

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: CO-100-2007-054 EA

CASEFILE/PROJECT NUMBER/LEASE NUMBER:

COC081267: Ace Unit Well #13
COC038749B: Musser Well #27
COC081267: Carl Allen Well #27, #28, # 29

PROJECT NAME: Five Powder Wash Wells

LEGAL DESCRIPTION: All five wells in Moffat County, Colorado

Ace Unit Well #13: NESE Section 28, T12N, R97W, 6th PM
Musser Well #27: SWNE Section 4, T11N, R97W, 6th PM
Carl Allen Well #27: NENW Section 33, T12N, R97W, 6th PM
Carl Allen Well #28: NWSW Section 28, T12N, R97W, 6th PM
Carl Allen Well #29: SWSW Section 33, T12N, R97W, 6th 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 five 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 March 13, 2007 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 five Applications for Permit to Drill (APD) submitted by Wexpro Company. Wexpro Company proposes to drill five gas wells on BLM administered land located in the Powder Wash Field in T11N & T12N, R97W. APDs have been filed with the LSFO for the Ace Unit Well #13, the Musser Well #27, and the Carl Allen Well #27, #28, #29. 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 2007 and the estimated duration of construction and drilling for each of the wells is 30 days. Short access roads would be constructed for each well. Total surface disturbance for road construction would be approximately two 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. Approximately 3.2 acres would be disturbed for construction of each well pad. This would include the 420' by 330' 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 the APD. Approximately 4,897 feet of new pipeline would be installed and connected to existing gas pipelines in the Powder Wash Field to service the wells once production is established. All pipeline construction would be on lease and on BLM surface.

Total surface disturbance for the proposed action would be 18 acres.

NO ACTION ALTERNATIVE: The "no action" alternative is that the well 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 five 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. The proposed action will not adversely affect the regional air quality.

Mitigative Measures: None.

Name of specialist and date: Roy McKinstry 03/27/07

AREA OF CRITICAL ENVIRONMENTAL CONCERN

Affected Environment: Not present.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Roy McKinstry 08/20/07

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 *Regional Class I Overview of Cultural Resources for the BLM Little Snake RMP*, and *Colorado Prehistory: A Context for the Northern Colorado River Basin*, *Colorado Council of Colorado Archaeologists*. Also see *An Overview of Prehistoric Cultural Resources, Little Snake Resource Area, Northwestern Colorado*, Bureau of Land

Management Colorado, Cultural Resources Series, Number 20, and *An Isolated Empire, A History of Northwestern Colorado*, Bureau of Land Management Colorado, Cultural Resource Series, Number 2.

Environmental Consequences:

Erickson, Jan and Jana Pastor
2007 Class III Cultural Resource Inventory Report for the Wexpro Company Carl Allen No. 27 Well Pad, Access Road, and Pipeline Moffat County (BLM #12.27.07)

Erickson, Jan and Jana Pastor
2007 Class III Cultural Resource Inventory Report for the Wexpro Company Carl Allen No. 28 Well Pad, Access Road, and Pipeline, Moffat County, Colorado (BLM 12.26.07)

Erickson, Jan and Jana Pastor
2007 Class III Cultural Resource Inventory Report for the Wexpro Company Carl Allen No. 29 Well Pad, Access Road, and Pipeline, Moffat County, Colorado (BLM #12.25.07).

Darlington, David
2007 Class III Cultural Resource Inventory for the Wexpro Company Ace Unit No. 13, Well Pad, Access Road, and Natural Gas Pipeline (BLM #12.29.07).

2007 Class III Cultural Resource Inventory for the Wexpro Company B. Musser No. 27, Well Pad, Access Road, and Natural Gas Pipeline (BLM #12.30.07)

No historic properties were identified during these surveys. The proposed project may proceed as described in this EA with the following mitigative measures in place.

