ENVIRONMENTAL ASSESSMENT

Buffalo Gap Federal 35-1H

BLM

Cody Field Office, Wind River/Bighorn Basin District, Wyoming

January 2011

The BLM's multiple-use mission is to sustain the health and productivity of the public lands for the use and enjoyment of present and future generations. The Bureau accomplishes this by managing such activities as outdoor recreation, livestock grazing, mineral development, and energy production, and by conserving natural, historical, cultural, and other resources on public lands.

BLM/WY/PL-11/014+1310

DOI-BLM-WY020-EA11-11

Table of Contents

1.0 INTRODUCTION

POGO Producing Company, LLC submitted a Notice of Staking for the Buffalo Gap Federal 35-1H to the Cody Field Office on August 25, 2010. An onsite inspection of the proposal was held on Wednesday, September 29, 2010 as required by Onshore Order #1. The onsite was attended with by POGO Producing, Dana Consulting, P.E. Grosch Construction, Inc., Banko Petroleum Management, Inc., and the Bureau of Land Management (BLM)-Cody Field Office Interdisciplinary Team (IDT).

On November 12, 2010, POGO Producing Company, LLC (operator) submitted for approval, to the BLM-Cody Field Office, an Application for Permit to Drill (APD) located in the 6th PM, Big Horn County, Wyoming, T53N, R95W, Section 35, SESE (see map in Appendix A).

Newly signed (12/22/2010), Secretarial Order 3310, Protecting Wilderness Characteristics on Lands Managed by the Bureau of Land Management, identified the Bureau's necessity to inventory and screen lands as possibly wilderness in character. The Cody Field Offices updated the wilderness in character inventory in 2010.

This EA is a site-specific analysis of potential environmental impacts that could result, with the implementation of the proposed action, or alternatives to the proposed action. The EA assists the BLM in decision making ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any "significant" impacts could result from the analyzed actions. "Significance" as defined by NEPA is found in regulation 40 CFR 1508.27 and on page 70, of the BLM's National Environmental Policy Act Handbook H-1790-1, January 2008.

Significance is defined as *"effects of sufficient context and intensity that an environmental impact statement is required."*

An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of "Finding of No Significant Impact" (FONSI). If the decision maker determines that this project has "significant" impacts following the analysis in the EA, then an EIS would be prepared for the project.

If impacts are found to not be significant, then a Decision Record (DR) may be signed for the EA approving the selected alternative; whether it is the proposed action or choosing another alternative.

1.1 Purpose and Need for the Proposed Action

The purpose of the action is to provide the lease holders with legal access to develop oil and gas resources consistent with lease rights. The need for the action is established by the BLM"s responsibility under FLPMA and the Mineral Leasing Act to respond to an Application for Permit to Drill.

Decision to be Made: The BLM will decide whether or not to approve this APD, and if so, under what terms and conditions.

1.2 Relationship to Statutes, Regulations, Plans or Other Environmental Analyses

This EA is prepared in accordance with NEPA and in compliance with all applicable regulations and laws passed subsequently, including Council on Environmental Quality (CEQ) regulations (40 C.F.R., Parts 1500-1508), U.S. Department of the Interior (USDI) requirements (Department Manual 516, Environmental Quality), and guidelines listed in BLM's NEPA Handbook, H-1790-1 (BLM January 2008). The proposed project would be consistent with other federal, state, and local laws, rules, and regulations and the applicant would procure any required permits or easements prior to the commencement of project activities.

This action conforms to the Cody Resource Management Plan/Environmental Impact Statement (RMP), (Record of Decision signed November 8, 1990) as required by 43 CFR 1610.5. This plan specifies an objective "*The minerals management objective is to maintain or enhance opportunities for mineral exploration and development, while providing protection or enhancement of other resource values*", (Cody Record of Decision, page 21).

1.3 Scoping, Public Involvement, and Issues

Issues that would be analyzed are Air Quality, Livestock Grazing, Hazardous or Solid Wastes, Invasive, Non-Native Species, Noxious Weeds, Cultural Resources, Native American Religious Concerns, Geology, Paleontology and Mineral Resources, Soils, Wyoming BLM Sensitive Species and Threatened and Endangered Species, Vegetation, Wetlands, Riparian Zones, and Floodplains, Wildlife, Water, Visual Resource Management (VRM) and Lands with Wilderness Characteristics.

A copy of the APD packet was posted at the Cody Field Office on November 12, 2010 for a 30 day public review. No comments were received. Cody Field Office Specialist reviewed the proposed action, attached the Conditions of Approval in Appendix C, which are made part of Alternative I - Proposed Action.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 Alternative I – Proposed Action

The proposed action as submitted by the applicant would include upgrading 1.76 miles of existing two-track road, and construct a 4.13 acre well pad to support one horizontally drilled gas well. The operator would drill the proposed Buffalo Gap Federal 35-1H well vertically to access federal minerals. A two-cell reserve pit with dimensions of 75 feet x 195 feet would be dug on the northwest corner of the well pad to contain water based drilling fluids. To the east of the two-cell reserve pit would be a 60 foot x 80 foot pit that would contain the cuttings from the closed mud drilling system. Upon completion of drilling, the smaller pit would be closed using a pit solidification method such as Soli-bond or Earthworks.

Additionally, the operator applied for four off lease rights-of-way (ROW) grants, assigned Serial Numbers WYW-165949, WYW-165951, WYW-165954, and WYW165962.

- WYW-165949 is for an access road to the Buffalo Gap Federal 35-1H well site from U.S. Hwy 14, 16, 20 (Wyoming State Highway 789). The ROW request is for a total width of 40 feet with a crown width of 14 to 16 feet. Length of the engineered road will be 378 feet (0.07 miles on-lease, 0.35 acres), and 8,932 feet (1.69 miles off-lease, 8.20 acres), for a total of 9,310 feet (1.76 miles, 8.55 acres).
- WYW-165951 is for a buried production pipe line from the Buffalo Gap Federal 35-1H, width is 50 feet, length is 28,878 feet, 5.5 miles, and 33.15 acres.
- WYW-165954 is for a new access road with a crown width of 14 to 16 feet to the Buffalo Gap State 36-1H, width is 50 feet, length of 4,101 feet, 0.78 miles, 4.71 acres.
- WYW-165962 is for a buried production pipe line from the Buffalo Gap State 36-1H that will corridor with the access road.

The main two-cell reserve pit would be lined with a synthetic liner 12 mil or thicker, which would be chemically compatible with all substances that may be put into the pit (the measurement unit "mil" is defined as one-thousandth of an inch, from the Latin word Mille). To prevent entry into the pit by livestock or wildlife, the reserve pit would be fenced on three sides during drilling operations, with the fourth side fenced upon completion of drilling activities, and the pit would remain fenced until closed. No permanent living facilities are planned for this project. There would be a small guard shack located along the access road, just before entrance onto the well pad. It would be manned twenty-four (24) hours/seven (7) days a week to restrict access to the well pad during operational activities. There would be three (3) trailers on the well pad to serve as quarters for the drilling crew. All trailers and the guard shack would be removed upon completion of the drilling and completion activities.

Water for drilling the well would be transported by truck from the Town of Greybull, Wyoming under existing permits or other available commercial sources under existing permits. If a closer water source is identified and deemed usable, the operator would notify the BLM-Cody Field Manager (Authorized Officer) with the necessary information.

It is anticipated that the amount of water needed for drilling and completion is approximately 10,814 barrels (approximately 454,188 gallons).

If the well proves productive, the necessary production equipment would be installed, and a production pipe line would be buried from the well location to an existing production flow line. This would end in Section 4, T. 52 N., R. 94 W., for approximately 28,878 feet (33.15 acres), transporting the produced hydrocarbons from the well. An environmental color to paint the facilities would be selected from the BLMs Standard Environmental Colors chart upon approval of production facility placement. The proposed well location and access road have been surveyed and designed by a professional engineer and land surveyor.

A total of 50.5 acres would initially be disturbed with 12 acres remaining non-vegetated for the life of the development. The operator is allowed to discharge produced water up to 90 days to the reserve pit as allowed by Onshore Order #7.

Retention and evaporation in produced water pits and/or reinjection or surface discharge of produced water would require BLM authorization and permits from the Wyoming DEQ. Other methods of disposal such as hauling the produced water to a disposal facility could be viable option.

The various steps involved in constructing, drilling, completing, and reclaiming oil and gas wells are described in the BLM's Gold Book, Fourth Edition, Revised 2007.

Table 2.1: Surface Disturbance

Amount of Surface Disturbance		
Project Component	Acres Initially Disturbed	Disturbed Acres After Interim Reclamation
Access Roads & Pipe lines	46.4	10.1
Well Pad	4.1	1.5
Totals	50.5	11.6

If the wells prove to be non-productive they would be plugged and abandoned appropriately and the well pads and access roads would be re-contoured and reclaimed to BLM standards and specifications. The production pipe line would not be installed.

2.2 Alternative II – No Action

Under this alternative the proposed action to construct a well pad, drill the well, install production equipment, and a pipe line, would not be take place.

2.3 Alternatives Considered But Eliminated From Further Analysis

Two alternatives were considered to soften or mitigate impacts to Lands with Wilderness Character (LWC) but eliminated from further consideration. Consideration to not upgrade 1.76 miles of existing two-track road to a 40 foot wide, crowned and graveled surface to the drilling pad was made. This was eliminated from further consideration as it was not considered to be feasible access. Drilling and production equipment could not be transported to the well site without danger to human safety and increased resource damage.

A second alternative to require low profile tanks for production facilities was also considered to reduce visual impacts. This alternative was eliminated because the well site and proposed facilities cannot be seen from Wyoming Highway 14, 16, 20. The project area is within both Class III and Class IV VRM. The project as proposed would meet VRM objectives for the area.

In addition, impacts to the naturalness of the LWC would still be incurred regardless of the tank heights.

3.0 AFFECTED ENVIRONMENT

3.1 Introduction

The existing two-track access road is on the north side of U.S. Hwy 14, 16, 20 (Wyoming State Highway 789) and is approximately 9.5 miles east of the Emblem Bench Road (Highway 32) and approximately 5.0 miles west of the Lovell Highway (Highway 310). Elevation in the area of the access road and well pad are around 4,000 to 4,700 feet.

Livestock grazing in the area is shared by deer, antelope, and a variety of birds and small mammals. The area is used by hunters and outdoor enthusiasts. Please see the location map in Appendix A.

3.2 Livestock Grazing

The lands surrounding the area of the proposed well are within the Thumper Allotment (01059). The BLM Grazing Permit for this allotment is assigned to 7K Ranch. The primary kind of livestock used by the 7K Ranch is sheep. The Thumper Allotment is on a 3-treatment rest rotational grazing strategy. The allotment administered by the BLM falls within the 5 to 9 inch precipitation zone and ranges in elevation from 4,000 to 4,700 feet. The Thumper allotment was classified by the BLM as I (improve) category allotment in 1989. The average stocking level of the Thumper Allotment is 16 acres/AUM.

3.3 Hazardous or Solid Wastes

The project area is assumed to be essentially waste-free at the present time. There are no known solid, liquid, or hazardous wastes within the general project area or along any of the proposed access routes.

3.4 Invasive, Non-Native Species, Noxious Weeds (Undesirable Plant Species)

Annual weed plant species are present in/near the proposed project area including downy brome (cheat grass). Other invasive, non-native plant species that are present in the general area are listed in the following table.

Table 3.1: Non-native Species

Scientific Name	Common Name
Cardaria draba	White top
Acroptilon repens	Russian knapweed
Centaurea maculosa	Spotted knapweed
Cirsium arvense	Canada thistle
Tamarix ramosissima	Salt cedar
Hyoscyamus niger	Black henbane
Eleangus angustifolia	Russian olive

3.5 Cultural Resources

A Class III Cultural Resource Survey meeting the Wyoming State Historic Preservation Office (SHPO) standards was conducted by Western Archaeological Services in September of 2010. The inventory located and recorded three sites and fifteen isolated resources.
Of the three sites, two are prehistoric fire cracked rock and lithic scatters considered not eligible for National Register of Historic Places (NRHP), and one historic irrigation ditch.

