

United States
Department of the Interior
Bureau of Land Management

Miles City Field Office

Denbury Onshore LLC
APD South Pine Unit 41X-26A

Environmental Assessment (EA)
DOI-BLM-MT-C020-2013-0133-EA

For Further Information Please Contact:

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BLM



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

ENVIRONMENTAL ASSESSMENT REVIEW

OFFICE/AREA: Miles City Field Office	DOI-BLM-MT-C020-2013-133-EA
	DATE POSTED: 4/19/13
NAME: Denbury Onshore LLC	DATE DUE: 4/26/13
	FUNDING: 9141 EJ
LOCATION: Fallon County, Montana NE¼NE¼, Section 26, T. 11 N., R. 57 E.	

ORIGINATOR DATE/INITIALS	TITLE	ASSIGNMENT
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REVIEWERS	TITLE	ASSIGNMENT	DATE/INITIALS
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Paul Helland	Petroleum Engineer	Subsurface Resources	5-3-2013/PH
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ENVIRONMENTAL COORDINATOR

5/13/2013

DATE

ENVIRONMENTAL ASSESSMENT

EA NUMBER: DOI-BLM-MT-C020-2013-133

PROPOSED ACTION/TITLE TYPE: Denbury Onshore LLC, 1 APD, South Pine Unit 41X-26A, MTM02170

LOCATION OF PROPOSED ACTION: NE¹/₄NE¹/₄, Section 26, T. 11 N., R. 57 E. Fallon County, Montana (MT)

PREPARING OFFICE: Miles City Field Office (MCFO), Miles City, MT

APPLICANT: Denbury Onshore LLC

DATE OF PREPARATION: April 16, 2013

CONFORMANCE WITH APPLICABLE LAND USE PLAN: This proposed action is in conformance with the Big Dry Resource Management Plan (RMP) Record of Decision (ROD) approved in 1996. On page 14 of the ROD, it states “The BLM planning process determines availability of federal lands for oil and gas leasing where BLM is the surface management agency.”, and on page 13, “A lease grants the right to explore, extract, remove, and dispose of oil and gas deposits that may be found on the leased lands. The lessee may exercise the rights conveyed by the lease, subject to lease terms and any lease stipulations and permit approval requirements.” The proposed well would be located in an area that is open to oil and gas leasing, exploration and development (ROD, page 15). The proposed well would be drilled on existing Federal leases that do not include stipulations; however, BLM can impose requirements as part of the approved permit (ROD, page 14).

PURPOSE AND NEED: The purpose and need of this action is to determine whether to permit environmentally responsible exploration and development of the oil and gas resource within the project area, consistent with the existing leases to continue to meet the nation’s energy needs. This includes development of this project with the appropriate mitigation consistent with the goals, objectives, and decisions of the Big Dry Resource Management Plan and within the constraints of applicable policies, regulations, and laws.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

PROPOSED ACTION: The Denbury well would be completed on federal surface, penetrating Federal minerals. The proposed action is to build one well pad, construct supporting infrastructure including the installation of a flowline, install a powerline and drill a vertical well bore into the Winnipeg Formation to allow evaluation of the Red River and other potentially productive formations. Once drilled, the well would be tested, and if commercial quantities of oil or gas are discovered, the location would be completed for production. Drilling is expected as soon as all the necessary permits have been obtained (subject to any timing restrictions for the protection of wildlife). The drilling operations are expected to take approximately 30 days. The well would be drilled in full compliance with all applicable laws, regulations (43 CFR 3100), *Onshore Oil and Gas Orders*, the Application for Permit to Drill (APD) and any Conditions of Approval.

Table 1.

Well name and Number/Lease No.	Drilling Pad Footages, (acres: max cut/fill)	Access Road Footages (acres)	Flowline (footages, bearing) (acres)	total
41X-26A/ MTM02170	310'x400' (3.66 acres; 6.0/ 4.5)	174' x 18' (.07 acres)	1,188 x 30' NW (0.8 acres)	4.53 acres

Access

The proposed well is approximately 26 miles southwest (straight-line distance) of Wibaux, Montana. Total distance from Wibaux to the proposed location using State Highways, County Roads, and the well roads is approximately 42 miles.