Mitigative Measures:

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 08/10/07

NATIVE AMERICAN RELIGIOUS CONCERNS

A letter was sent to the Uinta and Ouray Tribal Council, Southern Ute Tribal Council, Ute Mountain Ute Tribal Council, and the Colorado Commission of Indian Affairs on January 21, 1999. The letter listed the projects that the BLM would notify them on and projects that would not require notification. 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 08/10/07

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: Mike Andrews 08/13/07

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 08/20/07

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, on well pads and on other disturbed areas. Canada thistle and several species of biennial thistles are known to occur in this area. Halogeton, Russian knapweed and hoary cress (whiteweed) are present 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 new wells, installing pipelines to each, and upgrading and constructing new access roads would create a favorable 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 these weed species. Wind, water, recreation vehicles, livestock and wildlife would 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. 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 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 wells. All principles of Integrated Pest Management should be employed to control noxious weeds on public lands.

Mitigation attached as Conditions of Approval to minimize disturbance and obtain successful reclamation of the areas not needed for production operations, 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: Ole Olsen 8/21/07

MIGRATORY BIRDS

Affected Environment: The Proposed Action would not result in displacement of wildlife or loss of habitat. There would be no impacts to wildlife if this alternative were selected. Golden Eagles are known to utilize the project area. There are no known nests within 1 mile of any of the five wells.

Environmental Consequences: Construction and drilling activities that are conducted outside of the nesting season would not impact either species. If conducted during the nesting season (May – August) there is a slight chance a nest could be present and impacted by these activities. Chance of take is moderate.

Recent studies have indicated that birds have entered heater treater facilities through open vents. Birds have been entrapped and have died in these facilities as a result of gasses held in the facilities.

Mitigative Measures: All open vent stack equipment such as heater treaters, separators, dehydration units, and flare stacks shall be designed and constructed to prevent birds and bats from entering or nesting in or on such units, and to the extent practical, to discourage birds from perching on the stacks.

Name of specialist and date: Timothy Novotny 08/10/07

PRIME & UNIQUE FARMLANDS

Affected Environment: Not Present.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Roy McKinstry 08/20/07

T&E SPECIES – ANIMALS

Affected Environment: There are no threatened, endangered species or habitat for such species within the project area. The Carl Allen #27 well location is adjacent to a historic white-tailed prairie dog town. White-tailed prairie dogs are a BLM special status species. This prairie dog town has been inactive since the mid 1990's when it died out. The die off is suspected to be a result of sylvatic plague.

Environmental Consequences: There would be no impact to threatened or endangered species or their habitat. White-tailed prairie dogs would not be impacted by this well. It would not prevent the reestablishment of this well in the future.

Mitigative Measures: None.

Name of specialist and date: Timothy Novotny 08/10/07

T&E SPECIES – PLANTS

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

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Hunter Seim 08/10/07

T&E SPECIES - SENSITIVE PLANTS

Affected Environment: There are no BLM sensitive plant species that would be affected by any of these five proposed wells.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Hunter Seim 08/10/07

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 will 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 08/20/07

WATER QUALITY – GROUND

Affected Environment: Fresh water within the Wasatch Formation may occur. Potable water is highly unlikely in this area. The surface casing would be adequate to protect any

fresh water zones, coupled with production casing and cement behind pipe from TD to surface.

Environmental Consequences: With the use of proper construction practices, drilling practices, and with best management practices no significant adverse impact to groundwater aquifers and quality is anticipated to result from the proposed action. A geologic and engineering review was performed on the 8-point drilling plans to ensure that the cementing and casing programs adequately protect the downhole resources.

Mitigative Measures: None.

Name of specialist and date: Roy McKinstry 08/20/07

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 08/20/07

WETLANDS/RIPARIAN ZONES

Affected Environment: There are no wetlands or riparian zones present within the project area.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Timothy Novotny 08/10/07

WILD & SCENIC RIVERS

Affected Environment: Not present.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Roy McKinstry 08/20/07

WILDERNESS, WSAs

Affected Environment: Not present.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Roy McKinstry 08/20/07

NON-CRITICAL ELEMENTS

FLUID MINERALS

Affected Environment: The proposed action is in favorability Zone 4 (highest for oil and gas potential). These wells would penetrate the Wasatch, Fort Union, Ft. Union Coal, Lewis, Almond and Trout Creek. The Fox Hills, Lewis and, Almond Formations would be tested in these wells for possible economic gas recovery. The casing and cementing programs follow Onshore Order #2. Shallow, thin beds of coal can be found in the Wasatch Formation; their mineable value is low and their total gas content is low. Coal seams are found in the Fort Union and Mesaverde Formations however these seams are not currently economical to mine. The above identified coal seams would be isolated by the proposed casing and cementing program.