The ditch is considered eligible for NRHP inclusion, but the segment involved in the current proposal is recommended as non-contributing. Concurrence from the Wyoming SHPO on a no historic properties affected determination was received on November 30, 2010.

3.6 Native American Religious Concerns

The area under consideration contains no known or identified areas or locations of religious or cultural concern to Native Americans. No traditional gathering areas have been reported near the current proposal.

3.7 Geology, Paleontology and Mineral Resources

Geologically, the proposed well site is situated northwest of Greybull, Wyoming, on colluvium of Quaterary age overlying a thick sedimentary section that includes the Eocene Willwood Formation, the Paleocene Fort Union Formation, and Cretaceous Lance Formation, as well as other older strata as listed down to the Cretaceous Cloverly Formation in the table below (Source: Lowry, Lowham and Lines, 1976). The proposed well site is not situated within any established oil or gas field.

Relative to site potential for paleontological resources, the proposed well site is situated in an area where the Potential Fossil Yield Classification (PFYC) of the first bedrock formation below the well site is rated as a 5b (very high potential for vertebrate or scientifically-significant fossil resources).

This high potential for vertebrate or scientifically significant fossil resources applies chiefly to the uppermost bedrock formation – the Eocene Willwood Formation, which is renowned for its mammalian fossils, as well as for being a source of geochemical and paleoclimatological data. The upper portion of the Willwood Formation could yield vertebrate fossils wherever it is excavated beneath the overlying deposits of Quaternary colluvium, for example, during access road or reserve pit construction.

A paleontological resources project-specific field survey was conducted by Erathem-Vanir Geological Consultants of Pocatello, Idaho on October 1, 2010; and the report summarizing said survey was submitted to the BLM Cody Field Office dated October 23, 2010. The proposed well site (Section 35, T. 53 N., R. 95 W.); access road (in Sections 2 and 3, T. 52 N., R. 95 W.); and connector pipeline (to be constructed along Sections 1 and 2, T. 52 N., R. 95 W., and Sections 4, 5, and 6, T. 52 N., R. 94 W).

Willwood Formation Tw	Varicolored interbedded claystone and channel sandstone. Sandstone is locally conglomeratic. The formation is about 2,500 feet thick in the center of the basin (Jepson and Van Houten, 1947, p. 146).
Fort Union Formation Tfu	Claystone, siltstone, and sandstone with some carbonaceous material. Crossbedding and channel sandstones are common; individual strata are rarely traceable for more than a few hundred yards (Jepson and Van Houten, 1947, p. 144). Conglomeratic material is locally abundant. The formation is as much as 5,000 feet thick along the axis of the basin.
Lance Formation Kl	Light-yellowish-brown, poorly indurated concretionary sandstone interbedded with claystone, shale, and thin beds of carbonaceous shale. Maximum known thickness is about 1,800 feet.
Meeteetse Formation Kme	Siltstone, claystone, and shale, poorly indurated sandstone, and some bentonite. Thin, lenticular coal beds occur principally in the upper part of the formation. Maximum thickness is about 1,200 feet.
Mesaverde Formation Kmv	Massive sandstone, thin-bedded sandstone, shale, carbonaceous shale, and coal. The formation is about 1,800 feet thick in south-central part of the basin (Rohrer, 1966, p. A9), and it thins to the north and east.
Cody Shale Kc	Black shale, shaly sandstone (in upper part), calcareous shale, and thin beds of bentonite. The formation thickens from 2,100 feet near Cody to more than 3,000 feet in the southeastern part of the basin.
Frontier Formation Kf	Fine- to medium-grained sandstone, conglomeratic sandstone, shale, and some bentonitic and carbonaceous shale. Sandstones are lenticular; aggregate thickness of sandstone is greatest in the southwestern part of the basin and smallest along the eastern part (Van Houten, 1962, p. 225). The formation is about 500 feet thick in the east-central and south-central parts of the basin and 650 to 700 feet thick in the northeastern and southeastern parts.
Mowry Shale Km	Black thin-bedded resistant siliceous shale that weathers silver gray, interbedded with thin sandstone and bentonite beds. The formation is 300 to 400 feet thick.
Thermopolis Shale Kt	Soft black shale, Muddy Sandstone Member (Kmu), which averages about 30 feet thick (Paull, 1962, p. 105), occurs about 200 feet above base. Thickness ranges from 400 to 600 feet.
Cloverly Formation Kcv	Variegated bentonitic mudstone with channel sandstones in the upper part and lenticular conglomerates in the lower part. Thickness ranges from about 200 to 400 feet.

No fossils of any kind were found during the paleontological resources survey was conducted (reference page 5, Paleontologic Resources Letter Report 2010-07, Erathem-Vanir Geological Consultants, 2010). However, potential site monitoring during construction of the reserve pit has been recommended (see Chapter 4).

No saleable or locatable mineral resources are known to occur in the colluvial deposits or Willwood Formation in this area. The only leaseable minerals known in the area are oil and gas.

3.8 Soils

Soils associated with the proposed well and ancillary features include various combinations of the soils listed in the following table (see map in Appendix B).

Table 3.2: Soils Data

Soils in the Proposed Buffalo Gap 35-1H Well Area (CYFO Soils Data)										
Soil Component Name	Map unit (s)/%	Slope (%)	Surface Texture (s)	Topsoil Depth (in)	Soil Depth (in)	Soil Depth	High Top Soil pH	Top Soil Sodium	Top Soil Salinity (mmhos/cm)	Avail H2O (in/in)
Greybull	371AD/50%	0 - 30	Clay Loam	0 - 10	20 - 40	Mod Deep	8.4	NA	NA	0.07
Persayo	371AD/30%374CE/20%570AD/20%	2 - 45	Clay Loam	0 - 4	4 - 20	Shallow	9.0	NA	0 - 8	0.028 - 0.042
Chipeta	374CE/40%	6 - 30	Silty Clay	0 - 3	5 - 20	Shallow	8.4	NA	8 - 16	0.042
Stutzman	41A/85%-41AC/85%	0 - 10	Silty Clay Loam	0 - 3	60+	Very Deep	9.0	NA	NA	0.2
Muff	570AD/35%	0 - 10	Fine Sandy Loam	0 - 3	20 - 40	Mod Deep	8.4	NA	NA	0.07
Uffins	570AD/25%	0 - 8	Loam	0 - 4	60+	Very Deep	9.6	20 - 40	8 - 16	0.11
Lostwells	351AC/85%	0 - 10	Clay Loam	0 - 3	60+	Very Deep	9.6	13 - 25	2 - 8	0.12
Rock Outcrop	Various Amounts	All	Rock	0	0	NA	NA	NA	NA	0

These soils, in combination with the climate, aspect, and other factors associated with the proposed project location support Saline Upland 5-9" and Shale 5-9" ecological sites. Sandstone and/or shale rock outcrops are fairly common in the area, but none were observed within the proposed well or ancillary features as they were configured on the ground during the on-site September 29, 2010.

Two small rock outcrops were found adjacent to the drainage located near the northwest corner of the proposed pad, which indicates a possible depth limitation for the proposed location of the reserve pit.

Some of the characteristics of these soils impose limitations related to surface disturbing activities, water and erosion management, and reclamation that should be considered during the design, construction, production, and abandonment phases if the proposed action is approved. Severe limitations associated with some of these soils include soil productivity, potential for rutting, permeability/water retention, high pH, and high levels of salinity. The limitations associated with these soils are provided in Tables B.1 and B.2 in Appendix B.

3.9 Threatened and Endangered Species, and Wyoming BLM Sensitive Species

Threatened and Endangered Species:
Canada lynx and black-footed ferrets could potentially occur in areas west of the project location but are unlikely to be found in close proximity to this proposed project location.

Suitable habitat for lynx does not occur and all black-footed ferrets were believed to have been removed from the Meeteetse Population in 1986 repeated prairie dog colony surveys confirms their absence from the Bighorn Basin.

There have been very few observations of grizzly bear (*Ursus arcto horribilis)* east of Highway 120. Because the project area is approximately 40 miles away from their closest occupied range to the west, they are not expected to occupy the project area. Grey wolf (*Canis lupus)* could also potentially occur in the project area, however, are unlikely to occur. If they did occur, it would involve transient behavior and consider to be an extremely rare event.

Ute ladies'-tresses *(Spiranthes diluvialis)* is a threatened plant species that may be present within or downstream of the project area in riparian areas which are not directly impacted by the proposed action. Its habitat is associated with wet meadows, springs, seeps, streams, lakes, and ponds at elevations between 4,200 and 7,000 feet. It is not known to occupy riparian-wetland areas that are extremely saline or alkaline, but it does grow on moderately saline or alkaline sites. There are no documented occurrences of this plant species on public land within or near the project area.

Mountain Plover which is a proposed species, nests within the affected area of the proposed action, therefore, this habitat is likely to be occupied by Mountain Plover.

Wyoming BLM Sensitive Species:
BLM required a pre-disturbance wildlife survey (completed by Dana Consultants, contract biologist), and the results of the survey showed Burrowing Owl (*Athene cunicularia*) may nest in this habitat. White-tailed prairie dogs (*Cynomys leucurus*) are also present at relatively low numbers and acreage. The wildlife survey also showed defunct prairie dog burrows but none were observed to have nesting burrowing owls. There were rabbits seen but no prairie dogs were seen or heard. The vast majority of prairie dog holes were inactive due to the large amount of debris and spider webs in the entrance of holes. No burrowing owl sign was seen (see attached Dana Consultants Report dated October 15, 2010).

Wyoming BLM sensitive species that could potentially use habitat within or near the project area include peregrine falcon, ferruginous hawk, sage sparrow (Brewer's sparrow, loggerhead shrike, sage thrasher, and Townsend's big-eared bat.

Northern leopard frog (*Rana pipiens*), may use the riparian areas and wetlands near the project area. Yellowstone River cutthroat trout are present in the Bighorn River which ultimately receives water from the proposed project area.

The Wyoming Game & Fish Department, Cody, was sent a letter and copy of the proposed action on November 12, 2010. Mr. Tim Woolley, Wildlife Management Coordinator, Wyoming Game & Fish Department, Cody, responded by telephone on December 7, 2010 stating that they have no concerns with this proposed well, but may have concerns at a later date if a greater number of wells are proposed.

3.10 Vegetation

An ecological site survey was completed for this allotment in the mid 1980's. Rocky outcrops were also documented in the area during this survey. Plant species that commonly occur on these ecological sites include: Gardner's saltbush, Indian ricegrass, bottlebrush squirrel-tail, western wheatgrass, bud sagebrush, Sandberg's bluegrass, alkali sacaton, blue grama, bluebunch wheatgrass, bird's foot sagebrush, winterfat, greasewood, milk vetch, salsify, onion, Princes plume, woody aster, and fleabane. Most, but not all, of these plant species were observed on the site during the September 29, 2010 on-site.

An unnamed drainage situated west of the proposed well-pad contained big sagebrush, green needle grass, and needle and thread grass, tumble mustard, riparian wheatgrass, and cheatgrass. Some annual weeds are also present within the proposed well development area, but are sparsely distributed. No other invasive, non-native plant species were observed in or near the proposed well site or ancillary features.

3.11 Wetlands, Riparian, and Floodplains

The proposed well site and ancillary features are situated on uplands north of Dry Creek and south of Little Dry Creek. No known wetlands, riparian areas, or floodplains would be directly affected by the proposed action, but indirect impacts could occur to downstream water features, i.e. Dry Creek which lies within one-quarter mile of the proposed access road/pipeline. Little Dry Creek also supports patches of riparian-wetland vegetation.

3.12 Wildlife

The affected area is in an arid alkali shrub habitat, which provides habitat for species adapted to this range site and habitat type. Habitat within the proposed project area supports a variety of vertebrate species including big game and small mammal species, raptors and owls, land and water birds, neo-tropical migrant birds, reptiles, and amphibians. Threatened, endangered, and sensitive species are specifically discussed in a previous section.

Big game species in the general area of the Proposed Action consist of mule deer and pronghorn antelope and big game habitat ranges within the project area are designated as yearlong for both antelope, and mule deer.

Large mammalian predators with the potential for occurrence in the general area include: mountain lion and though no important foraging or cover habitat for these species is found in the project area. Coyote, bobcat, red fox are likely to utilize habitat in the project area throughout the year.

