

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-100-2006-065 EA

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

Hiawatha State 1A Well Pad & Access Road: COC070125

**PROJECT NAME:** Grynberg Well Pad & Access Road

**LEGAL DESCRIPTION:** Well Pad & Access Road in Moffat County, Colorado

Hiawatha State 1A Well: Tract 39A, Lot 9, Sec. 36, T12N, R101W,  
Access Road: Tract 39A, Lots 1 & 2, Sec. 35, Tract 39A, Lots 9, 10 & 11, Sec. 36,  
T.12N., R.101W., 6<sup>th</sup> P.M., Moffat County, Colorado

**APPLICANT:** Jack J. Grynberg

**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 project would be located within Management Unit 2 and Management Unit 3(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 objectives for Management Unit 3 are to improve soil and watershed values, increase forage production and enhance livestock grazing. Realty actions can occur consistent with the management objectives for the units.

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 the management units.

**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 ROW application has been posted on the public NEPA log of the Little Snake Field Office for a 30-day public review period beginning April 12, 2006, 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 grant a Right-of-Way to Jack J. Grynberg for an access road and well pad on BLM administered land located in the Hiawatha Field. The mineral estate is owned by the State of Colorado. A Right-of-Way (ROW) application has been submitted for the access road and the Hiawatha State 1A Well pad. The ROW includes a Plan of Development that covers mitigation of impacts to vegetation, soil, surface water, and other resources. Mitigation not incorporated by Jack Grynberg in the surface plan would be attached by the BLM as stipulations to the ROW grant.

The project is located approximately 50 miles southeast of Rock Springs, Wyoming. Construction work is planned to start during the summer of 2006 and the estimated duration of construction and drilling for the well is 45 to 60 days. A short access road would be constructed for the well. Total surface disturbance for road construction and the well pad would be 2.95 acres.

The proposed well pad would be cleared of all vegetation and leveled for drilling. The existing fence would be cut and new fence installed around the well pad. Topsoil and native vegetation would be stockpiled for use in reclamation. Approximately 1.54 acres would be disturbed for construction of the well pad. This would include the 200' by 300' well pad, the topsoil, and subsoil piles and excess cut area. A reserve pit would be constructed on the well pad to hold drill mud and cuttings. Water and sewage associated with the trailers will be hauled to an approved disposal facility. If a well is a producer, cut portions of the well site would be backfilled and unused portions of the well site would be stabilized and re-vegetated. If a gas well proves unproductive, it would be properly plugged and the entire well pad and short access road would be reclaimed.

Grynberg did not include plans for a gas sale pipeline with the Hiawatha State 1A Well. A detailed written statement of work would be filed with the BLM before pipeline installation for this well. This application would be assessed, when it is received, for environmental impacts of a gas sales pipeline.

**NO ACTION ALTERNATIVE:** The "no action" alternative is that the well pad and access road would not be permitted and therefore the well would not be drilled. Jack J. Grynberg holds a valid and current State oil and gas lease for the area where the proposed well would be located. Under the 1920 Mineral Leasing Act, the BLM has an obligation to allow mineral development if the environmental consequences are not irreversible or too severe. The ROW process is designed to overcome the no action situation of not accepting the ROW through the mitigation of predicted environmental consequences. Since the proposed action is consistent with the ROD and the Oil and Gas Leasing EIS, rejecting the ROW for the well pad and access road was considered but 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. The proposed action will not adversely affect the regional air quality.

Mitigative Measures: None

Name of specialist and date: Ole Olsen 6/9/06

**AREA OF CRITICAL ENVIRONMENTAL CONCERN**

Affected Environment: Not present.

Environmental Consequences: Not applicable.

Mitigative Measures: Not applicable

Name of specialist and date: Jim McBrayer – 8/4/06

**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: The proposed project, the Grynberg Hiawatha State Well #1A and Access Road has undergone a Class III cultural resource survey:

Martin, Curtis

2006 Grynberg Petroleum Company, Colorado State 1-A Well, Hiawatha State 2-36 Well, and Hiawatha State 3-36 Well and Access Road, Class III Cultural Resource Inventory. GRI No. 2621 BLM 11.2.06. Grand River Institute, Grand Junction, Colorado.

The survey identified 5MF6297 as a Need Data, possibly eligible to the National Register of Historic Places prehistoric cultural resource. The proposed project may proceed as described in this EA with the following mitigative measures in place.

Mitigative Measures: A construction barrier (fence), will need to be built between the Archaeological Site and the well pad to protect the Cultural Resource throughout the life of the project. Grynberg will be responsible for impacts to the site during construction, production and reclamation. The barrier will be built to BLM standards and Grynberg will be responsible for maintaining it for the life of the project. The barrier will need to be in place prior to any earthmoving activities.

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) 826-5095 or 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: Gary D. Collins June 1, 2006

**ENVIRONMENTAL JUSTICE**

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

Environmental Consequences: None.

Mitigative Measures: None.

Name of Specialist and Date: Louise McMinn, Realty Specialist 06/05/2006

**FLOOD PLAINS**

Affected Environment: Not present

Environmental Consequences: None

Mitigative Measures: None

Name of specialist and date: Ole Olsen 6/9/06

**INVASIVE, NONNATIVE SPECIES**

Affected Environment: Invasive species and noxious weeds occur within the affected area. Cheatgrass and halogeten are common along road disturbances and other areas which do not have adequate perennial plant communities to inhibit their annual establishment. Halogeton has become a very noticeable problem in the Hiawatha area, as well as other areas in the western portion of Moffat County. Canada thistle and other biennial thistles are fairly common and can be established in the affected area, especially in road ditches. Russian knapweed and hoary cress (whiteweed) are finding their way into the vicinity of the project and would also be capable of establishing in road ditches. 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 and operating the well 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 these weed species. Wind, water, recreation vehicles, livestock and wildlife will also assist with the distribution of weed seed into the newly disturbed areas. The operator will be required to control any invasive and/or noxious weeds that become established within the disturbed areas involved with drilling and operating the well. All principles of Integrated Pest Management should be employed to control noxious weeds on public lands.