The proposed access road for the well is approximately 174 feet. (*See map 1*) The road would have a running surface width of approximately 18 feet. The borrow ditches would be back sloped 3:1 or shallower. The access road would be constructed in accordance with the guidelines established for oil & gas exploration and development activities as referenced in the joint BLM/USFS publication: *Surface Operating Standards for Oil and Gas Exploration and Development*, Fourth Edition and/or BLM Gold Book (Gold Book).

Well Site Construction And Drilling

The proposed action for drilling and producing oil includes constructing one well pad and a short road segment to accommodate drilling one vertical oil well, which is located in the NE $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 26, T. 11 N., R. 57 E., in Fallon County, Montana as shown in Table 1.

The proposed well pad would be approximately 310 feet wide \times 400 feet long. If the well is completed as a successful producer, or if it is unsuccessful, the surfacing would be removed from the location when the surface disturbance is reclaimed. Topsoil would be removed from the area needed for well pad construction and saved for reclamation. Trash would be disposed of in an enclosed container at an approved landfill. Self-contained toilets and closed septic systems would be used for sewage which would be disposed of in accordance with State regulations. A 160' long \times 45' wide \times 14' deep, lined reserve pit would be excavated in "cut" material on each pad. The reserve pit would be lined with a leak resistant plastic liner a minimum 12 mils in thickness. At the location, the reserve pit would be fenced during drilling operations on three sides, and when the drill rig is removed, the fence would be completed on the fourth side of each reserve pit. This is done to keep out wildlife and livestock. The reserve pit would be netted to prevent bird mortality after the drilling rig is moved from location. Drilling fluids and cuttings would be contained in the pit. Pooled fluids would be vacuumed out of the reserve pit and be disposed of at an approved facility, and the solids in the pit will be allowed to dry in place and buried. Produced fluids would be contained in sealed tanks until the construction of oil production facilities are completed.

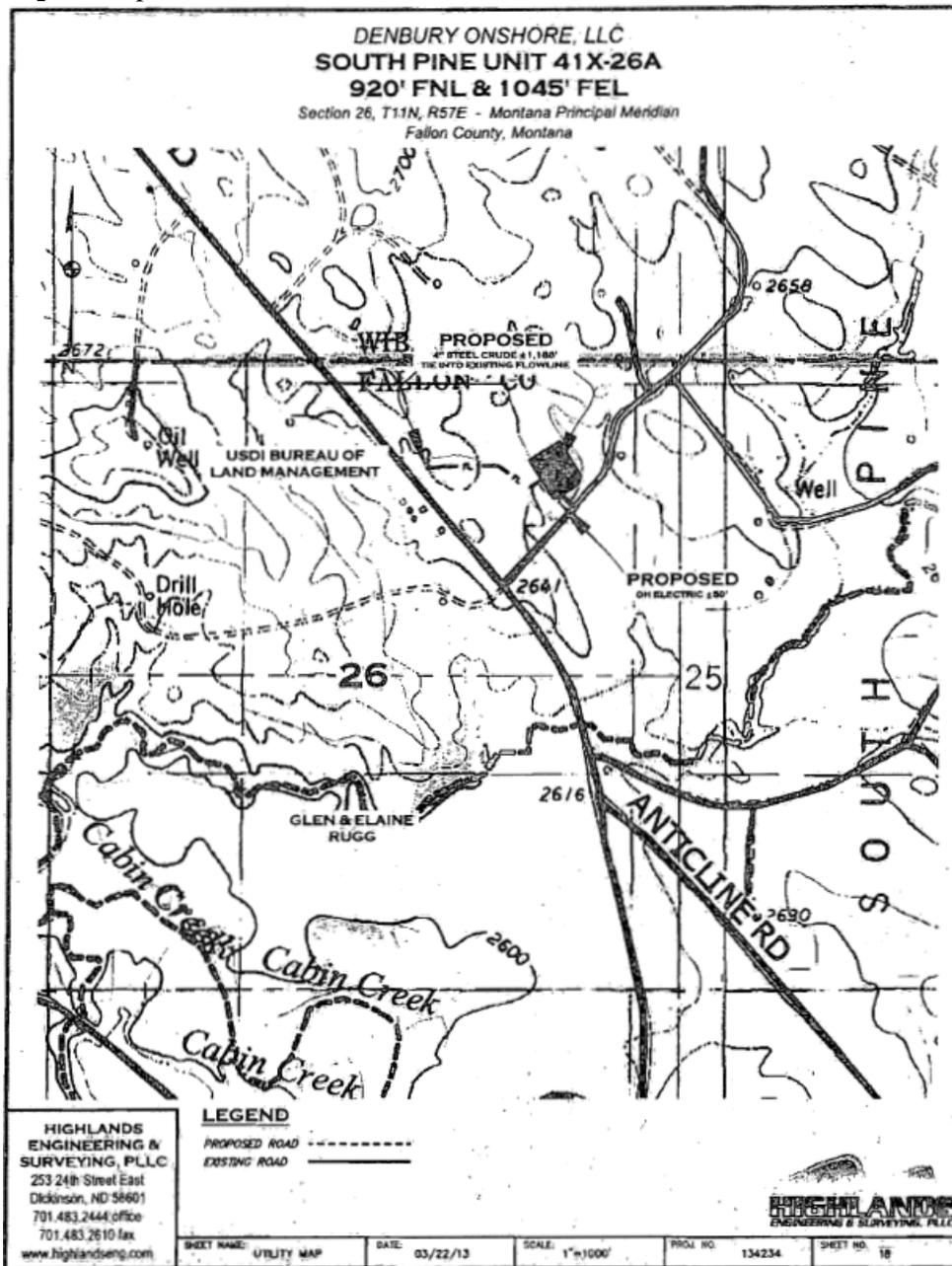
The proposed action for drilling operations is to drill the well vertically to a depth of 9,956 feet and would produce oil and gas from the Red River Formation. The intermediate portion of the well would be drilled using an invert oil mud system.