Small mammals (sensitive species not included) with the potential for occurrence in the project area include: white-tailed jackrabbit, cottontail rabbit, porcupine, raccoon, striped skunk, badger, thirteen-lined ground squirrel, and vole. Bat species (sensitive species not included) with potential for occurrence include: little brown myotis and big brown bats (*Eptesicus fuscus*).

There are no known raptor nest site locations within the proposed project area. Non-Sensitive raptors and owls with the potential for occurrence in the general area of the project include: golden eagles that nest in the project area, red-tailed hawk, northern harrier, prairie falcon, merlin, American kestrel, Cooper's hawk, sharp-shinned hawk, long-eared owl, and great horned owl. Short-eared owl and Swainson's hawk (*Buteo swainsoni*) may also occur in the area.

Game birds with the potential for occurrence in the general area include: gray partridge, chukar partridge, ring-necked pheasant, greater sage grouse, and wild turkey.

Reptile and amphibian species that may be present in or near the project area include: tiger salamander, boreal chorus frog, Plains spadefoot toad, greater short-horned lizard, intermountain wandering gartersnake, and prairie rattlesnake.

Migratory birds present in the general area of the proposed action include: western meadowlark, horned lark, sage sparrow, and Brewer's sparrow. However, no known nests have been documented at this time. Surveys would be conducted prior to surface disturbance prior to April 10.

Numerous game fish species are present in Dry Creek and the Bighorn River including stonecat (Dry Creek), burbot, sauger, shovelnose sturgeon, walleye, channel catfish, small and largemouth bass, and brown, rainbow, and cutthroat trout. In addition, the following non-game fish (native and non-native) are also present, shorthead redhorse, flathead chub, fathead minnow, lake chub, longnose dace, white sucker, emerald shiner, longnose sucker, Plains killfish, Plains minnow, river carpsucker, sand shiner, sturgeon chub, and western silvery minnow.

The Wyoming Game and Fish Department considers sauger, shovelnose sturgeon, and western silvery minnows to be fish species of concern.

3.13 Water

Surface Water:
The proposed well-site and ancillary features are situated within the Thumper Point and Kellerman Draw sub-watersheds (see water resources map). The primary drainages in the Thumper Point and Kellerman Draw sub-watersheds are Little Dry Creek and Dry Creek, respectively, both of which are tributaries to the Bighorn River. Little Dry Creek has an intermittent flow regime, whereas Dry Creek is perennial due in part because of the surface discharge of produced water from oil and/or gas production within the watershed and irrigation return flow.

The Wyoming State Engineer's Water Right Database contains numerous surface water rights (mostly related to irrigation and stock) for the area within 2 – 3 miles of the proposed action. Lower Dry Creek is on the State of Wyoming's 2010 303d List of Impaired Waterbodies because of elevated levels of coliform bacteria.

Ground Water:
There are several existing ground-water rights within two miles of the proposed well site. Most of these ground-water rights are for domestic/stock purposes that are held by private landowners. All the wells listed in the Wyoming State Engineer's Water Right Database are 35 feet deep or less with static water levels between 6 and 16 feet deep. Water quality is generally unknown but is assumed suitable for domestic and stock purposes in the shallower formations with increasing salinity as depth increases.

There are also several deeper water-bearing formations that could be affected by developing and producing a 10,000 foot deep oil and/or gas well in this area.

3.14 Visual Resource Management (VRM)

The proposed Buffalo Gap Federal 35-1H includes lands in two different Visual Resource Management (VRM) classes: Class III, and Class IV (See VRM Map Page 36).

The proposed well pad splits both VRM Class III and IV. The remaining portions of the proposed action such as the access roads and pipeline are within VRM Class III.

The management objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape. Within the Little Dry Creek LWC there are 14,317 acres within VRM Class III.

The management objective of VRM Class IV is to provide for activities that require major modifications to the existing character of the landscape. The level of change to the characteristic landscape can be high and may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repetition of the basic elements. Within the Little Dry Creek LWC there are 34,612 acres within VRM Class IV.

3.15 Lands with Wilderness Characteristics (LWC)

Regulatory Framework

FLPMA directed the BLM to manage the public lands and their resources under principles of multiple use and sustained yield. Wilderness is one of the multiple use values.

Section 2(c) of the Wilderness Act of 1964 requires that in order to be considered to have wilderness characteristics, an area must meet all of the following criteria:

(1) "generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable;" This is commonly referred to as naturalness.

(2) "has outstanding opportunities for solitude or a primitive and unconfined type of recreation;"
(3) "has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition;"

The Wilderness Act further states areas with wilderness characteristics "may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value." These are commonly referred to as supplemental values and are not required to be present.

On December 22, 2010 Secretary of the Interior Ken Salazar, signed Secretarial Order 3310 Protecting Wilderness Characteristics on Lands Managed by the Bureau of Land Management. The Order provides direction to the BLM regarding its obligation to maintain wilderness resource inventories on a regular and continuing basis for public lands under its jurisdiction. It further directs the BLM to protect wilderness characteristics through land use planning and project-level decisions unless the BLM determines in accordance with this Order, that impairment of wilderness characteristics is appropriate and consistent with other applicable requirements of law and other resource management considerations.

Study Methods

The BLM's 1980 wilderness inventory found wilderness character was not present on BLM-administered lands within the project area.

A recent inventory of the area by BLM staff which is hereby incorporated by reference concluded that the proposed Little Dry Creek unit (48,929 acres) does meet the size criteria of 5000 acres; the area appears to be in a natural condition. The area also processes outstanding opportunities for solitude, and has a supplemental value associated with geology, and landscape including a broad expanse of colorful badlands.

The inventory did disclose however, that opportunities for primitive and unconfined types of recreation were lacking; current policy does not mandate that both solitude and opportunities for primitive and confined recreation must exist in order to qualify for a designation of lands with wilderness characteristics.

Little Dry Creek LWC boundaries are an existing natural gas pipe line right-of-way to the east, Wyoming State Highway 32 on the West, Little Dry Creek road to the north, and to the south is Wyoming State Highway 14-16-20.

Inside the Little Dry Creek LWC, there are approximately 50 stock water reservoirs (many of these reservoirs are currently silted and not functional), 21 miles of pasture fence which are interior and boundary fences along with 44 miles of two-track roads. There are 3 abandoned oil and gas wells that were drilled and plugged several years ago.

The Little Dry Creek area meets the criteria of generally being affected by the forces of nature with the imprint of man substantially unnoticeable due to the size of the area and topographic screening. You may read the evaluation sheets at the following website address and by following the link labeled “Multiple Use Lands with Wilderness Characteristics”:

http://www.blm.gov/wy/st/en/field_offices/Cody.html

Little Dry Creek	
Size	48,929 acres
Ownership	BLM and State of Wyoming
Location	T53-54N, R94-96W
Is the Unit in a Natural Condition	Yes
Does the Unit have outstanding opportunities for solitude?	Yes
Does the Unit have outstanding opportunities for primitive and unconfined recreation	No
Does the Unit have Supplemental Values	Yes (Geologic)

Newly signed (12/22/2010), Secretarial Order 3310, Protecting Wilderness Characteristics on Lands Managed by the Bureau of Land Management, identified the Bureau's necessity to inventory and screen lands as possibly wilderness in character. The Cody Field Offices updated the wilderness in character inventory in 2010.

4.0 ENVIRONMENTAL EFFECTS

4.1 Introduction

In accordance with 40 C.F.R. 1502.16, this chapter of the EA includes a discussion of the potential environmental consequences of the Proposed Action and No Action Alternatives on each of the affected resources. An environmental impact is defined as a change in the quality or quantity of a given resource due to a modification in the existing environment resulting from project-related activities. Impacts may be beneficial or adverse, may be a primary result (direct) or secondary result (indirect) of an action, and may be permanent and long-term or temporary and of a short duration. Impacts may vary in degree from a slight discernible change to a total change in the environment. This impact assessment assumes that all Conditions of Approval (COAs) and Best Management Practices (BMPs) referenced in Appendix C, would be successfully implemented and maintained. If such measures are not successfully implemented and maintained, additional impacts could occur.

4.2 Livestock Grazing

Alternative I – Proposed Action

Adverse impacts from the proposed action would be from removal of vegetation and subsequent reduction of the forage base within the allotment.

With an average stocking rate of 16 acres/Animal Unit Month (AUM) and about 2 acres of disturbance, this well would reduce the amount of available forage by less than 0.2 AUMs. This amount of forage reduction would be negligible compared to the 2,774 AUM's active preference

on the public lands within the allotment. This amounts to about 3 AUM's of forage that has been removed due to the entire well pad and access road. If expansion of the area would occur for oil and gas, this expansion would incrementally reduce the forage within the allotment. New access roads allow greater public access to the allotment, which allows increased potential for harassment of livestock and vandalism of supporting facilities. Increased vehicle traffic from either the public or operation of the oil well increases the potential for vehicle/livestock collisions, which would be an adverse impact for the grazing operator and the person who hits an animal. Additionally, uncontrolled access to reserve pits, produced water and/or open pipeline trenches could have negative consequences to individual cattle grazing within the allotment.

Positive livestock grazing benefits from the well may include the surface discharge of produced water, which livestock could potentially utilize if the water quality made it acceptable for such use.

Alternative II – No Action
There would be no impacts to livestock grazing/range from the proposed action.

4.3 Hazardous or Solid Wastes

Alternative I – Proposed Action
Some hazardous materials would be used during drilling, completion, and production of the proposed well.

The term hazardous materials as used here means: 1) any substance, pollutant, or contaminant (regardless of quantity) listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, 42 U.S.C. 9601 et seq., and the regulations issued under CERCLA, 2) any hazardous waste as defined in the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, and 3) any nuclear or nuclear byproduct as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq.

POGO Producing Company or any contractor company working for POGO Producing Company will have Material Safety Data Sheets (MSDS) available for all chemicals, compounds, or substances that are used during the course of drilling, completion, and production operations of this proposed project. Additionally, all chemicals will be handled in an appropriate manner to minimize the potential for leaks or spills to the environment. Because the project operations would comply with all applicable federal and state laws concerning hazardous materials and the operator's Spill Prevention, Control, and Countermeasure Plan, and NTL-3A Reporting of Undesirable Events, minimal impacts are anticipated.

Alternative II – No Action
Wastes that could be introduced to the project area and its environs by the proposed action would not be generated. There would be no new hazardous wastes generated.

4.4 Invasive, Non-Native Species, Noxious Weeds (Undesirable Plant Species)

Alternative I – Proposed Action

Construction of the new well pad, access road, and pipe line, through the introduction of and increased vehicle/human use in the area, may increase the potential for undesirable plant species (UPS) to become established where there currently are very few.

Mitigation for UPS would be built into the proposed action in that it would require interim reclamation and the immediate re-seeding of the disturbed well pad and replacement of topsoil when the site would no longer be needed.

Cheat grass is present in the drainage situated west of the proposed well site and likely occurs near the other components of the proposed development. Cheat grass is a very aggressive, non-native species that would colonize and possibly dominate any new surface disturbance in this area.

The operator would also be responsible for complying with current BLM seed policy, monitoring, and controlling any UPS infestations that might occur on any disturbed areas related to this action. Any equipment/material brought to the project area would be cleaned by air or water power washing at an offsite location, not on public lands, in order to remove any potential weed seed before transport to the proposed well site. These mitigations and other related Conditions of Approval (COAs) for this proposal are attached as Appendix C of this document and the COAs will be attached to the Application for Permit to Drill.

Alternative II – No Action

The introduction and/or spread of UPS that may occur as a result of implementing the proposed action would not occur. The present rate of spread of those species already in existence, would continue to be influenced by activities and natural processes presently occurring within the general area.

4.5 Cultural Resources

Alternative I – Proposed Action

As no sites eligible for the National Register of Historic Places (NRHP) are located within the project area, the action will receive a No Adverse Effect determination under the Wyoming State Protocol between the Wyoming State Historic Preservation Office and the Director of the Wyoming BLM.

Potential impacts to cultural resources include unauthorized surface collection and looting of buried materials. Increased presence in the project area to support and maintain drilling and production activities may result in an indirect opportunity for additional unauthorized surface collection and looting of buried materials.