Environmental Consequences: The proposed casing and cementing programs follow Onshore Order #2 and appear to be adequate to protect and/or isolate all resources identified in the preceding paragraph. The entire hole is cased with cement behind pipe.

Mitigative Measures: None.

Name of specialist and date: Marilyn D. Wegweiser 08/23/07

PALEONTOLOGY

Affected Environment: Quaternary alluvium overlying the Eocene Green River Formation Luman Tongue bedrock. The Luman Tongue was deposited in freshwater, thermally stratified lakes. It consists of sequences of lacustrine shales 100s of feet thick that are variable in composition. Littoral coals and shales with less than 2% TOC are composed of Type-III kerogen (HI 58-300 mg/gC). Profundal shales have up to 7% TOC that is a mixture of Types I and III kerogen (HI <580). Low TOC values are due to poor preservation in the lake sediments and dilution by detrital deposition. Input of land-derived organic matter causes much variability in organic-matter type (Grabowski and Bohacs, 1996).

The Luman and Niland Tongues of the Green River Formation, and associated Wasatch Formation (overflowed lake basin) contain mostly epifaunal insect and tetrapod tracks and trails and few infaunal insect burrows found in shoreline or lake-plain strata (*Haplotichnus*, *Steinichnus*, *Fuersichnus*, adhesive meniscate burrows) (Bohacs, et al., 2002). The transition from a fluvial-lacustrine facies to a purely lacustrine one is marked by a change in lithology from fine-grained, rust colored sandstones and variegated mudstones of fluvial origin, to drab, fossiliferous, dark gray to brown mudstones of lacustrine origin. This is accompanied by a change in the morphology and composition of molluscs within this section. In more fluvial environments, the bivalve *Plesielliptio priscus* is abundant with rare specimens of *P. littoralacustris* and the pleurocerid gastropod, *Goniobasis tenera*. *Goniobasis tenera* in this environment exhibit weak or no ornamentation. As lacustrine sediments increase in proportion and dominate the section, *Goniobasis tenera* with sculptured shells become more abundant, while the unsculptured morphotypes of *G. tenera* disappear. Bivalves are rarer in the lacustrine sediments. In general, pleurocerids exhibit some of the most pronounced shell sculpture among freshwater gastropods. *Pleurocerid* species may include individuals with smooth, unsculptured shells, or ornate, sculptured shells (i.e. prominent spines) (Kuchta, 2000).

Environmental Consequences: PYFC: *Class 4b* – These are areas underlain by units with high potential but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to tempering circumstances. The bedrock unit has high potential, but a protective layer of soil, thin alluvial material, or other conditions may lessen or prevent potential impacts to the bedrock resulting from the activity.

- Extensive soil or vegetative cover; bedrock exposures are limited or not expected to be impacted.
- Areas of exposed outcrop are smaller than two contiguous acres.
- Outcrops form cliffs of sufficient height and slope so that impacts are minimized by topographic effects.
- Other characteristics are present that lower the vulnerability of both known and unidentified fossil resources.

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

Mitigative Measures: Unusual occurrences of plant or invertebrate fossils should be recorded, and representative examples may be collected if appropriate. Additional mitigation measures may be appropriate in some cases for these types of localities. Concentrations of common plant or invertebrate fossils that may be suitable for public hobby collection areas should also be noted and reported to the Field Office paleontology program coordinator or paleontology program lead.

During operations, if any vertebrate paleontological resources are discovered, in accordance with Section 6 of Form 3100-11 and 43 CFR 3162.1, all operations affecting such sites shall be immediately suspended, and all discoveries shall be left intact until authorized to proceed by the Authorized Officer. The appropriate Authorized Officer of the Little Snake BLM office, Craig Colorado, shall be notified within 48 hrs of the discovery, and a decision as to the preferred alternative/course of action will be rendered.