Mitigative Measures: None

Name of specialist and date: Ole Olsen 6/9/06

### **MIGRATORY BIRDS**

Affected Environment: The proposed action is located in a sagebrush/grass community. Sagebrush at this site was scattered, with a sparse herbaceous understory of grasses. This habitat type provides limited foraging and nesting habitat for migratory bird species. Two sagebrush obligate species listed on USFWS's Bird of Conservation Concern List, the sage sparrow and the Brewer's sparrow may nest in the general Hiawatha area, but are unlikely to nest on the well site due to lack of nesting substrate. There are no raptor nests located in the vicinity of the proposed well site.

Environmental Consequences: The proposed action has a low potential to result in the take of any migratory bird species. If construction activities occur during the nesting season, there could be negative impacts to migratory bird species through nest destruction or increased stress leading to nest abandonment. As this would impact less than three acres of sagebrush habitat (including the well pad and access road), the potential of take would remain low. If construction activities are conducted outside of the nesting season, there is very little chance of take of any migratory bird species.

Mitigative Measures: None

Name of Specialist and Date: Desa Ausmus 6/5/06

### **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: Gary D. Collins June 1, 2006

## **PRIME & UNIQUE FARMLANDS**

Affected Environment: Not Present

Environmental Consequences: None

Mitigative Measures: None

Name of specialist and date: Ole Olsen 6/9/06

## **T&E SPECIES – ANIMALS**

Affected Environment: There are no threatened or endangered wildlife species or habitat for such species in or near the proposed well site. The Hiawatha area provides habitat for greater sage grouse, a BLM sensitive species. The area is mapped as sage grouse winter and nesting habitat by the Colorado Division of Wildlife. The proposed well site falls within a two mile radius of an active greater sage grouse lek.

Environmental Consequences: Although the proposed well site is located in mapped winter and nesting habitat, sagebrush stands at the well site did not meet characteristics of quality habitat for sage grouse. Shrub vegetation at the site was too sparse and sagebrush patch size was too small to provide suitable nesting or winter habitat for sage grouse. The project area does provide some habitat for grouse during non-critical times of the year or when moving to and from winter or nesting habitat. 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 and loss of habitat. Less than three acres of sage grouse habitat would be altered with the proposed action. Although one well site would not have significant impacts to sage grouse or their habitat, increased oil and gas development in the Hiawatha area has degraded sage grouse habitat. As development in Hiawatha increases, sage grouse use of the area will likely decrease.

Mitigative Measures: None

Name of Specialist and Date: Desa Ausmus 6/5/06

## **T&E SPECIES – PLANTS**

Affected Environment: There are no federally listed threatened or endangered plant species within or in the vicinity of the Proposed Action.

Environmental Consequences: None

Mitigative Measures: None

Name of specialist and date: Hunter Seim 6/6/06

### **T&E SPECIES - SENSITIVE PLANTS**

Affected Environment: There are no BLM sensitive plant species within or in the vicinity of the Proposed Action.

Environmental Consequences: None

Mitigative Measures: None

Name of specialist and date: Hunter Seim 6/6/06

### **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 environmental impact.

Environmental Consequences: Consequences will 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 will occur, but they can be remedied, and long-term impacts will be minimal.

Mitigative Measures: None

Name of specialist and date: D. Johnson 6/5/06

### **WATER QUALITY – GROUND**

Affected Environment: Near surface waters will be protected by the surface casing and cement behind pipe. Potable water is highly unlikely in this area.

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.

Mitigative Measures: None

Name of specialist and date: Fred Conrath 06/13/2006

### **WATER QUALITY – SURFACE**

Affected Environment: The access road and well pad would be located on a plateau where runoff water would flow through ephemeral drainages towards Canyon Creek. Canyon Creek is a

tributary to Vermillion Creek. Vermillion Creek and its tributaries within the affected environment must have water quality sufficient to support Aquatic Life Warm 2, Recreation 2 and Agriculture. Canyon Creek and Vermillion Creek are presently supporting classified uses. No impaired stream segments occur in the vicinity of the proposed action.

Environmental Consequences: The construction of the well location and drilling the well will utilize an existing road with only minor grading as needed. If production of the well occurs it will need to be upgraded for all weather access and stability. The resulting disturbance from the road and well location will add additional disturbed acreage in this landscape that will be subjected to accelerated erosion and a potential source of sediment and salts that could be carried to perennial waters.

Localized increases in water turbidity and contamination due to fluid leaks or spills from equipment are also potential impacts to adjacent soils or waterways as a result of the project. Increased sedimentation or salinity to Canyon Creek and Vermillion Creek during spring runoff or from high intensity summer/fall rainstorms would be the greatest potential impact to water quality, however it would be hard to distinguish or measure any added sediment or salts from the proposed action to these creeks in this badland landscape. Although some sediment may be transported off site and eventually reach perennial waters, the mitigation provided in the plan of operations and the Conditions of Approval attached to the Right-of-Way Grant will reduce the potential impacts to water quality caused by surface runoff from the site to an acceptable level.

Mitigative Measures: None

Name of specialist and date: Ole Olsen 6/9/06

### **WETLANDS/RIPARIAN ZONES**

Affected Environment: No wetlands or riparian zones exist in the project area.

Environmental Consequences: None

Mitigative Measures: None

Name of specialist and date: Desa Ausmus 6/5/06

### **WILD & SCENIC RIVERS**

Affected Environment: Not present.

Environmental Consequences: Not applicable.

Mitigative Measures: Not applicable

Name of specialist and date: Jim McBrayer – 8/4/06

## **WILDERNESS, WSAs**

Affected Environment: Not present.

Environmental Consequences: Not applicable.

Mitigative Measures: Not applicable

Name of specialist and date: Jim McBrayer – 8/4/06

## **NON-CRITICAL ELEMENTS**

### **FLUID MINERALS**

Affected Environment: The proposed action is in favorability zone 4 (highest for oil and gas potential).

Environmental Consequences: This is a State of Colorado approved well and the casing and cementing program will be approved by them.

Mitigative Measures: None

Name of specialist and date: Fred Conrath 06/13/2006

### **PALEONTOLOGY**

Affected Environment: The geologic formation at the surface is the Tertiary Age formation, Green River Formation, Luman Tongue unit (Tglu). This formation is a moderately resistant, light- to medium brown fissile oil shale, siltstone, sandstone, limestone, carbonaceous shale, coal, and conglomerate. Tglu is mapped in the Vermillion Creek area. Thickness is 100-150 meters. This formation has been classified a Class II formation for the potential for occurrence of scientifically significant fossils. Scientifically significant fossils are occasionally found within this formation (Armstrong & Wolney, 1989). The potential for discovery of significant fossils on this location is considered to be moderate.

Environmental Consequences: 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. This impact can be effectively mitigated by ceasing operations and notifying the Field Office Manager immediately upon discovery of a fossil during construction activities. 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: "Standard Discovery Stip", i.e., "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: Robert Ernst 6 June 2006

#### **RANGE MANAGEMENT/RANGE IMPROVEMENTS**

Affected Environment: The Proposed Action is adjacent to the Dry Lake Protection Fence, project #200659. This is a steel post, woven and barbed wire fence constructed in 1965. It establishes the boundary between the Dry Creek #04302 and Canyon-Horseshoe #04326 Allotments. By cooperative agreement, maintenance of this fence is shared 50-50 by the livestock operators on either side of the fence.

Environmental Consequences: Due to the proximity of the Proposed Action to the Dry Lake Protection Fence, the existing fence would need to be moved to accommodate well pad construction. Additionally, a fence would be constructed adjacent to the proposed access road as a cultural resources mitigation. The location of the existing, modified, and new fencing in relation to the Proposed Action is shown in Exhibit 2. The existing fence is a sheep wire fence of a type that the Little Snake Field Office no longer authorizes on public lands due to impacts to wildlife movement. Any new fence construction or modification would be of a three or four wire design with BLM standard wire spacing to alleviate the impact of sheep wire fencing.

The "wing" fence that would protect cultural resources would present a formidable trap for livestock and wildlife, particularly during the winter as northerly winds push animals south and along the existing fence. Animals bunching up within the trap created by the wing fence would place considerable pressure on existing fencing, resulting in increased maintenance to both fences and potential failure of future reclamation activities on this site. This fence should only remain in place as long as active drilling is occurring.

## Mitigation Measures:

- 1) Jack J. Grynberg will provide all labor and materials for the construction and maintenance of any new fencing or modification of existing fencing.
- 2) All fencing, whether new construction or modification of existing fencing, will be built to BLM specifications. Specifically, fences will be constructed with metal T-posts, 12 feet apart with one wooden stay placed at the midpoint between each T-post. Endpoints, corners, and angles will be constructed with wooden H-braces built to BLM specifications. The bottom wire of all fencing will be smooth wire. The number of wires and wire spacing will be as follows:
  - a. The fence constructed along the access road will be three wires, bottom wire smooth. Wires will be spaced at 16", 26", and 38" from the ground.
  - b. The modification to the existing Dry Creek Protection Fence will be four wires, bottom wire smooth. Wires will be spaced at 15", 22", 30", and 38" from the ground.
- 3) Jack J. Grynberg will notify the livestock operators on both sides of the Dry Creek Protection Fence prior to any modifications of the fence. BLM will provide the contact information upon request. Jack J. Grynberg will provide a diagram of fence modifications and location of new fencing to both operators.
- 4) Prior to any fence construction or modification, Jack J. Grynberg will enter into a Cooperative Agreement for Range Improvements with the Little Snake Field Office. The cooperative agreement will specify that construction and maintenance responsibilities are with Jack J. Grynberg.
- 5) Upon completion of interim reclamation after well completion, Jack J. Grynberg will move all necessary production facilities and structures north of the original line of the Dry Creek Protection Fence, remove all modified sections of the fence, and reconstruct the removed portion of the fence in its original location. Reconstruction will be the same four wire design described above. Once this is completed, maintenance responsibility will revert back to the livestock operators.
- 6) Upon well completion and implementation of interim reclamation, the "wing" fence along the access road will be removed by Jack J. Grynberg. All fence materials will be removed from the site.

Name of specialist and date: Hunter Seim 6/6/06

## **REALTY AUTHORIZATIONS**

Affected Environment: The project route crosses or is adjacent to existing realty authorization COC40600, held by Northern Pump Company.

Environmental Consequences: Existing pipelines could be accidentally damaged during construction activities. Impacts would be temporary until the damage is repaired.

Mitigative Measures: Damage to existing pipelines would be minimized by:

- Utilize the “One Call” system to locate and stake the centerline and limits of all underground facilities in the area of proposed excavations.
- Provide 48 hour notification to the owner/operator of facilities prior to performing any work within 10 feet of buried or above ground pipelines.

Name of Specialist and Date: Louise McMinn 6/12/2006

## **SOILS**

Affected Environment: The primary soil mapping unit in the area of the access road and well pad is the Leswill-Rogrube complex, 1 to 7 percent slopes. These soils were derived from residuum derived from gypsiferous shale. Within this soil complex 50% of the area is Leswill soil and 30% of the area is Rogrube soil. The Leswill clay loam soil supports an Alkali Upland Ecological Site and is typically dominated by saltbush, whereas the Rogrube loam soil supports the Loamy 7-10 (precipitation total) Ecological Site and is typically dominated by Wyoming big sagebrush. The Leswill soil is moderately saline and strongly sodic. The Rogrube soil is slightly saline and slightly sodic. Below the surface soils the deep soil profiles and soil properties are very similar with clay loam and silty clay loam subsoils; high water holding capacities, moderately slow permeability, medium runoff and low shrink-swell potentials would be expected.

Environmental Consequences: Loss of topsoil, reduced soil fertility, soil compaction, and possible soil contamination are impacts most likely to occur. Increased soil erosion from wind and water would occur during construction of the well pad and access road. A minor amount of accelerated erosion would be expected throughout the operational life of the well. Soil fertility would decline due to lacking or reduced vegetative cover and roots, reduced soil microbial activity, impaired water infiltration, mixing of soil horizons and topsoil loss. It is expected that these impacts would be reduced to an acceptable level by mitigation described in the plan of operations and Conditions of Approval in the approved Right-of-Way Grant, which will address topsoil salvage, interim reclamation and water management. Additional mitigative measures may need to be employed to reduce accelerated erosion if it begins to occur within or on constructed drainage and diversion ditches, surface drainages affected by the road or well pad, and well pad embankments.

Mitigative Measures: Additional mitigative measures will 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 or well pads.

Name of specialist and date: Ole Olsen 6/9/06

## **VEGETATION**

Affected Environment: The Proposed Action lies within a sagebrush-grass plant community. Dominant species include Wyoming big sagebrush (*Artemisia tridentata wyomingensis*), shadscale (*Atriplex confertifolia*), Hood's phlox (*Phlox hoodii*), Indian ricegrass (*Oryzopsis hymenoides*), needle-and-thread (*Stipa comata*), western wheatgrass (*Agropyron smithii*), and Sandberg bluegrass (*Poa sandbergii*).

Environmental Consequences: The Proposed Action would completely eliminate approximately 2 acres native vegetation. This disturbance would be minimal and insignificant within the larger landscape, however it would be in addition to 17 other wells existing within a one mile radius. If the well is a producer, reclamation upon well completion would lessen the area of disturbance by reseeding native vegetation, however the disturbances associated with the new and upgraded roads would remain. If the well is not a producer, the entire disturbance, including the new access road would be reclaimed, eliminating most of the long-term impact to the plant community. This area is highly susceptible to halogeton invasion both at the site of disturbances and within the adjacent plant communities. Revegetation is also difficult and slow due to the aridity of the area. If the operator diligently adheres to weed control and revegetation stipulations, the long term impacts to the plant community would be minimal.

Mitigative Measures: None

Name of specialist and date: Hunter Seim 6/7/06

## **WILDLIFE, AQUATIC**

Affected Environment: No aquatic wildlife or habitat for aquatic wildlife exists in the project area.

Environmental Consequences: None

Mitigative Measures: None

Name of Specialist and Date: Desa Ausmus 6/5/06

## **WILDLIFE, TERRESTRIAL**

Affected Environment: The proposed project area provides year round habitat for pronghorn antelope and mule deer in all but the most severe winters. The proposed well site and access road are located on a historic white-tailed prairie dog town. Although many of the prairie dog colonies in Hiawatha are beginning to recover from a sylvatic plague epidemic in the early 1990s, no active prairie dog burrows were found on the proposed well site. The project area also provides habitat for a variety of small mammal, bird and reptile species.

Environmental Consequences: Impacts to wildlife 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, increased stress and loss of habitat. These impacts are more significant during critical seasons, such as winter or reproduction. Although the project area does not provide critical habitat for wildlife species, some impacts to wildlife would still be expected from this project. Impacts would mostly occur from habitat modification or displacement during construction activities. Construction of the proposed well site and access road should not significantly impact terrestrial wildlife species utilizing the project area.

Most small mammals, birds and reptiles using the project area would be capable of avoiding construction equipment and should not be directly harmed by these activities. Some burrowing animals may be killed by construction equipment. This should be considered a short-term negative impact that is not likely to harm populations of any species.

During a site visit in May 2006, no active burrows were found on the proposed well site. Most of the burrows had collapsed to the extent that no wildlife would be able to use them. Several active burrows were found in the general project area. Construction of the road and well pad would not impact active burrows adjacent to the project area.

Mitigative Measures: None

Name of Specialist and Date: Desa Ausmus 6/5/06

**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	LM 6/12/06		
Hydrology/Ground		FC 6/13/06	
Hydrology/Surface		OO 6/9/06	
Paleontology			See Paleontology
Range Management			JHS 6/7/06
Realty Authorizations			LM 6/12/06
Recreation/Travel Mgmt		RS 06/12/06	
Socio-Economics		LM 06/05/06	
Solid Minerals		RE 6/6/06	
Visual Resources		JM 6/19/06	
Wild Horse & Burro Mgmt	LM 6/19/06		

**CUMULATIVE IMPACTS SUMMARY:** Cumulative impacts may result from the development of the Jack Grynberg well and access road 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 Hiawatha 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. Only a small reduction in available forage would be anticipated. Some wildlife species may be temporarily displaced by construction at the well site and access road, but should return once construction is completed. 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.

Over the last 20 years there has been a slow but steady increase in oil and gas production facilities within and adjacent to Vermillion Creek. Cultural resource surveys in the area have identified several prehistoric cultural resources. These resources were at one time further away from the industry activity. Now they are in close proximity to these facilities. As the Hiawatha Field is in-filled, with more pipeline, compressors, access roads, and pads being constructed, a real potential for impacts to known and yet to be recorded cultural resources is present.

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 weeds increase. 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 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 livestock. 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. Utilization and production monitoring of unaffected areas remaining in the allotment would be necessary to determine a proper stocking rate after accounting for the loss of available forage from gas development (both direct and indirect) if improving precipitation patterns result in better forage conditions throughout the allotment.