Alternative II – No Action

Potential impacts to cultural resources would remain the same as the current level with potential disturbance through unauthorized surface collection and looting.

4.6 Native American Religious Concerns

Alternative I – Proposed Action

If any areas or locations of traditional gathering areas, or religious or of cultural concern to Native Americans are subsequently identified or become known through the Native American notification or consultation process they would be considered during the implementation phase. BLM would take no action that would adversely affect these areas or locations without consultation with the appropriate Native Americans.

Alternative II – No Action

No impacts to Native American Religious concern would occur under the No Action alternative, as BLM will take no action that would adversely affect these areas or locations without consultation with the appropriate Native Americans.

4.7 Geology, Paleontology, and Mineral Resources

Alternative I – Proposed Action

Geological resources would generally not be impacted as a result of the proposed action. Mineral resources that would be affected are any available oil and gas resources that would be obtained through implementation of the proposed action, which could result in a permanent loss of the fossil fuel in this particular location. However, production of any such resources would result in economic benefit to Big Horn County, thus such production may not be considered to be an adverse impact to the mineral resource.

The Paleontological Resources Protection Act of 2009 is in effect protecting such resources as of March 2009. The potential for vertebrate or scientifically significant fossils to be encountered is considered high during excavation of the reserve pit needed for the well and paleontological resources protection stipulations would be applied to any approval document for this well. These stipulations address collecting, discovery and avoidance of paleontological resources during surface-disturbing activities as necessary. Collection of vertebrate fossils or other scientifically significant paleontological resources would be prohibited without a permit.

If vertebrate or other scientifically significant paleontological resources (fossils) are discovered on BLM-administered land during operations, the Operator would suspend operations that could disturb materials, and immediately contact the BLM Cody Field Office Manager, (or Authorized Officer). Any vertebrate or scientifically significant paleontological resources found as a result of the project/action would be avoided during operations.

If fossils of scientific significance are discovered and collected as a result of the discovery contingency or inspection of the reserve pit, they will be curated into the repository of the University of Wyoming, and a Final Report documenting the discovery and curation of any such specimens shall be prepared and submitted to the BLM.

Based on the results of the paleontological site survey (Erathem-Vanir, 2010), an onsite paleontological resources monitor would be required to be present during excavation of any reserve pit into the underlying Willwood Formation. The excavation would be monitored for the presence of any vertebrate or other scientifically significant fossils before installation of the reserve pit liner.

Alternative II – No Action
There would be no surface disturbance associated with the project under this alternative and geological/paleontological resources would not be affected.

4.8 Soils

Alternative I – Proposed Action
Construction of a new well pad would entail removing topsoil and excavating some of the subsoil to level the pad and create one reserve pit to manage drilling mud, waste water, and cuttings, and one small pit for oil-based mud cuttings.

Topsoil would be stockpiled adjacent to the pad and the excavated subsoil would be used as fill to level the pad and construct berms to manage water run-on and run-off, etc. Excess subsoil would be stockpiled adjacent to the pad and would be separated from the topsoil.

The cleared pad would be driven on and would be used for various construction/drilling/completion activities and some of it may be covered with a layer of gravel. There would also the potential for spills of fluids or other materials used during the construction, drilling, completion, operation, and reclamation of the site. These activities would compact the soil on the pad and/or cause other physical/chemical changes that affect the soils ability to support life. Bare, compacted, and/or chemically altered soil is less permeable and sheds water at a faster rate than unmodified soils do, which increases the potential for soil erosion or can inhibit the re-establishment of plant growth and the success of reclamation.

Upgrading the existing two-track, constructing an access road to the pad, and installing/maintaining a pipeline would result in similar effects.

The use of berms and other water management BMPs, i.e., silt fences, straw bales, etc., along with other post completion BMPs such as interim reclamation and proper design, construction, and maintenance of water management project components would help manage runoff and minimize erosion.

Storing topsoil and subsoil properly and using it for interim reclamation would help maintain its biological viability/productivity which would facilitate final restoration of the resulting surface disturbance and minimize long-term negative effects.

To preserve topsoil biological viability/productivity, stock piles should be isolated from sub-soils, protected from erosion and UPS, less than 3 feet high (2' or less is better), seeded with deep-rooted species if it will be stockpiled for a long time (more than a month or two), and re-spread as soon as possible – preferably within 3 months or less (live-spreading of topsoil preserves topsoil biological activity much better than stock-piling, even if the stock-piling follows the mitigation specified above).

Alternative II – No Action
Increased potential for erosion and possible introduction of hazardous wastes associated with the proposed action would not occur. Soil stability, fertility, etc., would continue to be influenced by the activities and other processes presently occurring within the general area.

4.9 Threatened and Endangered Species and Wyoming BLM Sensitive Species

Alternative I – Proposed Action

Threatened or Endangered Species:
There would be no effect on any Threatened or Endangered Species and the project would not jeopardize the continued existence of mountain plover as a result of implementing the proposed action.

Wyoming BLM Sensitive Species:
There would be little to no effect on any Wyoming BLM Sensitive Species which may occur in or near the project area.

Condition of Approval would require nesting surveys to be completed to identify nesting birds before disturbance can be conducted would minimize direct impacts to migratory birds and sensitive bird species. There would be a direct loss of migratory bird habitat (Gardner saltbush, alkali shrubs, and grasses) community habitat equal to the size of the disturbance area. The minor increase in disruption and fragmentation would decrease the suitability of habitat for migratory birds in the affected area in a minor way since most disturbances are limited to previously disturbed areas except the well pad and a short distance of road to the well pad.

Prairie dog town structure would be affected by road construction, well pad development, and pipeline installation. All documented towns within the project area were determined to be inactive therefore impacts are limited to the removal of historical burrowing complexes. A Condition of Approval will be applied mandating avoidance of active burrows should they be encountered.

Structure loss of the prairie dog town would make it more difficult for prairie dog re-colonization. The structure is also important for mountain plovers and many other species as prairie dogs are keystone species. When prairie dogs return to this colony, there would be adequate opportunity to re-establish, short-term direct impacts would occur as the available habitat is reduced.

Northern leopard frogs (NLF) and Yellowstone cutthroat trout (YCT) that use the riparian-wetland-aquatic habitat located downstream of the proposed well may be affected if runoff and sediment discharge increases as a result of constructing/operating this oil well or if a hydrocarbon or chemical spills occurs.

The use and maintenance of water and erosion BMPs (including the appropriate WDEQ-WQD SWDP and SWPPP) would minimize the potential for NLF/YCT impacts. Surface discharge of produced water, if it occurs as a result of the proposed action, could also impact these species. Obtaining and complying with the associated WYDEQ point source pollution (NPDES) permit would minimize the potential for NLF/YCT impacts.

Alternative II – No Action

There would be no impacts to Threatened, Endangered, or Sensitive Species from oil and gas development related to the proposed action.

4.10 Vegetation

Alternative I – Proposed Action

Construction of the proposed well pad and other ancillary features would result in the removal of approximately 50.8 acres of vegetation and could result in the compaction of the soil surface in the short-term. Long –term impacts include the loss of approximately 12 acres of vegetation for the life of the well. This would result in a net loss of vegetative cover which would reduce forage and cover for wildlife and livestock that use the area and increase runoff and erosion. During the life of the operation, any vegetation that would start growing on the active part of the pad necessary for production would be removed to minimize weed establishment and fire hazards.

If erosion occurs, vegetation growing down slope from the proposed development may be buried by sediment and vegetation located up slope may be undermined.

Reclamation of the proposed surface disturbance would include re-contouring, ripping, seeding with native species to approximate the pre disturbance plant community. If reclamation is successful, the loss of vegetation would no longer be a factor. However, successful reclamation would be dependent on precipitation quantity and timing as well as other factors such as seed viability/vigor, compatibility of the seed relative to site characteristics, and competition with undesirable plants. Successful reclamation would require a longer period of time if any of these factors were less than optimal.

Alternative II – No Action

Impacts to vegetation that would have resulted from implementing the proposed action would not occur. Vegetation presently occupying the area that would have/could have been affected by the proposed project will continue to be influenced by the activities and other processes presently occurring within the general area.

4.11 Wetlands, Riparian, and Floodplains

Alternative I – Proposed Action

Riparian-wetland vegetation is present downstream of the proposed action on the floodplains and banks of Dry Creek and Little Dry Creek. Indirect riparian area, wetland, and/or floodplain impacts could occur if runoff and sediment, or a hydrocarbon, chemical, or hazardous waste spill associated with the proposed action reaches them. Impacts related to runoff and sediment from the proposed project would likely only have local affects, but spills would have the potential to effect a greater area depending on the amount and kind of material (water soluble/insoluble) spilled and the kind and extent/magnitude of a transport mechanism, i.e., gravity/slope verses a major storm event.

The proper use of appropriate soil, water, and spill management BMPs (including actions contained in the Storm Water Discharge Permit (SWDP) and the associated Storm Water Pollution Prevention Plan (SWPPP)) and the proper maintenance of them coupled with quick and effective spill responses would minimize the potential for impacts to these resources.

Disposal or management of produced water, especially the surface discharge of produced water, if authorized could also impact these resources.

The potential for negative impacts would be minimized by obtaining and complying with the associated Wyoming Department of Environmental Quality (WYDEQ) point source pollution Nation Pollution Discharge Elimination System (NPDES) permit(s).

Alternative II – No Action

Wetland, riparian area, and floodplain impacts associated with implementing the proposed action would not occur. Wetlands, riparian areas, and floodplains would continue to be influenced by the human activities and natural processes presently occurring in the area.

4.12 Wildlife

Alternative I – Proposed Action

Habitat would become slightly more fragmented and habitat would be lost as 12 acres of vegetation are removed. The level of disturbance should not increase beyond population viability thresholds. There would be little direct or indirect effects with mitigation measures and COAs implemented.

Amphibians, fish, and other biota that use the riparian-wetland-aquatic habitat located downstream of the proposed oil and/or gas development could be affected in the same manner and extent described in the water and wetland, riparian, floodplain sections above.

Alternative II – No Action

There would be no impacts from oil and gas development related to the proposed action. Populations of wildlife would still be affected by natural variations in population demographics influenced by past development, climate, disease, fragmentation and the myriad of land uses currently authorized.

4.13 Water

Alternative I – Proposed Action

Surface Water:

This proposed well would be situated immediately adjacent to an ephemeral tributary of Little Dry Creek which is tributary to the Bighorn River. The proposed access road and pipeline is situated within the Little Dry Creek and Dry Creek watersheds. Water impacts could occur from uncontrolled runoff and sediment from the well pad and other ancillary features or if a hydrocarbon, chemical, or hazardous waste spills reach downstream surface and/or ground water. Impacts related to runoff and sediment from the proposed action would likely only have local affects, but spills would have the potential to affect a greater area depending on the amount and kind of material (water soluble/insoluble) spilled and the kind and extent/magnitude of a transport mechanism, i.e., gravity/slope verses a major storm event. The WYDEQ has determined that lower Dry Creek has Coliform bacteria levels in excess of those needed to support full body contact recreation, one of its designated uses.

As a result, this section of Dry Creek is on the Wyoming State 303d List of Impaired Water bodies that requires the development and implementation of a TMDL. The BLM does not expect implementation of the proposed action to result in any additional water quality impairment related to Coliform bacteria.

The project proponent would coordinate with the WYDEQ-Water Quality Division to obtain a Storm Water Discharge Permit (SWDP) and associated Storm Water Pollution Prevention Plan (SWPPP). The SWDP/SWPPP and implementation of and compliance with them could constitute some/all of the mitigation the BLM requires (depends on adequacy) to minimize potential impacts to surface water resources.

The use of soil, water, and spill management BMPs (including actions contained in the appropriate Storm Water Discharge Permit (SWDP) and the associated Storm Water Pollution Prevention Plan (SWPPP) and the proper maintenance of them coupled with quick and effective spill responses would minimize negative impacts to these resources.

Other WYDEQ-WQD permits and BLM authorization would be required before produced water could be discharged to the surface as a result of the proposed action

Ground Water:
Drilling and operating an oil and/or gas well has the potential to impact ground water by possibly allowing the mixing of water from different aquifers/geologic formations, or by introducing hydrocarbons and/or other materials/chemicals used in drilling and/or completing the well into aquifers. Casing failure and blowouts may also result in aquifer contamination. Implementing and actively complying with Wyoming Oil & Gas Conservation Commission/BLM regulations and requirements related to developing, producing, and shutting in oil and gas wells would help reduce the risk of ground water contamination. Surface casing is required to be cemented from surface to 5700' bgl to protect known freshwater sources. Additionally, the BLM and WOGCC require the use of freshwater for drilling the surface string of the well to ensure no degradation of current water quality. No water wells are currently proposed to provide any source of water so no impacts will occur from improper installation or operation of water well. Potential drawdown to other water wells in the area is not expected. Design features include lining and proper handling of the reserve pit and materials disposed into minimizing the potential for seepage in to the groundwater system.

The potential for negative impacts would be minimized by obtaining and complying with the associated WYDEQ point source pollution (NPDES) permit (s).

Alternative II – No Action
Impacts to Water Resources resulting from the authorization and implementation of the proposed action would not occur.

4.14 Visual Resource Management (VRM)

Alternative I – Proposed Action
A small portion of the well pad, the upgrading of the two-track road to access the well, and a buried pipeline would be within VRM Class III.

A small portion of the well pad would be located in VRM Class IV.

The construction of the well pad and removal of vegetation would result in a weak contrast in the form, line, color, and texture of the land and vegetation from the current situation.

The addition of well facilities such as tanks would add vertical and horizontal lines to the landscape resulting in a moderate contrast from the current situation. Though the location is approximately ¾ mile from Highway 14-16-20 the tanks would not be visible to the casual observer due to topography. Upon determination of productive capability, the Operator would be required to submit a proposal for production facility installation. Location and coloration would be determined at this time to minimize impacts to the visual resources and wilderness values such as naturalness in the area. Painting the tanks an earth tone color which blends into the surrounding landscape and which is approved by the Authorized Officer would reduce the visibility of the tanks, again to the casual observer, and is a standard design feature requirement of the BLM.

Alternative II – No Action

No changes to Visual Resources would occur. With no development the VRM Management Class III and Class IV would retain their current features to the landscape.

4.15 Lands with Wilderness Characteristics (LWC)

Alternative I – Proposed Action

The Cody Field Office conducted an inventory of LWC within the Field Office and found 13 such areas (totaling 243,555 acres) which met the criteria for LWC. Little Dry Creek, is one of the 13 units, (approximately 48,929 acres) where the proposed Buffalo Gap Federal 35-1H would be drilled and possibly at a later date, the Buffalo Gap State 36-1H (located approximately 1 mile to the east) on State land.

Development currently planned includes one well on BLM surface and one well on State of Wyoming surface with production facilities, production pipelines, and upgraded access roads to both wells.

A request for a ROW to upgrade an existing two-track, for an access road to the Buffalo Gap Federal 35-1H well site from U.S. Hwy 14, 16, 20 (Wyoming State Highway 789). A total width of 40 feet with a crown width of 14 to 16 feet and a length of the engineered road will be 378 feet (0.07 miles on-lease, 0.35 acres), and 8,932 feet (1.69 miles off-lease, 8.20 acres), for a total of 9,310 feet (1.76 miles, 8.55 acres) would be disturbed.

An additional ROW for a new access road, which will spur off the main access road (mentioned above), is proposed to have a crown width of 14 to 16 feet to the Buffalo Gap State 36-1H, width is 50 feet, and length of 4,101 feet, 0.78 miles, which would impact 4.71 acres.

There are approximately 44 miles of two-track roads throughout the LWC unit. A total of 1.76 miles of existing two-track would be upgraded to a gravel road. A new road would be constructed to the State lease of 0.78 miles for a total of 2.54 miles of upgraded or new gravel roads to the project site.

Also a request is for a buried production pipe line from the Buffalo Gap Federal 35-1H, width is 50 feet, and length is 28,878 feet for a total of 5.5 miles, and 33.15 acres disturbed.

As a result of the proposed action, naturalness in the southern portion of the Little Dry Creek LWC unit, adjacent to the development would be impacted.

The area would no longer be in a natural condition with approximately 50.5 acres of naturalness value loss due to development. If production was to occur, after successful reclamation of rehabilitating the well pad, roads and buried pipeline, approximately 12 acres would be impacted, allowing 38.5 acres to again appear in a natural condition.

Outstanding Opportunities for Solitude in that southern portion of the LWC, resulting from the proposed action, would also be lost as development of the two wells would be loud, dusty, and not conducive to solitude.

The LWC to the north of the development would retain their naturalness and solitude values.

The Little Dry Creek LWC unit is 48, 929 acres in size. Based upon rehabilitation work as described above, approximately 12 acres would be lost to development. Percent of LWC in the Little Dry Creek unit impacted by the proposed action would be less than 0.0003.

Table 4.1 Acres of LWC

Buffalo Gap Federal 35-1H &	Little Dry Creek LWC	Total acres of well pad pipelines and roads	Percent of LWC Lost
Acres of LWC	**48,929**	**12**	**<0.0003%**
Acres Subtracting Buffalo Gap Federal 35-1H access roads, pipelines from LWC.	**48,917**	**The above total acres are after interim reclamation of the well pads and pipe lines.**	

According to the Draft 6300-2- CONSIDERATION OF LANDS WITH WILDERNESS CHARACTERISTICS IN THE LAND USE PLANNING PROCESS, .24 Authority to Approve Projects that May Impair LWCs; **"**District and Field Managers may approve projects in LWCs that may impair wilderness characteristics if the decision is necessary for the exercise of valid existing rights (VER). The proposed action is considered necessary for exercise of a VER.

Alternative II – No Action

There would be no impacts from oil and gas development related to the proposed action. The Little Dry Creek LWC unit would retain its current size of 48,929 acres, along with its naturalness, outstanding opportunities for solitude, and the supplemental value of geology.

5.0 CUMULATIVE EFFECTS

Past – Past actions in the project area include livestock grazing, off-highway vehicle use, and recreation. Previous oil/gas exploration activity has occurred outside of the general area. Livestock grazing has been occurring in the area for many years. Reservoirs in the general area have provided water sources for wildlife and livestock and have enhanced grazing distribution.

Present – Recreation and wildlife/livestock grazing would continue to cause impacts that are similar to those caused in the past, unless the numbers, season of use, duration of livestock grazing, or some other variable is changed.

Future – The proposed well pad would add about 4.13 acres of temporary surface disturbance and related impacts. The proposed access road and pipeline, would add an additional 8.55 acres. This project, if successful, could increase overall interest in developing oil and gas resources in the general area.

Livestock grazing would continue and it would cause the same kind, amount, and trends of impact that it has in the past unless the livestock numbers and/or kind, season of use, or duration of grazing or some other variable is changed.

6.0 MITIGATION MEASURES APPLIED

Alternative I Proposed Action

Mitigation/Stipulations would be employed including but not limited to:

The applicant would coordinate with the U.S. Army Corp of Engineers (USACE) prior to placing fill in or dredging material from any water features. The USACE would determine if a potentially impacted water feature is a jurisdictional wetland or if it is a Water of the US and if a Section 404 Permit is required to ensure compliance with Section 404 of the Clean Water Act. (Only the USACE can determine whether a wetland is jurisdictional or if a water body is Water of the U.S.).

The applicant would coordinate with the WYDEQ-WQD to obtain/develop a SWDP and SWPPP for surface disturbing activities related to the proposed action and would actively implement and comply with the SWDP/SWPPP. They would also coordinate with the WYDEQ-WQD to obtain/develop any other permit (s) that may be required, i.e., a NPDES Permit for the surface discharge of produced water.

Water applied to the surface anywhere on public land, i.e., to manage fugitive dust along roads and on pads, pressure testing welded steel pipe, etc. as a result of implementing the proposed action would come from permitted non-surface water sources such as wells, sealed springs, etc. or from other non-surface water sources such as treated water from a municipality's water system to ensure that invasive, non-native plant, noxious weed, or other undesirable plant species seeds are not introduced to the site via the water being used.

Water used to manage fugitive dust or for other surface applications related to this project would not contain excessive amounts of dissolved solids, i.e., salts, minerals, etc., heavy metals or other potentially toxic constituents in excess of State of Wyoming water quality standards.

If the well is productive, the related disturbance not needed for production equipment would be re-contoured and interim reclamation would be done.

Painting the tanks an earth tone color which blends into the surrounding landscape and which is approved by the Authorized Officer would reduce the visibility of the tanks.

Alternative II No Action

There would be no additional mitigation measures necessary as the proposed project would not be authorized.

6.1 Residual Effects

Upon completion of re-contouring of well pad areas not needed for production and interim reclamation, the production equipment would be painted an environmentally favorable color, selected by BLM to blend in with the existing vegetative environment.

Vegetation presently occupying the proposed well site and ancillary features would be removed if the proposed action is implemented. Some vegetation adjacent to areas of construction may be inadvertently crushed or damaged during construction. Areas where vegetation is removed would result in a reduction in carrying capacity for herbivorous, faunal species.

Crushed and/or damaged herbaceous vegetation would recover after one or two growing seasons, but some shrubs, i.e., big sagebrush, may take longer than that to recover from the damage or may not recover at all.

Some changes that occur to the soil, subsoil, slope, hydrology, and other physical features of the site would remain indefinitely even after the site is reclaimed.

The plant community type (habitat) that re-establishes on the site after reclamation would likely differ from that which was present pre-disturbance. It is possible that the plant community type may become essentially the same as what was present pre-disturbance, but there is no way to know for sure.

Watershed adjustments such as head cutting and gullying if initiated or exacerbated by the proposed action would probably continue long after the site is reclaimed if left uncontrolled. Engine emissions, fugitive dust, bare soil, runoff, erosion, and increased sediment that remain during the production phase of the project could be residual impacts, but in actuality most would disappear once the facility are removed and the area is successfully reclaimed.

7.0 SOCIOECONOMICS

In compliance with the Mineral Leasing Act, the lessee has the right to explore, drill, and extract hydrocarbons from their lease. The oil and gas sector plays an important role; generating tax revenues and vendor/employment incomes for Big Horn County and the Big Horn Basin. Oil and gas exploration and development in the region has been large part of the economic base for Big Horn County since the early 1900's. Oil & gas production play a crucial role in the areas economy, generating approximately 58 % of Big Horn County's tax base (Petroleum Association of Wyoming).

8.0 INDIVIDUALS, ORGANIZATIONS, AGENCIES CONSULTED

The Wyoming Game & Fish Department, Cody, was sent a letter and copy of the proposed action on November 12, 2010. Mr. Tim Woolley, Wildlife Management Coordinator, Wyoming Game & Fish Department, Cody, responded by telephone on December 7, 2010 stating that they have no concerns with this proposed well, but may have concerns at a later date if a greater number of wells are proposed.

Wyoming State Historic Preservation Office was notified of the proposed project and the findings of the Class III cultural resource inventory report. A letter was received on November 30, 2010 from Mr. Joseph Daniele of the Wyoming State Historic Preservation Office.

In the letter they concur with the Cody Field Office Archaeologist that one site is eligible for the National Register of Historic Places and concur with the findings that no historic properties will be affected by the project as planned. They recommended the BLM allow the project to proceed in accordance with state and federal laws subject to the following stipulation:

> If any cultural materials are discovered during construction, work in the area shall halt immediately, the federal agency must be contacted, and the materials evaluated by an archaeologist or historian meeting the Secretary of the Interior's Professional Qualification Standards (48 Fr 22716).