Reference:

Hanson, D., Armstrong, H., Hester, P., and Foss, S., – Regional Paleontologists; Titus, Alan, – GSENM Paleontologist; and McClellan, C., – Chief, Div. of Cultural and Paleontological Resources and Tribal Consultation, Washington, DC, 2006. Draft: Survey & Mitigation Protocols for Addressing Potential Impacts to Paleontological Resources

Name of specialist and date: Marilyn D. Wegweiser 08/23/07

References:

Bohacs, Kevin M. (ExxonMobil Upstream Research Company, Houston, TX, United States), Hasiotis, Stephen T., Demko, Timothy M., 2002. *The birds and the bees; insect and vertebrate ichnofossil evidence for fluctuating groundwater table and lake level, Green River and Wasatch Formations, Eocene, Wyoming* Anonymous, *Geological Society of America, 2002 annual meeting, Abstracts with Programs - Geological Society of America*, 34 (6), p. 556, 2002. Meeting: Geological Society of America, 2002 annual meeting, Denver, CO, United States

Grabowski, George J., Jr (Exxon Exploration Company, Houston, TX, United States), Bohacs, Kevin M., 1996. *Controls on composition and distribution of lacustrine organic-rich rocks of the Green River Formation, Wyoming* Anonymous, *American Association of Petroleum Geologists 1996 annual convention, Annual Meeting Abstracts - American Association of Petroleum Geologists and Society of Economic Paleontologists and Mineralogists*, 5, p. 55, 1996. Meeting: American Association of Petroleum Geologists 1996 annual convention, San Diego, CA, United States.

Kuchta, Matthew A., 2000. *Paleoenvironmental significance of nonmarine Mollusca in the Luman Tongue of the Green River Formation, Wyoming*, p. 63, 56 refs.

RANGE MANAGEMENT

Affected Environment: The proposed wells, pipelines, and associated road construction would take place in the Nipple Rim Allotment #04213 and the Powder Wash Allotment #04214. These allotments are permitted to Smith Rancho (#04213), Morgan Creek Land and Livestock (#04213), and Salisbury Ranch (#04214) respectively. The Nipple Rim Allotment is run in common with Smith Rancho and Morgan Creek Land and Livestock. Smith Rancho and Morgan Creek Land and Livestock are each permitted for 1989 AUMs of sheep use from October 20 to May 20. The Powder Wash allotment is permitted for 235 AUMs of cattle use from January 18 to March 31, and 1090 AUMs of sheep use from November 27 to February 28.

Environmental Consequences: The proposed wells, pipelines, and associated road construction would remove approximately 18 acres of total vegetation. The increase in vehicle traffic and human activities in this area, as a result of road construction, well drilling, pipeline installation, and maintenance may displace livestock from the immediate area. As a result of this displacement livestock pressure may be higher in other areas of these allotments. If utilization monitoring and use pattern mapping indicate that livestock are exhibiting an unacceptable level of utilization in other parts of these allotments due to displacement, permitted AUMs on these allotments may need to be reduced. Both these allotments are used as winter grazing allotments and thus distribution is not expected to have a significant impact as a result of snow. It is not anticipated that the proposed action will have a significant impact on livestock management.

Mitigation Measures: None.

Name of specialist and date: Kathy McKinstry 08/20/07

SOILS

Affected Environment: The proposed wells would be located within the Tresano-Hiatha-Kandaly association loam soil-mapping unit and the Talamantes loam 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 five 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 18 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 will 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 08/20/07

VEGETATION

Affected Environment: The proposed action is located in a sagebrush-grass community. Dominant plant species for this site include Wyoming big sagebrush (*Artemisia tridentata wyomingensis*), western wheatgrass (*Agropyron smithii*), needle and thread (*Stipa comata*), Indian ricegrass (*Oryzopsis hymenoides*), Galleta (*Hilaria jamesii*), prairie junegrass (*Koeleria cristata*), and sandberg bluegrass (*Poa secunda*).

Environmental Consequences: The proposed action would remove approximately 18 total acres of vegetation for well pad, pipeline and road construction, enhancements. The construction of the well pads would remove approximately 16 acres of previously undisturbed vegetation. The total disturbance caused by road improvements and well pad construction is minimal, and would not jeopardize the greater herbaceous community, as long as appropriate weed management practices are employed. Appropriate weed management practices are critical to the integrity of the surrounding plant community.