Shallow aquifers would be protected by setting surface casing to about 1,700' feet and cementing back to surface. Potentially productive hydrocarbon zones and deeper aquifers are isolated by running production casing to 9,956 feet. An appropriately sized blow out preventer (BOP) would be used to control the well and prevent the accidental release of hydrocarbons or salt water into the environment.

Flowline and Construction

Production would be to a central battery located in the SW $\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 26, T11N, R57E; the proposed pipeline would be a 4 inch steel crude line 1,188 feet in length across federal surface and would tie into an existing flowline (*See Map 1*). If any new facilities are required at the central facility, Denbury would submit a Sundry Notice for approval outlining the proposed facilities.

Map 1. Proposed well site 41X-26A, access road, and flowline



Powerline Construction

The powerline would be installed an estimated 50 foot length, from the well sites to tie-ins at existing overhead powerlines to the southeast. This would be a single phase, overhead 14.4 kV electric distribution line. The powerline would consist of a guide-wire structure and one 40-foot pole and a 10-foot cross-arm. No site clearing or topsoil removal would be necessary. The powerline segments would be constructed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power Lines," Raptor Research Foundation, Inc., 1981, as amended in 1996 and 2006.

Production Facilities

Production facilities would consist only of a pumpjack and power pole. The pump jack would be painted Covert Green within six months of well completion and maintained as such to comply with visual quality objectives. The access road and production pad would have scoria as the foundation for the surfacing

material then topped with pit-run gravel to comply with visual quality objectives.

Denbury would eradicate weeds on the entire project area with established guidelines of Federal, State, and Local Agencies, in accordance with an authorized pesticide use plan. Denbury would require all vehicles entering and leaving location to be in clean condition to minimize transport and establishment of noxious weeds.

Interim Reclamation

After this well is completed for production, the location and surrounding area would be cleared of all unused tubing, equipment, debris, materials, trash, and junk and items not required for production. The well pad would be reduced in size to accommodate only as much of the area that is needed for the pumping unit and a work-over rig, which is approximately 170 feet by 180 feet (approx .7 acres). The unused portions of the well pad would be re-contoured, topsoil redistributed, and seeded with the prescribed seed mixture. The top soil areas would be seeded promptly after completion of drilling operations, depending on season/weather constraints. The entire disturbed areas would be fenced to help establish vegetative cover. Disturbed areas would be monitored for erosion and action would be taken to stabilize, repair, and re-seed eroded or washed areas.

Final Reclamation

When the well is plugged and abandoned, Denbury would submit a Sundry Notice to the Authorized Officer for approval to complete the final abandonment requirements for reclamation of the location. At final abandonment, the well location, and access road would undergo “final” reclamation so that the character and productivity of the land are restored.

The well would be plugged according to federal or state requirements. After the well is plugged, the location would be cleared of all facilities, equipment, and the surface reclaimed. The surfacing material would be removed. The well sites and other disturbed areas would be recontoured and seeded with the prescribed seed mix. Erosion control measures would be installed as needed. An abandonment marker would be installed on the well casing and it would be cut off 4’ below ground level.

The access road would be reclaimed to near natural conditions removing scoria, re-contouring all cut and fill slopes, and establishing all natural drainage.

NO ACTION ALTERNATIVE: The “no action” alternative would be that BLM would not authorize the application to drill the proposed well.

ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

Alternative with Least Restrictive Timing Requirement

The timing restriction shown below, designed to minimize effects to nesting migratory birds is not a lease stipulation attached to the subject lease but could be imposed via a condition of approval attached to the APD in accordance with Onshore Order Number 1 (43 CFR 3101.1-2). However, the less restrictive timing was dropped from further consideration because the timeframe was determined to be not as effective in protecting migratory birds as compared to the longer timeframe analyzed in this analysis as well as previous documents. This is based on analysis of wildlife impacts for this alternative which is incorporated by reference from the Nadel & Gussman Rockies LLC, MTM95366 Environmental Assessment (MT-C020-2011-211) and the Continental Resources, Inc. MTM 84665 Environmental Assessment (MT-C020-2011-137).

To minimize effects to nesting migratory birds in the vicinity of the proposed action, no ground disturbing activities would occur from April 15 to July 15 or the option of pre-construction surveys performed by a qualified biologist would be required. If no nesting migratory birds are found approval would be granted by the Bureau. If nesting birds are found, activities would be precluded until after July 15 or allowed if nests could be avoided by the activity in a manner

which would not result in nest abandonment.

AFFECTED ENVIRONMENT:

Table 2. The following critical resources have been evaluated in this EA:

Mandatory Item	Potentially Impacted	No Impact	Not Present On Site
Threatened and Endangered Species		X	
Floodplains			X
Wilderness Values			X
ACECs			X
Water Resources	X		
Air Quality	X		
Cultural or Historical Values		X-DM	
Prime or Unique Farmlands			X
Wild & Scenic Rivers			X
Wetland/Riparian			X
Native American Religious Concerns			X
Wastes, Hazardous or Solids	X		
Invasive, Nonnative Species	X		
Environmental Justice		X	

Water Resources, Air Quality, and Invasive/Non-native Species are potentially affected and will be analyzed further, as will other potentially affected resources. Forestry, Geology, Recreation, Wetlands, Livestock Grazing, or Ecologically Critical Areas are not considered to be affected by the proposed action and will not be analyzed in detail in this Environmental Assessment.

Air Quality: The public land in this area has a Class II air quality rating. The air would contain some pollution from the oil and gas activities in the area, including hydrogen sulfide gas, sulfur dioxide gas from venting and flaring activities, and dust particulates from surface-disturbing activities. The nearest Class I airshed is the southern portion of Theodore Roosevelt National Park in western North Dakota, which is approximately 50 miles northeast of the project area.

Cultural Resources/Paleontology: The Area of Potential Effect for Well #41X-26A, was inventoried for cultural resources in March 2013. No sites were recorded at the well pad location. One previously recorded site, 24FA323 is recorded near the proposed flowline from the well pad. The site is eligible for listing on the National Register of Historic Places. As the project is presently proposed, the site would be avoided by over 100 feet (See BLM Cultural Resources Report MT-020-13-100). BLM has determined that the proposed well pad and associated infrastructure would have no effect to historic properties

Paleontology: The undertaking is located entirely within the Pierre Shale formation. The Pierre Shale formation has been rated 3a in the Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands (Moderate Potential to yield vertebrate fossils). Areas classified as Class 3a (Moderate Potential) are known to contain vertebrate fossils or scientifically significant non-vertebrate fossils, but these occurrences are widely scattered. Common invertebrate or plant fossils may be found in the area. The potential for a project to be sited on or to impact a significant fossil locality is low. As a result, no paleontological survey of the area is necessary. The cultural surveys of the area did not locate or identify any surface exposures of the underlying geologic formations and review of the Miles City Field Office’s RMP Class I Paleontological Database did not indicate any paleontological localities having been located in the project vicinity.

Hydrology: The proposed project is in the Lower Yellowstone River (4th Order HUC 10100004) watershed. It is located in the headwaters of Cedar Creek. Cedar Creek joins the Yellowstone River approximately 21 miles northwest of the project site, and approximately 11 miles upstream (southwest) of Glendive, Montana. The Yellowstone River is a tributary of the Missouri River.

The segment of Cedar Creek which would receive runoff from this project (from 26 to 45 miles above the mouth) is not listed on the MDEQ's 2008 303(d) list for impaired streams; however the lower portion (from the mouth 26 miles upstream) is listed. The identified probable causes of impairment for this lower reach are bank erosion, metals, and other habitat alterations. The identified probable sources are grazing in riparian areas and spills.

The segment of the Yellowstone River where Cedar Creek enters (from Powder River to the Lower Yellowstone Diversion Dam) is listed on the MDEQ's 303(d) list. The identified probable cause of impairment is fish-passage barrier. The identified probable source of impairment is dam construction. Although this segment is considered to be impaired, no TMDL is required since there has been no pollutant-related use impairment identified (4C classification) (http://deq.state.mt.us/wqinfo/303_d/303d_information.asp).

The water quality of the surface runoff in this area is determined by the soil chemistry, topography and the quantity of vegetation. Protection of the soil by vegetation is an important component for the prevention of erosion and improvement of the surface water quality. Steep, open, raw slopes, of the area yield sediment laden water of poor quality. Well vegetated shallow slopes (less than ~30%) yield runoff which is of relative good quality.

The bedrock unit in this area is the Pierre Shale, and it has no aquifers in this area. Shallow wells in the area generally draw from thin alluvial deposits lying on the Pierre Shale.

Lands/Realty: There are numerous BLM-issued rights-of-way (ROWs) in the area of the proposed project. These ROWs consist of three Mid-Rivers Telephone Cooperative buried telephone lines (Serial Numbers: MTM-25791, MTM-67017, MTM-71919); one MDU overhead 12.47 kV powerline (SN: MTM-74892); one Fallon County Road ROW for the Anticline Road (SN: MTM-98176) and four pipelines: 1) WBI Energy Transmission, Inc. 8-12" Gas Pipeline 50' wide ROW MTBIL-031412; 2) Bridger Pipeline LLC 12" Crude Oil Pipeline 50' wide ROW MTM-013539; 3) Bridger Pipeline LLC 10" Crude Oil Pipeline 50' wide ROW MTM-020555; and 4) Denbury Onshore LLC 3" Gas Pipeline 50' wide ROW MTM-022533.

Livestock Grazing: Livestock grazing is permitted season long on the Tague Unit Allotment (01121) from March 1st through February 19th. The allotment is permitted for 199 Animal Unit Months (AUMs). There are no range improvement projects recorded on public lands.

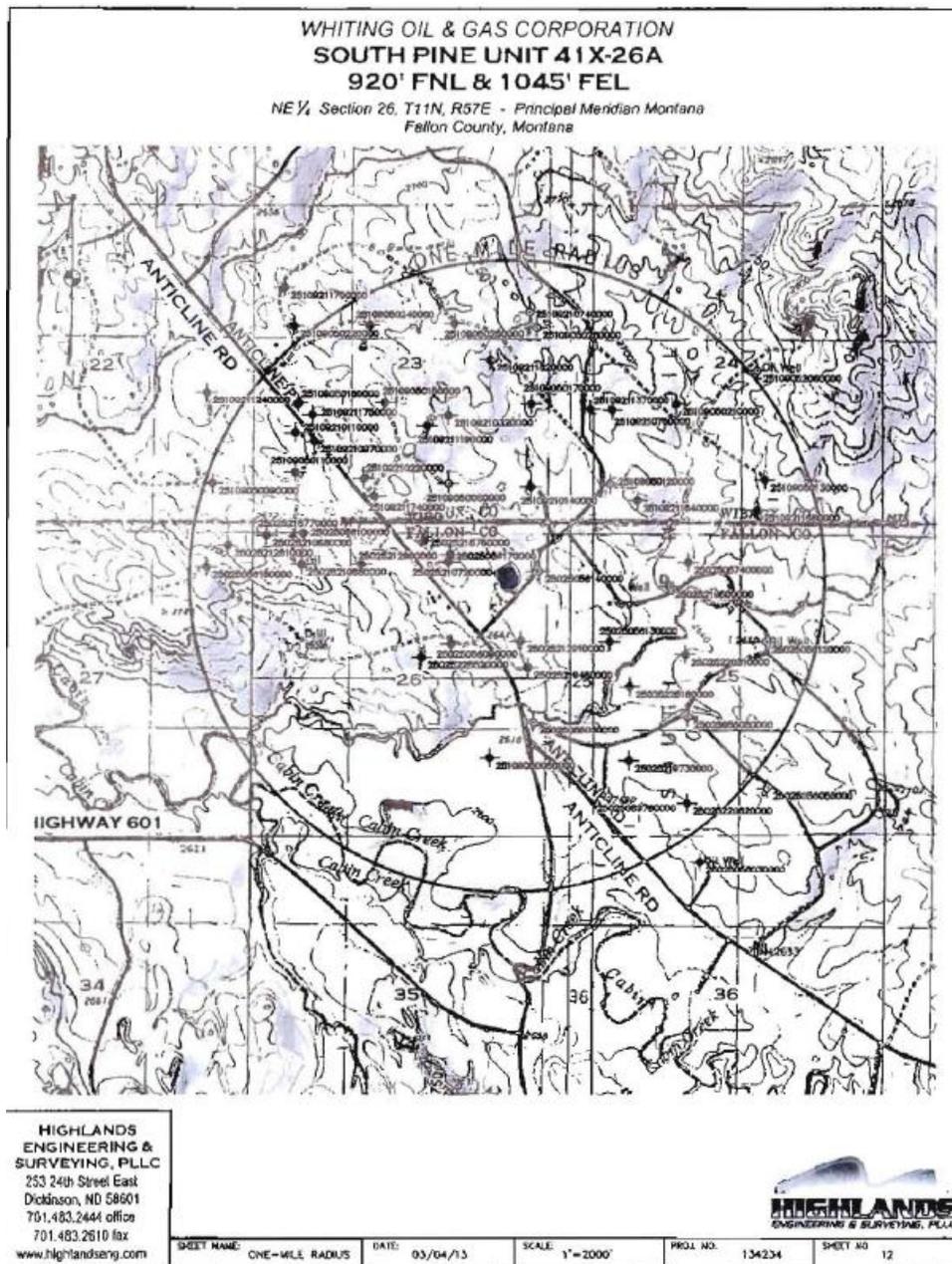
Minerals: This oil well would result in the production of oil from the Red River Formation. Other mineral resources present in the area would not be affected by this action.

Recreation: Recreational big game and upland bird hunting occur in this general area.

Soils: Soils in this area have developed in residuum and alluvium derived from the Cretaceous Pierre Shale which consists of black to gray shale with thin strata of claystone, siltstone and bentonite. As a result, surface and subsurface textures are commonly clay, silty clay loam, and clay loam. The characteristics of the marine shale parent material, dominates physical and chemical characteristics of the soils. Soluble salts, predominately sodium, are present in most soils of the area. Slope wash concentrates these salts in the lowest parts of the landscape, usually in or near drainages. Concentration of salts may result in a claypan area. Salts in these areas will effect vegetation populations in areas of concentration. Surface crusting on these soils further affects seedling growth. Topography is commonly gently rolling.

These soils are susceptible to water erosion due to poor infiltration. Limited vegetative cover may result in wind erosion. These soil characteristics make reclamation of these soils difficult.

Map 2. Proposed South Pine Unit 41X-26A well location w/ 1 mile buffer



Vegetation: The majority of the proposed project area vegetation type is characterized by the Wyoming big sagebrush/western wheatgrass (*Aremisia tridentate* subsp. *wyomingensis*/*Agropyron smithii*) (Hanson et. al, 2008) habitat type. Relatively undisturbed later seral stands of the habitat type are dominated by a scattered cover of the sagebrush over an extensive graminoid understory. The stands are open and much soil surface is exposed. Western wheatgrass dominates the understory in relatively undisturbed stands. A variety of forbs and other graminoid species may be present, but none of these are prominent. Disturbed stands of this habitat type are still dominated by scattered big sagebrush, but have much greater diversity of herbaceous species and dramatic increase in weedy and disturbance induced graminoids. There is also

Rocky Mountain Juniper (*Juniperus scopulorum*) scattered throughout the project area. Due to its extensive root systems, the species is an excellent soil binder.

Visual Resource Management (VRM): This region has low rolling hills and fields covered with prairie vegetation on slopes, and brushes in the draws, or are cultivated croplands. There are fence lines locally, and livestock are being pastured on this location. The geomorphologic features of this region are the result of glaciation, and the viewshed is consistent with the VRM Class IV Objectives. The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic landform elements.