Vermillion Creek and the surrounding areas have experienced an increase in oil and gas development in recent years. Over 35 miles of roads connect numerous wells in the Colorado portion of T12N, R101W. Little development exists west of Canyon Creek; however, there are 61 producing and 28 abandoned but unreclaimed wells east of the project area in T12N, R100W. Pad construction and the associated infrastructure of roads lead to fragmentation of habitat for wildlife species. As this area is developed, it can be expected that wildlife use of the area would decrease due to habitat fragmentation and decrease in security.

Many historic raptor nests associated with Vermillion Creek and Canyon Creek have not been active for the past several years. Oil and gas development may have made this area less suitable for these species by increasing disturbance, decreasing nest security and removing habitat for prey species. It is probable that raptors have moved away from developing areas to nest. As oil and gas development moves along the creek, it may disturb any new nests. Eventually, some raptors may be able to habituate to the increased disturbances. Habitat fragmentation from well pad construction and the associated roads have likely decreased the nesting suitability for other migratory birds. 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.

Even with the amount of activity in the area, it is unlikely that oil and gas development would have significant impacts to white-tailed prairie dogs. New road construction provides a corridor for prairie dog movement, increasing the likelihood that inactive towns would be re-colonized in the future. Fragmentation of habitat does not seem to impact prairie dogs as severe as other species, providing that suitable forage remains.

The cumulative impacts of the new well and associated road and the amount of gas development already existing in the area, will continue to degrade habitat for the greater sage grouse. Although there are no leks located on the area, the project area does provide habitat cover for sage grouse. Fragmentation, mostly due to road construction, is an important factor contributing to a decrease in habitat quality. Oil and gas development combined with sagebrush die-offs may 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 may still have some impacts to mule deer and antelope. Timing stipulations adequately protect big game species during critical times of the year. An increase in vehicle traffic will occur as the Hiawatha Field is developed. A significant impact to big game may be vehicle-animal collisions, as these are a major cause of mortality for big game species.

The cumulative effects of projected oil and gas development are minimized through Best Management Practices identified in the Plan of Development and the BLM required mitigation in the stipulations for the ROW. Proper construction and drilling practices must comply with federal and state environmental regulations.

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 provides habitat for a variety of wildlife species. The proposed action is not expected to significantly impact wildlife species or their habitat. The proposed action would not preclude this standard from being met.

Name of specialist and date: Desa Ausmus 6/5/06

**SPECIAL STATUS, THREATENED AND ENDANGERED SPECIES (animal) STANDARD:** The project area provides habitat for greater sage grouse, a BLM sensitive species. The project is not expected to significantly impact greater sage grouse or their habitat. The proposed action would not preclude this standard from being met.

Name of specialist and date: Desa Ausmus 6/5/06

**PLANT AND ANIMAL COMMUNITY (plant) STANDARD:** The plant community is currently meeting this standard. Plant diversity, density, and vigor are all appropriate for the site indicating that it should have adequate resiliency to remain intact and/or recover from most disturbances. As long as proper reclamation practices are followed along with an integrated weed management program, the Proposed Action will meet this standard. The No Action Alternative would meet this standard as the proposed disturbances would not occur.

Name of specialist and date: Hunter Seim 6/7/06

**SPECIAL STATUS, THREATENED AND ENDANGERED SPECIES (plant) STANDARD:** There are no federally listed threatened or endangered or BLM sensitive plant species within or in the vicinity of the Proposed Action. This standard does not apply.

Name of specialist and date: Hunter Seim 6/6/06

**RIPARIAN SYSTEMS STANDARD:** The riparian standard for healthy public lands will not be affected by the proposed action.

Name of specialist and date: Desa Ausmus 6/5/06

**WATER QUALITY STANDARD:** The proposed action will meet the public land health standard for water quality. In the event a producing well is established, interim reclamation of the unused area on the well pad and improving the access road to insure stability and provide drainage will be completed to help reduce sheet and rill erosion from the site. When the well pad is no longer needed for production operations, the disturbed areas would be reclaimed to

approximate original contours, topsoil would be redistributed and adapted plant species would be seeded. These Best Management Practices will help to reduce accelerated erosion of the site and when full reclamation, including revegetation is achieved normal soil infiltration and runoff could be reestablished. No stream segments near this project are listed as impaired.

Name of specialist and date: Ole Olsen 6/9/06

**UPLAND SOILS STANDARD:** The proposed action will not meet the upland soil standard for land health, but it is not expected to be met while surface disturbance resulting from the well pad and access road are used for operations and/or remain un-reclaimed. The well pad and access road will not exhibit the characteristics of a healthy soil. Initially, during the drilling phase minor blading or improvements along the access road will minimize areas disturbed to access the well pad and if production is not established reclamation of this area should be hastened. In the event production is established interim reclamation of the unused area of the well pad will be required and this will reduce the initial size of the disturbed area. Several Best Management Practices have been designed into the project or they are attached as mitigating measures that will reduce impacts to and conserve soil materials. Upland soil health will return to the well pads and access road disturbances after well abandonment and reclamation practices have been successfully achieved.

Name of specialist and date: Ole Olsen 6/9/06

**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-100-2006-065**

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 authorization of the access road and well pad in conformance with the approved land use plan. It is my decision to issue the right-of-way grant with mitigation measures to Jack J. Grynberg. The grant is for construction, operation, maintenance and termination of an access road and well pad located on public land: Hiawatha State 1A Well: Tract 39A, Lot 9, Sec. 36, T12N, R101W, Access Road: Tract 39A, Lots 1 & 2, Sec. 35, Tract 39A, Lot 9, Sec. 36, T.12N., R.101W., 6<sup>th</sup> P.M., Moffat County, Colorado. The access road ROW is 1500 feet long and 20 feet wide and the well pad area is 1.54 acres. The R/W grant is issued for 20 years with the right of renewal. The ROW is subject to rental pursuant to 43 CFR 2806. The project will be monitored as stated in the Compliance Plan outlined below.