Mitigative Measures: None.

Name of specialist and date: Kathy McKinstry 08/20/07

WILDLIFE, AQUATIC

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

Environmental Consequences: None.

Mitigative Measures: None

Name of specialist and date: Timothy Novotny 08/10/07

WILDLIFE, TERRESTRIAL

Affected Environment: The proposed wells are within mule deer and pronghorn antelope habitat. Mule deer and antelope use the project area through out the year except for during the most severe winters. A variety of reptiles, songbirds and small mammals may be found within the project area as well.

Environmental Consequences: Drilling and construction activities associated with the proposed action would displace big game animals from the project area. Surrounding undisturbed habitats are capable of supporting displaced animals while these activities are occurring. Once completed, many displaced animals will return to the area surrounding the well sites. Approximately 18 acres of habitat will be lost as a result of this action.

Small mammals, songbirds and reptiles could be displaced from the project area during construction and drilling. Most of these animals are capable of avoiding construction equipment and would not be harmed. It is possible that construction activities associated with well pad and access road development would destroy songbird nests if conducted during the nesting season (May through August). If conducted outside of this time period, song birds would not be harmed.

Mitigative Measures: None

Name of specialist and date: Timothy Novotny 08/10/07

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 & Present and Brought Forward for Analysis
Fluid Minerals			See Fluid Minerals
Forest Management	RM 08/20/07		
Hydrology/Ground		RM 08/20/07	
Hydrology/Surface		RM 08/20/07	
Paleontology			See Paleontology
Range Management			See Range Mgmt
Realty Authorizations		MAA 08/13/07	
Recreation/Travel Mgmt		RM 08/23/07	
Socio-Economics		MAA 08/13/07	
Solid Minerals	JAM 8/8/07		
Visual Resources		RM 08/23/07	
Wild Horse & Burro Mgmt	RM 08/20/07		

CUMULATIVE IMPACTS SUMMARY: Cumulative impacts may result from the development of the five 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: The project area currently provides habitat for a variety of wildlife species. Big game animals as well as small mammals, song birds and reptiles can be found in and around the project area. The proposed action would result in the loss of 18 acres of habitat and the displacement of many individual animals during construction and drilling. Most individuals would be able to return to the project area once these activities are completed. This standard is currently being met and would continue to be met in the future.

Name of specialist and date: Timothy Novotny 08/10/07

SPECIAL STATUS, THREATENED AND ENDANGERED SPECIES (animal) STANDARD: There are no threatened or endangered species or habitat for such species within the project area. A historic white-tailed prairie dog colony existed adjacent to the Carl Allen #27. This well would not prevent prairie dogs from re-establishing the colony in the future. The proposed action would not prevent this standard from being met in the future.

Name of specialist and date: Timothy Novotny 08/10/07

PLANT AND ANIMAL COMMUNITY (plant) STANDARD: The proposed action would completely remove 18 acres of native vegetation. As long as the stabilization and rehabilitation measures discussed in the surface use plan are faithfully adhered to, the native plant community would eventually return and weeds such as halogeton would be kept in check, and thus meet this standard.

Name of specialist and date: Kathy McKinstry 08/20/07

SPECIAL STATUS, THREATENED AND ENDANGERED SPECIES (plant)

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

Name of specialist and date: Hunter Seim 08/10/07

RIPARIAN SYSTEMS STANDARD: There are no wetlands or riparian zones present within the project area. This standard does not apply.

Name of specialist and date: Timothy Novotny 08/10/07

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 08/20/07

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 pad, pipeline corridor, and access road disturbances after reclamation practices and well abandonments have been successfully achieved.

Name of specialist and date: Roy McKinstry 08/20/07

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

FINDING OF NO SIGNIFICANT IMPACT (FONSI)
EA CO-100-2007-054

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 three 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 COC0081267, Ace Unit Well #13; COC038749B, Musser Well #27; and COC081267, Carl Allen Well #27, #28, and #29.

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: