chub, and bonytail chub. All four species are listed as federally endangered. This project has been entered into the Little Snake Field Office fluid minerals water depletion log which would be submitted to the Colorado State Office at the end of the Fiscal Year.

This standard is currently being met. As mitigated, this project would not prevent this standard from being met in the future.

Name of specialist and date: Timothy Novotny 3/5/10

**PLANT AND ANIMAL COMMUNITY (plant) STANDARD:** The Proposed Action would completely remove approximately 48 acres of native vegetation. As long as required weed control and reclamation practices are followed, the Proposed Action would meet this standard as negative impacts to the larger plant community would be minimized and the disturbance would be essentially temporary.

Name of specialist and date: Kathy McKinstry 3/9/10

**SPECIAL STATUS, THREATENED AND ENDANGERED SPECIES (plant)**

**STANDARD:** There are no federally listed threatened or endangered or BLM sensitive plant species that would be impacted by any of the proposed wells. This standard does not apply.

Name of specialist and date: Hunter Seim 3/5/10

**RIPARIAN SYSTEMS STANDARD:** There are no identified wetlands or riparian areas within the proposed project areas. This standard does not apply.

Name of specialist and date: Emily Spencer 3/8/10

**WATER QUALITY STANDARD:** The proposed action would meet the public land health standard for water quality. Reclamation of the pipeline corridors would be completed immediately after installation to minimize sheet and rill erosion from the corridor. Interim reclamation of the unused area on the well pads would be completed to minimize sheet and rill erosion from the well sites. When the well pads are no longer needed for production operations,

the disturbed well pads and access roads would be reclaimed to approximate original contours, topsoil would be redistributed, and adapted plant species would be reseeded. These Best Management Practices would help to reduce accelerated erosion of the sites. No stream segments near this project are listed as impaired.

Name of specialist and date: Roy McKinstry 10/28/09

**UPLAND SOILS STANDARD:** The proposed action would not meet the upland soil standard for land health, but it is not expected to while the well locations, pipelines, and access roads are used for operations. The well pad sites, pipeline corridors, and access roads would not exhibit the characteristics of a healthy soil. Several Best Management Practices have been designed into the project or are attached as mitigating measures that would reduce impacts to and conserve soil materials. Upland soil health would return to the well pads, pipeline corridors, and access roads disturbances after reclamation practices and well abandonments have been successfully achieved.

Name of specialist and date: Roy McKinstry 10/28/09

**PERSONS/AGENCIES CONSULTED:** Uintah and Ouray Tribal Council, Colorado Native American Commission, Colorado State Historic Preservation Office.

**FINDING OF NO SIGNIFICANT IMPACT (FONSI)  
DOI-BLM-CO-NO10-2010-0011-EA**

Based on the analysis of potential environmental impacts contained in the EA and all other available information, I have determined that the proposal and the alternatives analyzed do not constitute a major Federal action that would adversely impact the quality of the human environment. Therefore, an EIS is unnecessary and will not be prepared. This determination is based on the following factors:

1. Beneficial, adverse, direct, indirect, and cumulative environmental impacts have been disclosed in the EA. Analysis indicated no significant impacts on society as a whole, the affected region, the affected interests, or the locality. The physical and biological effects are limited to the Little Snake Resource Area and adjacent land.
2. Public health and safety would not be adversely impacted. There are no known or anticipated concerns with project waste or hazardous materials.
3. There would be no adverse impacts to regional or local air quality, prime or unique farmlands, known paleontological resources on public land within the area, wetlands, floodplain, areas with unique characteristics, ecologically critical areas, or designated Areas of Critical Environmental Concern.
4. There are no highly controversial effects on the environment.
5. There are no effects that are highly uncertain or involve unique or unknown risk. Sufficient information on risk is available based on information in the EA and other past actions of a similar nature.
6. This alternative does not set a precedent for other actions that may be implemented in the future to meet the goals and objectives of adopted Federal, State, or local natural resource related plans, policies, or programs.
7. No cumulative impacts related to other actions that would have a significant adverse impact were identified or are anticipated.
8. Based on previous and ongoing cultural surveys, and through mitigation by avoidance, no adverse impacts to cultural resources were identified or anticipated. There are no known American Indian religious concerns or persons or groups who might be disproportionately and adversely affected as anticipated by the Environmental Justice Policy.

9. No adverse impacts to any threatened or endangered species or their habitat that was determined to be critical under the Endangered Species Act were identified. If, at a future time, there could be the potential for adverse impacts, treatments would be modified or mitigated not to have an adverse effect or new analysis would be conducted.

10. This alternative is in compliance with relevant Federal, State, and local laws, regulations, and requirements for the protection of the environment.

**DECISION AND RATIONALE:**

I have determined that approving these seven APDs is in conformance with the approved land use plan. It is my decision to implement the project with the mitigation measures provided in the Application for Permit to Drill and the Conditions of Approval. The project will be monitored as stated in the Compliance Plan outlined below.

**MITIGATION MEASURES:** The mitigation measures for this project are found in the file room of the Little Snake Field Office. The APD's 12-point surface use plan, well location maps, and the Conditions of Approval are found in the well's case file labeled CODO38749B, Powder Wash #7-1H; COCO4761A, BW Musser #34; COC47671A, Musser #30; COCO47671A, JC Donnell #20; COC47639A, Jacks Draw #18; COC47639A, Jacks Draw #19; COC47639A BW Musser #35; COCO74343, Pipeline ROW Powder Wash #7-1H; COCO74398, Pipeline ROW BW Musser #34; COCO74364; Pipeline ROW Musser #30; COCO74357, Pipeline ROW JC Donnell #20; COCO74367, Pipeline ROW Jacks Draw #18; COCO74368, Pipeline ROW Jacks Draw #19; COCO74365, Pipeline ROW BW Musser #35.

**COMPLIANCE PLAN(S):**

**Compliance Schedule**

Compliance will be conducted during the construction phase and drilling phase to insure that all terms and conditions specified in the lease and the approved APD are followed. In the event a producing well is established, periodic inspections as identified through the Inspection and Enforcement Strategy and independent well observations will be conducted. File inspections will include a review of all required reports and the Monthly Report of Operations will be evaluated for accuracy.

**Monitoring Plan**

The well location and access road will be monitored during the term of the lease for compliance with pertinent Regulations, Onshore Orders, Notices to Lessees, or subsequent COAs until final abandonment is granted; monitoring will help determine the effectiveness of mitigation and document the need for additional mitigative measures.

**Assignment of Responsibility**

Responsibility for implementation of the compliance schedule and monitoring plan will be assigned to the Fluid Mineral staff in the Little Snake Field Office. The primary inspector will be the Petroleum Engineering Technician, but the Petroleum Engineer, Natural Resource Specialist, Realty Specialist, and Legal Instruments Examiner will also be involved.

**SIGNATURE OF PREPARER:**

**DATE SIGNED:**

**SIGNATURE OF ENVIRONMENTAL REVIEWER:**

**DATE SIGNED:**

**SIGNATURE OF AUTHORIZED OFFICIAL:**

**DATE SIGNED:**