It is the policy of the Bureau of Land Management to grant ROW to occupy and use public land where such is consistent with resource values; the Bureau's planning system and local government concerns. To this effect, no conflicts were found; the action does not result in any undue or unnecessary environmental degradation. The action is consistent with the Little Snake Resource Management Plan. The proposed use, as planned and mitigated, is a suitable use of the land, which will not conflict, with the present or known future use of the area. The action is consistent with Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761) and the regulations authorizing use of federal land under 43 CFR 2800.

**MITIGATION MEASURES:** See Exhibit B, Stipulations.

**COMPLIANCE PLAN(S):**

**Compliance Schedule:** The access road will be on a five-year compliance schedule after issuance of the grant.

**Monitoring Plan:** The access road and well pad will be monitored during the term of the right-of-way for compliance with the grants, stipulations, PODs and pertinent regulations until final reclamation is approved or the ROW is relinquished; 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 schedules and monitoring plans will be assigned to the Realty staff in the Little Snake Field Office. The primary inspector will be the Realty Specialist.

**SIGNATURE OF PREPARER:**

**DATE SIGNED:**

**SIGNATURE OF ENVIRONMENTAL REVIEWER:**

**DATE SIGNED:**

**SIGNATURE OF AUTHORIZED OFFICIAL:**

**DATE SIGNED:**

Exhibit B  
Stipulations

1. The Little Snake Field Office will be given 48-hour notification prior to commencing construction and/or reclamation work. Contact the Little Snake Field Office (970) 826-5000 to report work, which will commence.
2. No hazardous materials, hazardous wastes, or trash will be disposed of on public lands or on private surface overlying the oil and gas lease. If a release does occur, it will be reported to the Little Snake Field Office immediately at (970) 826-5000.
3. The area to be utilized for storage of the reserve pit overburden will have the brush cleared and the topsoil salvaged before excavation of the reserve pit commences.
4. All survey stakes representing the leveled drill pad, the crest of excavations, the toe of embankments, the reserve pit, and the access road will be in place prior to construction. Staking shall include the well location, two 200-foot directional reference stakes, the exterior dimensions of the drill pad, reserve pit and other areas of surface disturbance, cuts and fills, and centerline flagging of new roads with road flagging being visible from one to the next.
5. Construction activities will not be allowed to commence if the topsoil cannot be separated from the subsoil during adverse environmental conditions (i.e. when soils are frozen or muddy).
6. Surface disturbance and vehicular travel will be limited to the approved location and approved access route. Any additional area needed will be approved in advance.
7. Drainage for runoff water will be provided to divert runoff water away from the reserve pit, cut portions of the well location and the topsoil stockpile. Runoff water that concentrates and forms channels on the well location will be diverted and/or dispersed to prevent erosion of the fill slopes. Any ditches designed to provide runoff drainage will be constructed on a minimal grade and will release water onto undisturbed ground without causing accelerated erosion. The operator will take additional measures if erosion is occurring within the runoff water drainage system.
8. 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 timeframe. Operations will resume only upon written notification by the Authorized Officer.
9. STANDARD STIPULATION: If cultural or paleontological resources are discovered during exploration operations under this license, the licensee shall immediately notify the Field Officer Manager and shall not disturb such discovered resources until the Field Officer Manager issues specific instructions.
  - a. Within 5 working days after notification, the Field Office Manager shall evaluate any cultural resources discovered and shall determine whether any action may be required to protect or to preserve such discoveries.
  - b. The cost of data recovery for cultural resources discovered during exploration operations shall be borne by the licensee, if the licensee is ordered to take any protective measures. Ownership of cultural resources discovered shall be determined in accordance with applicable law.
  - c. 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 (970) 826-5087. Within five working days the Authorized Officer will inform the operator as to:
    1. Whether the materials appear eligible for the National Register of Historic Places;
    2. The mitigation measures the operator will likely have to undertake before the identified area can be used for project activities again and,

d. 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 Authorized Officer 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 Authorized Officer will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the Authorized Officer that the required mitigation has been completed, the operator will then be allowed to resume construction.

e. 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 Authorized Officer, by telephone (970) 826- 5087, 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.

10. The reserve pit will be designed to exclude runoff water and maintain a 2-foot freeboard between the maximum fluid level and the lowest point of containment. The reserve pit will not be used for disposal of any materials or fluids, except for materials or fluids specifically addressed in the drilling program or having a subsurface origin. If oil or oily substance is in the reserve pit, it must be removed within 30 days after the drilling rig is removed. Netting will be installed if oily substance is present in the reserve pit.

11. The perimeter of the reserve pit and production pits, if any, will be fenced with woven wire with 2 strands of barbed wire, properly spaced, on the top and all held in place by side posts and corner H-braces to inhibit entry by livestock and wildlife. The fence will be maintained until backfilling or removal of facilities occurs.

12. In the event downhole operations threaten to exceed the required 2-foot freeboard, regarding reserve pit fluids, immediate notification will be provided to the Authorized Officer with concurrent steps taken to minimize the introduction of additional fluids, until alternative containment methods can be approved.

13. Reserve pit fluids will be allowed to evaporate through one entire summer season (June-August) after drilling is completed, unless an alternative method of disposal is approved. After the fluids disappear, the reserve pit mud will be allowed to dry sufficiently to allow backfilling. The backfilling of the reserve pit will be completed within 30 days after dry conditions exist and will meet the following minimum requirements:

- a. Backfilling will be done in such a manner that the mud and associated solids will be confined to the pit and not squeezed out and incorporated in the surface materials.
- b. There will be a minimum of 5 feet of cover (overburden) on the pit.
- c. When the work is completed, the pit areas will support the weight of heavy equipment without sinking and over time shall not subside over 6-inch depth.