9.0 LIST OF PREPARERS

Gretchen Hurley, Geologist/Paleontology Program Lead
Kierson Crume, Archeologist
Bryan McKenzie, Range Management Specialist
Jerry Jech, Natural Resource Specialist
Destin Harrell, Wildlife Specialist
David Seward, Natural Resource Specialist

10.0 LIST OF REVIEWERS

Mike Stewart, Field Manager
Fred McDonald, Assistant Field Manager
Ann Perkins, Planning & Environmental Coordinator
Caleb Hiner, Planning & Environmental Coordinator

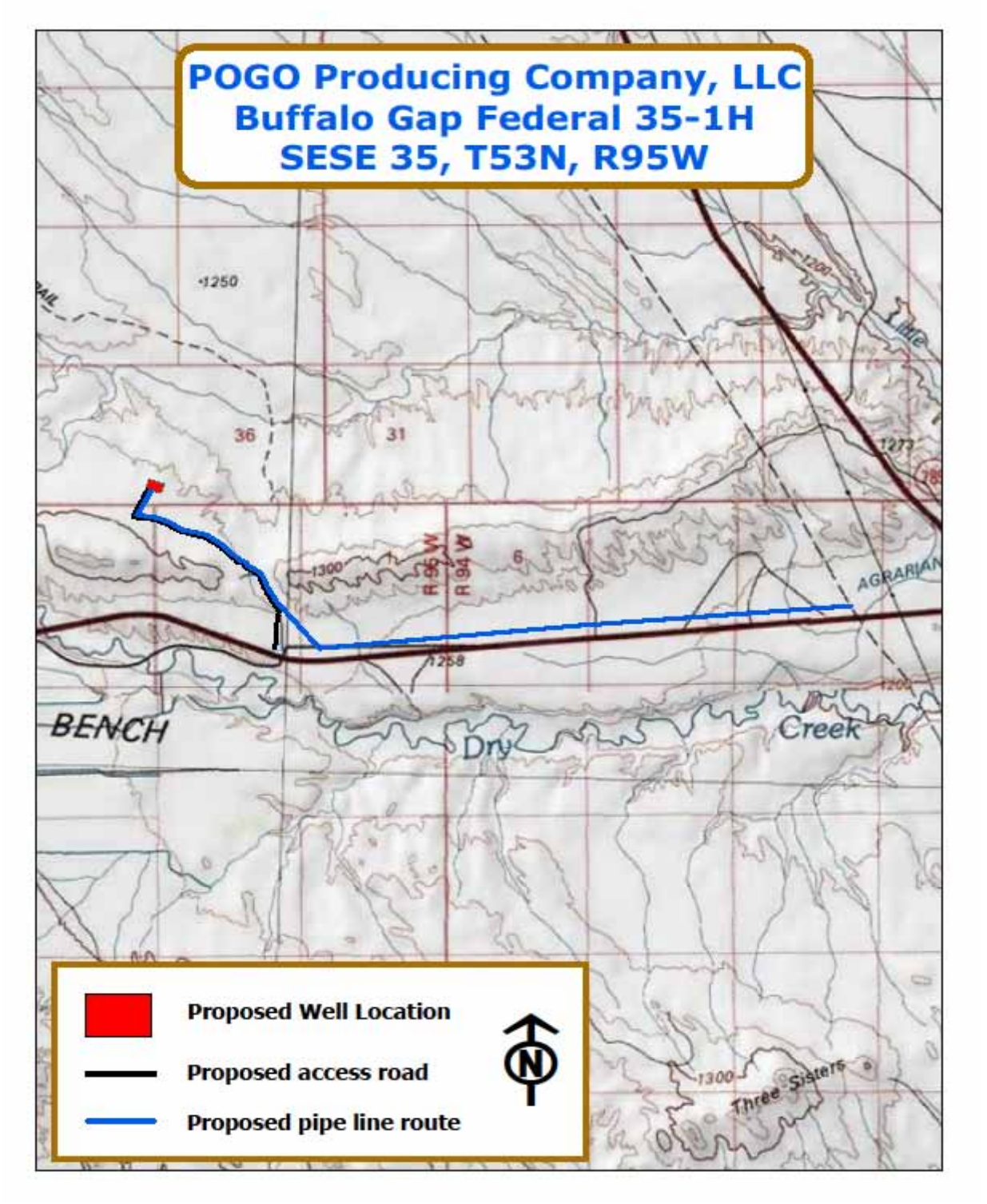
11.0 REFERENCES

Lowry, M.E., Lowham, H.W., and Lines, G. C., 1976, *Water Resources of the Bighorn Basin, Northwestern Wyoming*; U.S. Geological Survey Hydrologic Investigations Atlas HA-512 (2 sheets). Scale: 1:250,000.

Erathem-Vanir, 2010, *Paleontological Resources Letter Report EVG 2010-07* (October 23, 2010), prepared for PaleoWest Archeology for the POGO Buffalo Gap Federal 35-1H well.

APPENDIX A

Location and Pipe Line Map



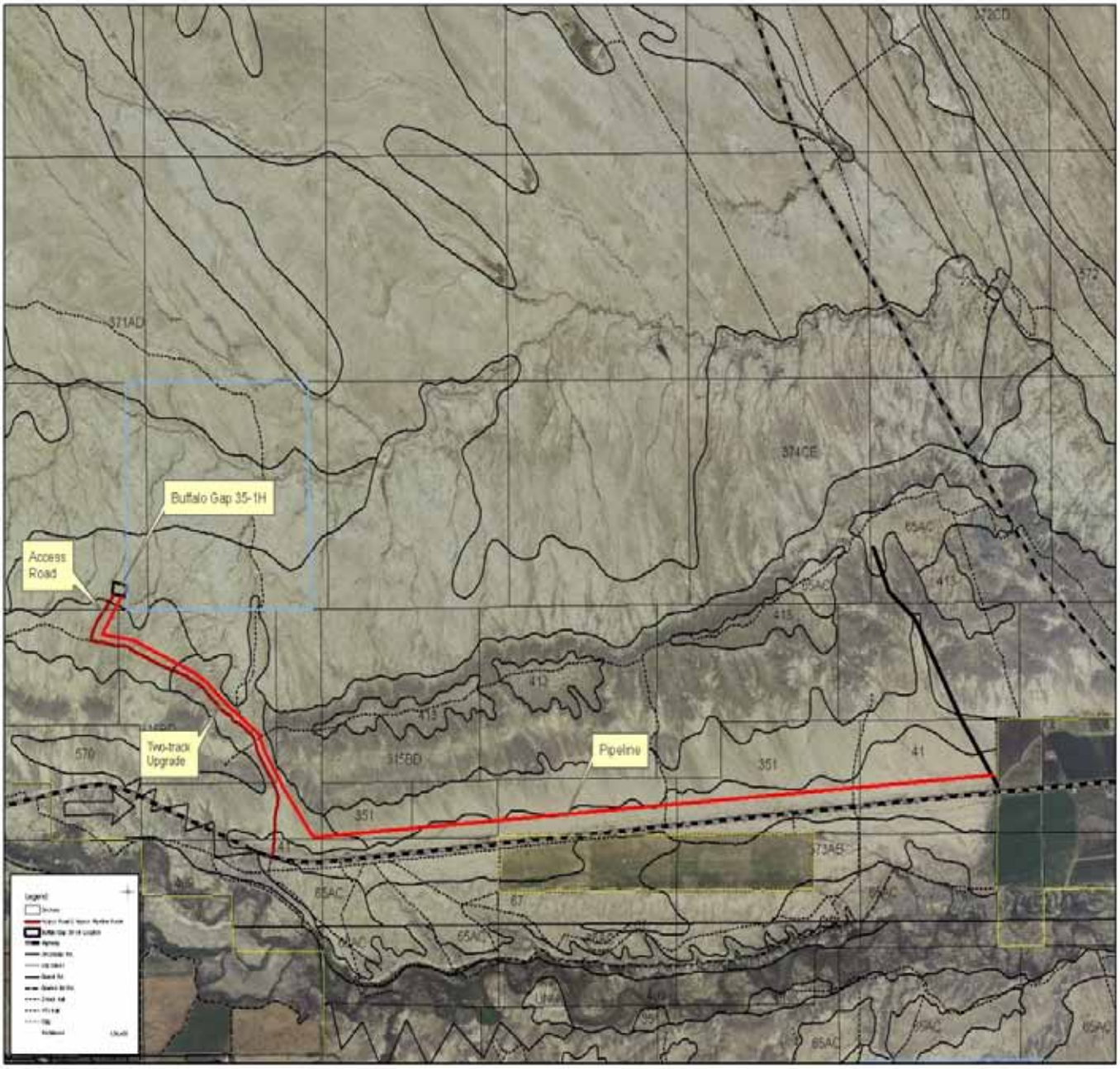
APPENDIX B – SOIL INFORMATION AND MAP AND SITE WRITEUP AREAS/ECOLOGICAL SITES MAP

Table B.1 - Soil Susceptibility to Resource Damage - Ratings for Road Management – Buffalo Gap 35-1H

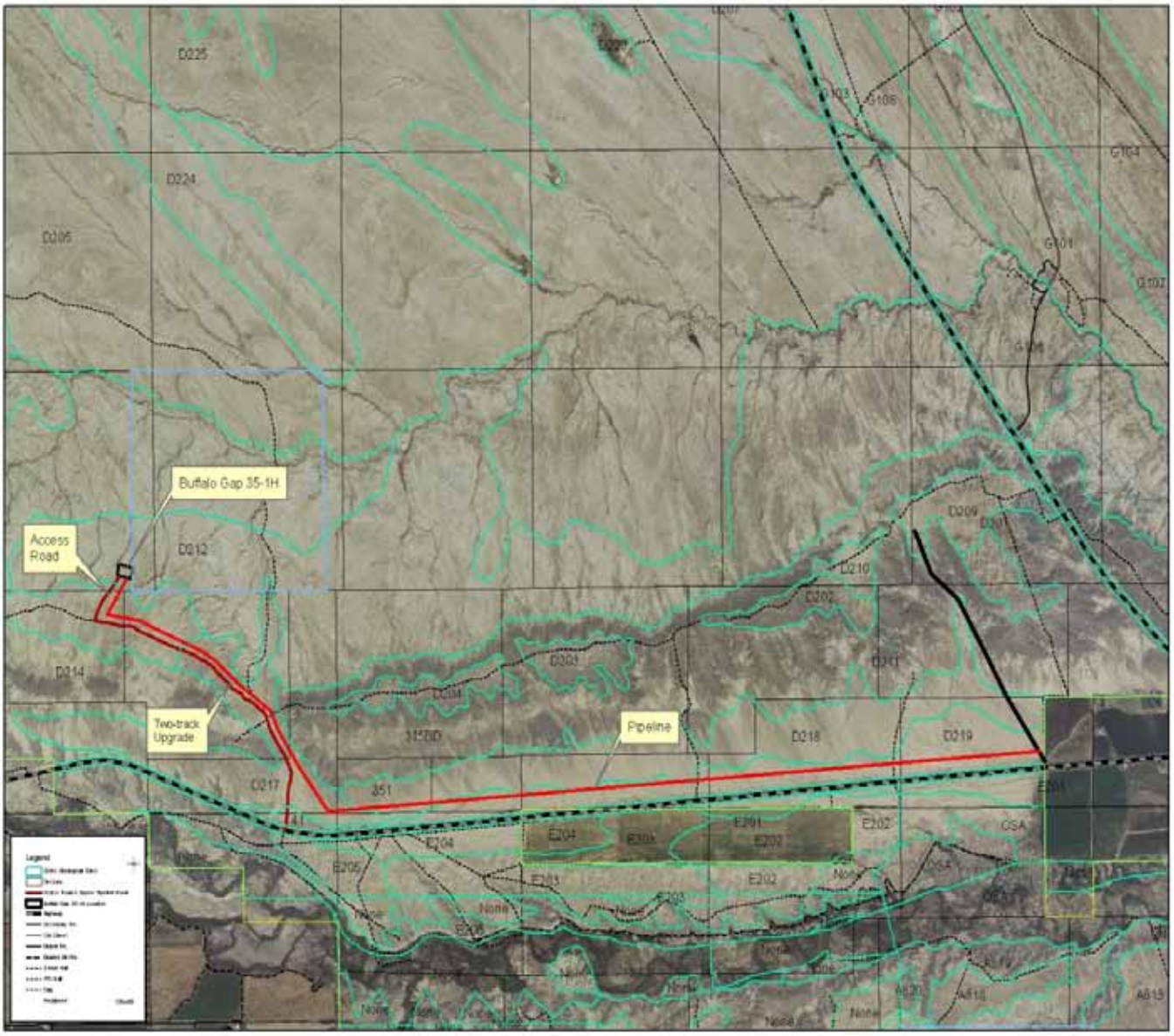
Hazard Class	Greybull - 371AD	Persayo - 371AD, 374CE, & 570AD	Chipeta - 374CE	Stutzman - 41A/41AC	Muff - 570AD	Uffins - 570AD	Lostwells – 351AC
Water Erosion Hazard Soil Slopes	Slight	Slight	Slight	Slight	Slight	Slight	Slight
Loss of Soil Productivity Soil Depth	Moderate	Severe	Severe	0 – Slight	Moderate	0 – Slight	0 – Slight
Blowing Hazard Sandy Soils	0 - Slight	0 - Slight	0 - Slight	0 - Slight	Severe	Slight	Slight
Rutting Hazard (Wet Conditions) Clayey Soils	Severe	Severe	Severe	Moderate	0 - Slight	Moderate	Severe
Dust Hazard - Powder Silty Soils	Slight	Slight	Slight	Slight	Slight	Moderate	Slight
Wetness Flooding or Hazard	NA	NA	NA	NA	NA	NA	NA