14. If installed, production facilities will be located on cut portions of the existing drill pad.

15. In the event production is established, all land surfaces that are to remain free of vegetation (roads and well location) will be monitored for and protected from wind erosion; dry powdery soil will be treated to minimize wind erosion. The unused disturbed areas surrounding the well location will be re-contoured to appropriate confirmation as soon as possible. Some or all of the stockpiled topsoil will be evenly distributed over these re-contoured areas. Brush cleared prior to construction of the well site shall be scattered back over the re-contoured area.

16. Prior approval is required to remove reserve pit fluids from the reserve pit; a request of this type will need to include the destination of the fluids and if the destination is not a State approved facility, the request will include State approval of the destination.

17. All pits, cellars, rat holes and other bore holes unnecessary for further lease operations, excluding the reserve pit, will be backfilled immediately after the drilling rig is released. Pits, cellars and/or bore holes that remain on location must be fenced as specified for the reserve pit in the applicant's Surface Use Plan.

18. In the event a producing well is established, all new production equipment, which has open-vent exhaust systems, will have these exhaust systems constructed in such a way to prevent the entry and perching of birds and bats.

19. All permanent structures (on-site for six months or longer) constructed or installed (including oil well pumpjacks) will be painted a flat, non-reflective, earthtone color to match the standard environmental colors, as determined by the Rocky Mountain Five-State Interagency Committee (Shale Green). All facilities will be painted within six months of installation. Facilities required to comply with OSHA (Occupational Safety and Health Act) will be excluded.

20. Surface facilities should appear to blend in to the existing landscape to the greatest possible extent. Facilities should not be located on ridgelines or extend above them. Facilities should be minimal in size (or located underground) and colored and texture to blend in with the surroundings.

21. A containment berm must be installed around all storage tanks, including temporary tanks. Compaction and construction of the berm surrounding the tank or tank battery will be designed to prevent lateral movement of fluids through the utilized materials, prior to storage of fluids. The berm must be constructed to contain at minimum 110 percent of the storage capacity of the largest tank within the berm. All loading lines will be placed inside the berm.

22. Control of noxious weeds will be required through successful vegetation establishment and/or herbicide application. It is the responsibility of the lease operator to insure compliance with all local, state, and federal laws and regulations, as well as labeling directions specific to the use of any given herbicide.

### 23. Reclamation Performance Standard

The lessee is required to use the reclamation practices necessary to reclaim all disturbed areas. Reclamation will ensure surface and subsurface stability, growth of a self-regenerating permanent vegetative cover and compatibility with post land use. The vegetation will be diverse and of the same seasonal growth as adjoining vegetation. Post land use will be determined by the Authorized Officer but normally will be the same as adjoining uses.

Reclamation practices which must be applied or accomplished are: re-grading to the approximate original contour, effectively controlling noxious weeds, separating, storing and protecting topsoil for redistribution during final abandonment, seeding and controlling erosion. If topsoil is not present, or quantities are insufficient to achieve reclamation goals, a suitable plant growth media will be separated, stored and protected for later use. Reclamation will begin with the salvaging of topsoil and continue until the required standards are met. If use of the disturbed area is for a short time (less than one year), practices, which ensure stability, will be used as necessary during the project, and practices needed to achieve final abandonment will commence immediately upon completion of the approved activity use and be completed, with the exception of vegetative establishment, within one year. If use of the area is for longer periods of time (greater than one year), interim reclamation is required on the unused areas. Interim reclamation of the unused areas will begin immediately upon completion of the permanent facility(s) and be completed, with exception of vegetative establishment, within one year. For both short and long term projects vegetative establishment will be monitored annually. If the desired vegetation is not established by the end of the second growing season, cultural practices necessary for establishment will be implemented prior to the beginning of the next growing season. Interim reclamation, unless otherwise approved, will require meeting the same standards as final abandonment with the exception of original contour, which may be only partially achievable.

Annual reports consisting of reclamation practices completed and the effectiveness of the reclamation will be provided to the Little Snake Field Office. The first report will be due in January following initiation of reclamation practices and annually thereafter until final abandonment is approved.

There are numerous reclamation practices and techniques that increase the success rate of reclamation and stabilization. With the exception of those stated above, it is the lessee's prerogative to use those (s)he chooses to accomplish the objective. However, it is recommended that state-of-the-art reclamation, stabilization, and management practices be used to achieve the desired objective in a timely and cost-effective manner.

The following definitions and measurements will be used to accomplish and determine if reclamation has been achieved:

Permanent vegetative cover will be accomplished if the basal cover of perennial species, adapted to the area, is at least ninety (90) percent of the basal cover of the undisturbed vegetation of adjoining land or the potential basal cover as defined in the Soil Conservation Service Range Site(s) for the area.

Diverse will be accomplished if at least two (2) perennial genera and three (3) perennial species, adapted to the area, make up the basal cover of the reclaimed area in precipitation zones thirteen (13) inches or less and three (3) perennial genera and four (4) perennial species in precipitation zones greater than thirteen (13) inches. One species will not make up more than fifty (50) percent of the perennial vegetation by basal cover.

Self-regenerating and adapted to the area will be evident if the plant community is in good vigor, there is evidence of successful reproduction, and the species are those commonly used and accepted in the area.

Surface stability will be accomplished if soil movement, as measured by deposits around obstacles, depths of truncated areas, and height of pedestalling, is not greater than three tenths (0.3) of an inch and if erosion channels (rills, gullies, etc.) are less than one (1) inch in depth and at intervals greater than ten (10) feet.

If this standard is not met by the end of the second growing season, two alternatives exist depending on the severity of the erosion:

If erosion were greater than two (2) times the allowable amount, corrective action would have to be taken by the responsible company at that time.

If erosion is less than or equal to two (2) times the allowable amount, and it is determined the erosion occurred during vegetative establishment and the site may become stable, no corrective action would be required at that time. Another check (and measurement) would be performed a year later to determine if stability standards had been met. If the original measurements have not increased by more than the allowed standard, the standard would be considered met. However, if the increase were greater than the allowed standard, corrective action would be required.

Subsurface stability (mass wasting event) is of concern if disturbance has included excavation over four (4) feet in depth and greater than 10,000 square feet in area on slopes thirty five (35) percent and greater, or on any erosion-prone slope (Danforth Hills, Vermillion Bluffs, and badland areas). When these conditions occur, length of liability for reclamation and final abandonment will continue for ten (10) years following re-contouring to original contour or for such time that climatic patterns provide two (2) consecutive years in which measurable precipitation totals at least 120 percent of average from October 1 through September 30, as measured by data averaged from nearby regional weather stations.

The Authorized Officer may waive this stipulation, or portions of it. Such waiver will be documented and justified when not applicable, or when objectives are accomplished through another method.

## **SITE SPECIFIC CONDITIONS**

1. A construction barrier (fence), will need to be built between the Archaeological Site and the well pad, to protect the Cultural Resource throughout the life of the project. Grynberg will be responsible for impacts to the site

during construction, production, and reclamation. The barrier will be built to BLM standards, and Grynberg will be responsible for maintaining it. The barrier will need to be in place **prior to any earthmoving activities**.

2. Jack J. Grynberg will provide all labor and materials for the construction and maintenance of any new fencing or modification of existing fencing.
3. All fencing, whether new construction or modification of existing fencing, will be built to BLM specifications. Specifically, fences will be constructed with metal T-posts, 12 feet apart with one wooden stay placed at the midpoint between each T-post. Endpoints, corners, and angles will be constructed with wooden H-braces built to BLM specifications. The bottom wire of all fencing will be smooth wire. The number of wires and wire spacing will be as follows:
  - a. The fence constructed along the access road will be three wires, bottom wire smooth. Wires will be spaced at 16", 26", and 38" from the ground.
  - b. The modification to the existing Dry Creek Protection Fence will be four wires, bottom wire smooth. Wires will be spaced at 15", 22", 30", and 38" from the ground.
4. Jack J. Grynberg will notify the livestock operators on both sides of the Dry Creek Protection Fence prior to any modifications of the fence. BLM will provide the contact information upon request. Jack J. Grynberg will provide a diagram of fence modifications and location of new fencing to both operators.
5. Prior to any fence construction or modification, Jack J. Grynberg will enter into a Cooperative Agreement for Range Improvements with the Little Snake Field Office. The cooperative agreement will specify that construction and maintenance responsibilities are with Jack J. Grynberg.
6. Upon completion of interim reclamation after well completion, Jack J. Grynberg will move all necessary production facilities and structures north of the original line of the Dry Creek Protection Fence, remove all modified sections of the fence, and reconstruct the removed portion of the fence in its original location. Reconstruction will be the same four wire design described above. Once this is completed, maintenance responsibility will revert back to the livestock operators.
7. Upon well completion and implementation of interim reclamation, the "wing" fence along the access road will be removed by Jack J. Grynberg. All fence materials will be removed from the site.
8. A Pesticide Use Proposal (PUP) will be approved prior to application of herbicides and/or other pesticides on Federal surface; contact the Little Snake Field Office to obtain a PUP form to request this authorization. Submit the PUP two (2) months in advance of planned application. In the event you elect to apply herbicide or other pesticide as described and authorized on the approved PUP, you must report this use within 24 hours on Bureau of Land Management form titled Pesticide Application Record.
9. The access road constructed will be crowned, ditched, and maintained to provide a 12 to 14 foot travel way. Total width of authorized disturbance is 20 feet. Water turnouts needed to provide additional drainage from the road ditch will be constructed not to exceed 2 percent slope to minimize soil erosion.
10. Culverts will be installed keeping the inlet and the outlet on original grade and sized to adequately drain the surface runoff. (18" minimum)
11. In the event that topsoil cannot be properly distributed during reclamation, additional precautions will be taken to minimize erosion of subsoil. Periodic monitoring to assess site specific environmental conditions, timing of operations, and use of mulches and/or barriers may be required to ensure that erosion is not significant within the entire well pad location disturbance and access road easement.

12. Additional mitigative measures will 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 road, well pad, well pad embankments, or pipeline corridor.
13. Utilize the “One Call” system to locate and stake the centerline and limits of all underground facilities in the area of proposed excavations.
14. Provide 48-hour notification to the owner/operator of facilities prior to performing any work within 10 feet of buried or aboveground pipelines.
15. In the event that topsoil cannot be properly distributed during reclamation, additional precautions will be taken to minimize erosion of subsoil. Periodic monitoring to assess site specific environmental conditions, timing of operations, and use of mulches and/or barriers may be required to ensure that erosion is not significant within the entire well pad location disturbance, road easement, and pipeline easement.
16. The holder shall construct, operate, and maintain the facilities, improvements, and structures within the permit in strict conformity with the plan(s) of development identified with the application. Any relocation, additional construction, or use that is not in accord with the approved plan(s) of development, shall not be initiated without the prior written approval of the authorized officer. A copy of the complete permit, including all stipulations and approved plan(s) of development, shall be made available on the permit area during construction, operation, and termination to the authorized officer. Noncompliance with the above will be grounds for an immediate temporary suspension of activities if it constitutes a threat to public health and safety or the environment.
17. Construction sites shall be maintained in a sanitary condition at all times; waste materials at those sites shall be disposed of promptly at an appropriate waste disposal site. ‘Waste’ means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.
18. No excess equipment, materials, supplies or junk will be stored on the location after completion of the well.
19. Prior to termination of the right-of-way, the holder shall contact the authorized officer to arrange a pretermination conference. This conference will be held to review the termination provisions of the permit.
  - a. Approval of this application does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease, which would entitle the applicant to conduct operations thereon.
  - b. All produced liquids must be contained, including the dehydrator vent/condensate line effluent. All production pits must be bermed and fenced.
  - c. Produced water from newly completed wells may be temporarily disposed of into the reserve pit for a period of up to 90 days.