Table B.2 - Soil Susceptibility Rating Guide (Fragile Soils) - Buffalo Gap 35-1H								
		Soil Component – Mapunit (s)						
Soil Property	**Resource / Activity Affected**	**Greybull - 371AD**	**Persayo - 371AD, 374CE, & 570AD**	**Chipeta - 374CE**	**Stutzman - 41A/41AC**	**Muff - 570AD**	**Uffins - 570AD**	**Lostwells – 351AC**
Depth	Productivity Reclamation potential	Moderate	Severe	Severe	Slight	Moderate	Slight	Slight
Topsoil Depth	Productivity Reclamation potential	Slight	Severe	Moderate to Severe	Moderate to Severe	Moderate to Severe	Moderate to Severe	Moderate
Depth to Water Table	Productivity Trafficability	Slight	Slight	Slight	Slight	Slight	Slight	Slight
Water Holding Capacity (in/in)	Productivity Reclamation potential	Moderate	Severe	Severe	Slight	Moderate	Moderate	Slight
Slope	Productivity Reclamation potential Off-site impacts Watershed / stream/riparian	Slight	Slight	Slight	Slight	Slight	Slight	Slight
Blowing Hazard (Surface Texture)	Productivity Off-site impacts	Slight	Slight	Slight	Slight	Slight to Moderate	Slight	Slight
Dust Hazard (Surface Texture)	Dusty conditions for users Blowout areas Off-site impacts	Slight	Slight	Slight	Slight	Slight to Moderate	Slight	Slight
Mud Hazard (Surface Texture)	Mud conditions for users Rutted trails and roads	Moderate	Slight	Moderate	Moderate	Slight	Slight	Moderate
Compaction (Soil Texture in Upper 10 inches)	Productivity Reclamation potential	Moderate	Moderate	Moderate	Moderate	Slight	Severe	Moderate
Soil Reaction (pH)	Productivity Reclamation potential	Slight to Moderate	Slight to Severe	Slight to Moderate	Slight to Severe	Slight to Moderate	Moderate to Severe	Severe
Salinity (mmhos/cm)	Productivity Reclamation potential	NA	NA	NA	NA	NA	Severe	Severe

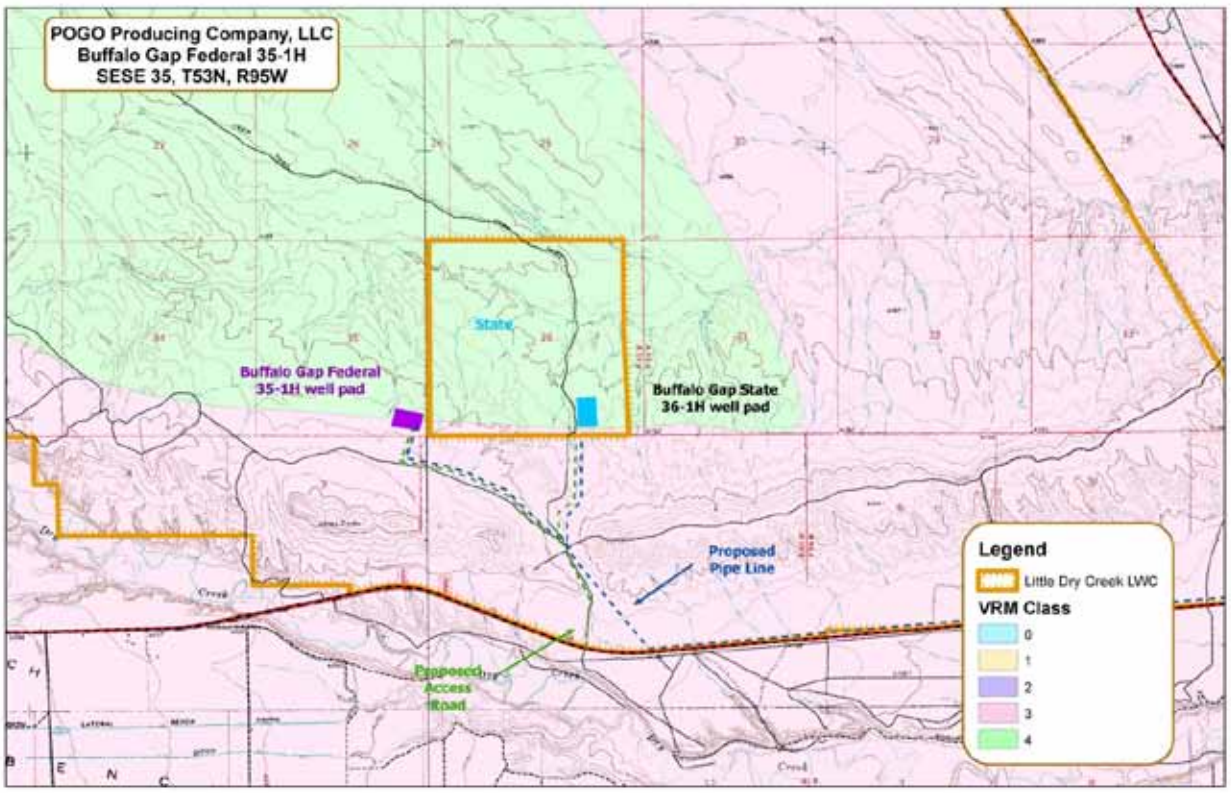
SOILS MAP


Buffalo Gap 35-1H
Access Road
Two-track Upgrade
Pipeline
372CD
371AD
374CE
65AC
41
570
351
67
Legend

SOIL WRITEUP AREAS/ECOLOGICAL SITES MAP



VRM MAP


POGO Producing Company, LLC
Buffalo Gap Federal 35-1H
SESE 35, T53N, R95W
State
Buffalo Gap Federal
35-1H well pad
Buffalo Gap State
36-1H well pad
Proposed
Pipe Line
Proposed
Access
Road
Legend
Little Dry Creek LWC
VRM Class
0
1
2
3
4

APPENDIX C

Mitigation/Stipulations to be applied to the APD
This list of mitigation is not intended to be all inclusive.

PROJECT DESCRIPTION				
Applicant	POGO Producing Company, LLC		**Author**	Seward
Proposed Action	Access Road, well pad, production pipe line		**Date**	January 2011
EA Number	**APD No.**	**Well Number**	**Legal Descriptions**	**Lease Number**
WY-020-EA11-11	CA10-014	35-1H	SESE Section 35, T53N, R95W	WYW-160592

Description of Proposed Action: POGO Production Company, LLC has submitted for review and approval, an Application for Permit to Drill (APD) for a proposed well as listed above, well pad (approximately 4.13 acres in size), access road, and a proposed production pipe line that would transport the production fluids from the well to an existing pipe line. One well pad would be built on Bureau of Land Management surface to allow drilling into federal minerals. One lined two-cell reserve pit would be dug to accommodate the water based drilling phase and a smaller pit for the oil based drilling phase. The production pipe line will leave the well pad and corridor the access road approximately 1.8 miles south, then continue east for about 3.2 miles where it will tie-in with an existing production pipe line.

The existing two-track access road is on the north side of U.S. Hwy 14, 16, 20 and is located approximately 9.5 miles east of the Emblem Bench Road (Highway 32) and approximately 5.0 miles west of the Lovell Highway (Highway 310) intersections. Elevations in the area of the access road and well pad are around 4,000 to 4,700 feet. Livestock grazing in the area is shared by deer, antelope, and a variety of birds and small mammals. The area is used by hunters and other outdoor activity enthusiasts.

Upon completion of the drilling phase, fluids in the reserve pit will be removed and disposed of in an appropriate disposal facility and the pit will be allowed to dry. Once the contents of the pit are dry the pit will be closed and re-contoured and the area and other areas of the well pad not needed for production purposes will be re-contoured and reclaimed. The contents of the oil based pit would be closed using a Soli-bond or Earthworks solidification method. After the production pipe line has been installed the surface will also be re-contoured and reclaimed.

It is the responsibility of the operator to ensure that ALL surface disturbing activities and operations comply with the following: 43 CFR 3101.1-2; 3101.1-3; 43 CFR 3160, Onshore Oil and Gas Orders Nos. 1, 2, 6 & 7, Notice to Lessees (NTL's) 2-B, 3-A, 4-A, and the BLM-USGS-USFS brochure, "Surface Operating Standards for Oil and Gas Exploration and Development" (Gold Book) and appropriate, current State of Wyoming standards regarding storm water discharge requirements of Section 401 Water Quality Division of the Wyoming Department of Environmental Quality, Section 404 of the Clean Water Act with the U.S. Army Corps of Engineers and any/all applicable county, state and federal regulations.

Point Source Primary Contacts:

Leah Krafft, Permitting Supervisor
307-777-7093
lkraff@state.wy.us

Brian Lovett, Inspection/Compliance Supervisor
307-777-5630
blovet@state.wy.us

http://deq.state.wy.us/wqd/WYPDES_Permitting/index.asp

Non-point Source Primary Contact:

Barb Sahl, Program Coordinator
307-777-7570
bsahl@state.wy.us
http://deq.state.wy.us/wqd/WYPDES_Permitting/WYPDES_Storm_Water/stormwater.asp

WY DEQ Water Quality Division Contact Information:

DEQ/Water Quality Division
122 West 25th Street
Herschler Building, 4th Floor-West
Cheyenne, Wyoming 82001
307-777-7781
http://deq.state.wy.us/wqd/

Wyoming USACE Contact Information:

US Army Corps of Engineers
Wyoming Regulatory Office
2232 Dell Range Boulevard, Suite 210
Cheyenne, Wyoming 82009-4942
Telephone: (307) 772-2300, Fax: (307) 772-2920

Program Manager: Matthew A. Bilodeau
Project Managers: Michael A. Burgan and Thomas B. Johnson
https://www.nwo.usace.army.mil/html/od-rwy/Wyoming.htm

NOTE: Per Onshore Order #1, March 7, 2007, *"An APD approval is valid for 2 years from the date that it is approved, or until lease expiration, whichever occurs first. If the operator submits a written request before the expiration of the original approval the BLM may extend the APD's validity for up to 2 additional years. The operator is responsible for reclaiming any surface disturbance that resulted from its actions, even if a well was not drilled."*

One-Call

The Operator is responsible for inspection of the construction area for the presence of both surface and subsurface utility facilities. Wyoming State Law requires that contractors and landowners contact the Wyoming One-Call Center before any excavation begins (811 or 1-800-849-2476, www.onecallofwyoming.com). The operator will use extra safety precautions when working near or around pipelines, power lines, underground cables, or other utility installations.

Cultural Resources Protection Stipulations

If any cultural values [sites, artifacts, human remains] are observed during operation of this lease/permit/rights-of-way, they will be left intact and the Cody Field Manager notified. The Authorized Officer (AO) will conduct an evaluation of the cultural values to establish appropriate mitigation, salvage, or treatment. The operator is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during construction, the operator is to immediately stop work that might further disturb such materials, and contact the AO 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 site can be used (assuming in situ preservation is not necessary); and,
- A time-frame for the AO to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate. 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 measures.
- Human Remains – If human remains are discovered or suspected the holder shall suspend operations immediately, physically guard the area, and notify the BLM immediately.

Paleontological Resources Protection Stipulations

Paleontological Resources Monitoring Requirement: Based on the results of the paleontological site survey (Erathem-Vanir, 2010), an onsite paleontological resources monitor would be required to be present during excavation of any reserve pit into the underlying Willwood Formation. The excavation would be monitored for the presence of any vertebrate or other scientifically significant fossils before installation of the reserve pit liner. The BLM Cody Field Office Geologist will be conducted 48 hours prior to excavation of the reserve pit (#307-578-5943).

Standard Stipulations to protect vertebrate and scientifically significant fossil resources

- **Collecting:** The project proponent/Operator is responsible for informing all persons associated with this project including employees, contractors and subcontractors under their direction that they shall be subject to prosecution for damaging, altering, excavating or removing any vertebrate fossils or other scientifically significant paleontological resources from the project area. Collection of vertebrate fossils (bones, teeth, turtle shells) or other scientifically significant paleontological resources is prohibited without a permit. Unlawful removal, damage, or vandalism of paleontological resources will be prosecuted by federal law enforcement personnel.
- **Discovery:** If vertebrate or other scientifically significant paleontological resources (fossils) are discovered on BLM-administered land during operations, the Operator shall suspend operations that could disturb the materials, stabilize and protect the site, and immediately contact the BLM Cody Field Office Manager (Authorized Officer). The Authorized Officer would arrange for evaluation of the find within an agreed timeframe and determine the need for any mitigation actions that may be necessary.

Any mitigation would be developed in consultation with the Operator, who may be responsible for the cost of site evaluation and mitigation of project effects to the site. If the operator can avoid disturbing a discovered site, there is no need to suspend operations; however, the discovery shall be immediately brought to the attention of the Authorized Officer.

- **Avoidance:** All vertebrate or scientifically significant paleontological resources found as a result of the project/action will be avoided during operations. Avoidance in this case means "No action or disturbance within a distance of at least 50 feet of the outer edge of the paleontological locality".
- If fossils of scientific significance are discovered and collected as a result of the discovery contingency or inspection of the reserve pit, they will be curated into the repository of the University of Wyoming, and a Final Report documenting the discovery and curation of any such specimens shall be prepared and submitted to the BLM.

Wildlife

Mountain plovers

No surface disturbing activities would be allowed from April 10 to July 10 to not avoid disturb or take mountain plovers which have been observed to nest in this area. An exception protocol may be followed if surface disturbing activity must be done (see below).

Mountain Plover Breeding/Nesting Season Exception Protocol: If a surface disturbing activity is requested to take place in mountain plover (MP) habitat (i.e.; areas with low, sparse vegetation, bare ground, prairie dog colonies, etc.) during the MP breeding/nesting season (April 10 - July 10), presence/absence surveys would be required. These surveys would take place within a ¼ mile buffer around the activity and must not occur during poor weather conditions (i.e., high winds, precipitation, etc.).

The initial survey would begin on or after April 20 followed by a second survey 14 days later (earliest date for 2nd survey - May 4th). If cold, wet weather pushes the nesting period later into the spring, and then the initial survey would also need to be pushed back accordingly. These two surveys will capture the vast majority of nesting MPs, with the intent of reducing the risk of concluding the site is not nesting habitat by an absence of nesting birds during a single survey. No surface disturbing activity is allowed to occur until both surveys have been completed and one of the following two findings has taken place:

If **no** MPs are found during either survey, then the disturbing activity must begin within 72 hours. If the disturbing activity doesn't commence within 72 hours, an additional survey will be required to check for late nesting MPs, which will start the clock again giving another 72 hour time period.

If MPs **are** found during the first or second survey, then either:
The activity can be postponed until July 10th with no additional surveys required;
- or -
Additional surveys could be done to locate active nests. Because of the colonial nature of MPs, the entire ¼ mile buffer area would need to be thoroughly surveyed.

When nests are located the activity could commence after 37 days to allow the young MPs to hatch and be mobile, or the nest could be monitored and activity could commence after seven days post-hatching. If a brood of flightless chicks is observed, activities could commence after at least seven days.

Migratory birds

The operator is authorized to conduct surface disturbing activities before or after the peak migratory bird nesting season (April 10 – July 10). The surface disturbing activities can continue as long as they were initiated outside of this season. If a survey is conducted, during the April 10 through July 10 nesting season, documenting no nesting migratory birds then surface disturbing activities may be conducted within 72 hours and upon approval from the BLM – Cody Field Office. Results of the migratory bird nesting survey will be submitted to the BLM – Cody Field Office for review prior to commencement of any surface disturbing activities between April 10 and July 10.

Surface disturbance activities will avoid active prairie dog burrows when possible and minimum disturbance techniques will be conducted when in prairie dog towns.

Additional Conditions of Approval

Reserve pit closure and interim reclamation: Earthwork for interim and final reclamation must be completed within 6 months of well completion or well plugging (weather permitting).

No vehicles would be operated during periods of wet soil conditions when surface ruts greater than 4 inches would occur along travel routes.

Vehicles would be instructed to travel at the posted speed limit to minimize dust and the potential for collisions with wildlife, livestock, and other vehicles.

Project employees and contractors would not be allowed to drive off-road (other than for authorized survey work).

The operator will coordinate with the Wyoming Department of Environmental Quality, Water quality Division, to obtain any required Storm Water Discharge or other Permits and would comply with the provisions of the permit (s). The operator will provide copies of these documents to the BLM – Cody Field Office.

All reserve/cuttings pits will be lined with an impermeable liner having permeability less than 10^{-7}cm/sec. The liner will be installed so that it will not leak, and will be chemically compatible with all substances that may be put in the pit.

The term "hazardous materials" as used here means: 1) any substance, pollutant, or contaminant (regardless of quantity) listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, 42 CFR U.S.C. 9601 et seq., and the regulations issued under CERCLA; 2) any hazardous waste as Environmental Assessment 22 defined in the Resource Conservation and Recovery Act (RCRA) of 1976, as

amended; and 3) any nuclear or nuclear byproduct as defined by the Atomic Energy Act of 1954, as amended, 42 U.D.C. 2011 et seq.

The only fluids/waste materials that are authorized to go into the reserve pit are RCRA exempt exploration and production wastes. These include, but are not limited to:

- Drilling muds & cuttings
- Rigwash
- Excess cement and certain completion & simulation fluids defined by EPA as exempt

It does not include drilling rig waste, such as:

- Spent hydraulic fluids
- Used engine oil
- Used oil filter
- Empty cement, drilling mud, or other product sacks
- Empty paint, pipe dope, chemical or other product containers, or
- Excess chemicals or chemical rinsate

Any evidence of non-exempt wastes being put into the reserve pit shall result in the BLM Authorized Officer requiring specific testing and closure requirements.

All surface-disturbing activities will be supervised by a qualified company representative to ensure the terms and conditions of the APDs and Surface Use Plans are complied with.

The operator will coordinate with the U. S. Army Corps of Engineers if any water feature would receive fill as a consequence of implementing the proposed action to determine if the water feature is a Water of the U. S. or jurisdictional wetland and whether a 404 Permit would be required. The operator will obtain and comply with any permits/BMPs required by the U. S. Army Corps of Engineers.

If the well would prove to be incapable of producing oil and/or natural gas in commercial quantities, it would be plugged and abandoned and the location reclaimed according to BLM standards.
All permanent structures constructed or installed would be painted a flat non-reflective standard environmental color as determined by the AO. Facilities would be painted prior to installation or within 30 days of installation. Some equipment may be excluded from this painting for safety considerations as required by the Occupational Safety and Health Administration (OSHA), such as safety barricades and devices.

All disturbed areas not needed for active support of production operations would undergo "interim" reclamation in order to minimize the environmental impacts of development on other resources and uses.

Interim reclamation is required of any disturbed surface and consists of minimizing the footprint of disturbance by reclaiming all portions not necessary for continued production operations.

The portions of the cleared well site not needed for operational and safety purposes would be re-contoured to a final or intermediate contour that blends with the surrounding topography as much as possible.

Reclamation

BLM – Washington Office Instruction Memorandum No. 2006-073 requires all Field Offices to use seed on public lands that contain no noxious weed seed and meets certified seed quality. All seed to be applied on public land must have a valid seed test, within one year of the acceptance date, from a seed analysis lab by a registered seed analyst. The seed lab results shall show no more than 0.5 percent by weight of other weed seeds; and the seed lot(s) shall contain no noxious, prohibited, or restricted weed seeds according to State of Wyoming seed laws. All seed used on public lands will meet the Federal Seed Act criteria and would contain no (zero) cheat grass seed. Seed may contain up to 2.0 percent of "other crop seed" by weight which includes the seed of other agronomic crops and native plants; however, a lower percent of other crop seed is recommended.

An exemption would be allowed for small reclamation projects, less than 20 acres or not to exceed 200 pounds of seed, which have an approved BLM reclamation or rehabilitation plan or permit. The seed would be acceptable for use on public land if it is accompanied by an official seed analysis report that provides documentation to show it contains no noxious weed seed per the State of Wyoming weed law and no more than 0.5 percent of other weed seeds (cheatgrass seed excluded). For this exception, any one of three seed test documents will be accepted:

- A certified "blue" tag or tags.
- An independent seed lab test.
- A seed lab analysis supplied by a vendor either by seed lot or by seed mix.

Straw, mulches, or other materials applied to public lands must also be certified to be noxious weed and cheat grass seed free.

Plant Species for Saline Upland (5"-9")	Pounds of Pure Live Seed/Acre by Species
Western Wheatgrass	2
Needle and Threadgrass	2
Indian Ricegrass	3
Bottlebrush Squirreltail	3
Scarlet Globe Mallow	1
American Vetch	.5
Cicer Milkvetch	.5
Green Rabbit Brush	1
Gardner's Saltbush	4
Total	17

Note: In the previous table, pounds of seed are shown as Pure Live Seed (PLS). The total pounds of seed must equal the pounds of seed divided by the ratio of pure live seed in the mix, which will always be less than 1.0. Thus, to have two pounds PLS of Canby Blue Grass in a mix, divide "two" by the PLS ratio, which will always increase the quantity needed (example: 2 Lbs of Seed/0.9 PLS = 2.2 lbs. PLS). PLS is derived by multiplying purity by germination data documented by certified seed analysis (example: 0.95 Purity X 0.95 Germination = 0.9 PLS). PLS determinations must be made for each plant species in specific mix and is based on purity and seed viability tests that were conducted by a certified seed lab that is no more than 3 months old. If a seed viability test pertaining to any seed lot that will be used on public land is older than 3 months old the seed will be retested by a certified seed lab for viability and the resulting PLS values will be used to calculate the seeding rate by species.

Preparation of the seedbed, application of seed and any soil amendment, and coverage of the seed is critical to successful re-vegetation. Unless otherwise approved, the following cultural methods will be followed:

a) The site will be ripped or otherwise scarified up to a maximum depth of 12" on 24" centers to prepare a rough seedbed and eliminate compacted soils. The objective is to leave an extremely rough surface for maximum snow and rainfall retention, as well as ridges to protect the surface from wind erosion.

b) The operator will drill seed on the contour to a depth of 0.5 inch, followed by culti-paction to compact the seedbed, preventing soil and seed losses. If the seed is to be applied by mechanical broadcasting, the PLS seeding rate will be doubled and seed will be applied evenly over the entire area to be reclaimed. The broadcast seed will be covered by harrowing, discing, or any other mechanical method of scarifying that assures seed coverage after seeding.

Weed Control

All equipment/material will be cleaned to remove weed seeds and soil (soil may contain weed seeds) prior to transport to the project area. The operator will control invasive and noxious weeds on all areas disturbed by project activities, using mechanical, chemical, or other methods approved by the Authorized Officer and any mulch used will be certified weed and cheat grass seed free.

The operator would be responsible for managing all noxious and undesirable invading plant species in the reclaimed areas, including cheat grass, Russian olive and tamarisk, until the re-vegetation activities have been determined to be successful, and the bond has been released for a given area. If noxious or invasive weeds are encountered, the BLM and/or the County Weed and Pest Department would be consulted by the operator/holder for suppression and control methods. If chemical herbicide control methods are used on public lands, only BLM approved chemicals and application methods will be permitted. A Pesticide Use Proposal (PUP) must be submitted and approved by the BLM before initiating chemical control methods. Any questions regarding acquiring or submitting a PUP, please contact the BLM – Cody Field Office at (307) 578-5900.