Wildlife: Numerous wildlife species inhabit the proposed action area. Wildlife species include mule deer, pronghorn, sage-grouse, sharp-tailed grouse and a wide variety of non-game wildlife species including migratory birds. Three sage-grouse strutting grounds exist within two miles of the proposed well. Two are confirmed active status leks and one is unconfirmed status. Sage-grouse are currently classified as a Candidate for listing as threatened and endangered but precluded due to other higher priority species. One active sharp-tailed grouse dancing ground also exists approximately ½ mile from the proposed well. Spragues pipit, Brewers sparrow, chestnut-collared longspur and other BLM Sensitive bird species may inhabit the area. No other BLM Special Status Species are known to exist in the action area. It is also within pronghorn winter range.

DESCRIPTION OF ENVIRONMENTAL EFFECTS FROM PROPOSED ACTION:

Air: Air quality within a short distance from construction and drilling and completion activities would be temporarily affected by increased dust levels, exhaust gas from rig and vehicle engines, and other activities related to the surface disturbance prior to drilling, and during the drilling/completion of the oil well. Flaring or venting of produced gas may be necessary to produce this well but would not degrade air quality to large degree. Existing air quality and visibility would be temporarily affected by fugitive dust from vehicles, and vehicle emissions. These impacts would not be anticipated to exceed air quality standards. Noticeable affects to Class I air sheds are not anticipated as Theodore Roosevelt Park is approximately 50 miles southeast of the location. Application of scoria surfacing material and completion of reclamation would help reduce fugitive dust levels.

Cultural/Paleontology: There will be no impacts to cultural resources as a result of the selection and implementation of the Proposed Action alternative or with the selection and implementation of the No Action alternative. The proposed action would have no effect to historic properties. Unanticipated discoveries during facility construction would be dealt with through implementation of Condition of Approval #2.5 attached to this document. No impacts to paleontological resources are anticipated through the proposed action.

Hydrology: Using a fresh water mud system and cementing the surface casing string back from 1,800 feet to the surface will protect fresh water shallow aquifers. The possibility of spills and aquifer contamination can be reduced to insignificant levels through the use of proper drilling procedures and appropriate Conditions of Approval. During construction and drilling operations there will be an increase in soil erosion rates at the pad location due to the disturbance of vegetation. The overall effects of this action on surface waters will be a slight short-term increase in suspended sediment loads, salinity (EC), and sodium adsorption ratio (SAR). These effects will be of short duration since pads will be pulled back and reclaimed immediately following well completion. Erosion rates will return to natural levels once vegetation is reestablished. Due to the diffuse nature of the construction activities, and the presence of sediment filtering vegetation between the construction sites and live waters, these effects will be nearly unnoticeable. Groundwater is not anticipated to be affected by this action.

Lands/Realty: The buried telephone lines, overhead powerline, access road, and buried pipelines authorized by BLM issued ROWs in the area could be impacted by installation of the infrastructure associated with the proposed well if they are not avoided. Since the proposed well and associated facilities are within the Pine Unit no ROW would be required.

Livestock Grazing: According to the grazing permits, livestock grazing has remained relatively constant in the project area for some time (no data exists to document changes made by the respective permittees in response to mineral development (i.e. changes in numbers, grazing periods, movements, or changes in supplement management)).

No data exists in the grazing files or monitoring files which indicates any changes have occurred over the years to livestock numbers, rotations, or seasons of use due to oil and gas activity. No reports or complaints have been submitted to the BLM regarding loss of livestock to airborne dust, other health issues related to mineral development, or vehicular accidents.

Minerals: Completion of the proposed well as an oil well along with the installation of the associated infrastructure would result in additional oil and natural gas entering the market and an increase of royalties to the Federal and State governments. Production and test results may lead to drilling additional wells in the area.

Socioeconomics: Drilling/development activities would contribute to the local economy by providing employment opportunities, monies to local contractors, increased local tax base, and recycled revenues through the local economy. Additional revenues would be generated in the form of royalty payments to the state and federal governments.

Soils: Approximately 4.53 acres of soils would be disturbed by well-pad and infrastructure, construction, resulting in soil mixing, and ground-cover removal. Such surface disturbing acts alter soil characteristics and reduce ground cover exposing soils to accelerated erosion by wind and water. Soil recovery following disturbance would be accelerated by measures that minimize the total area of disturbance, control wind and water erosion, maintain topsoil viability, and reduce compaction, as well as rapid implementation of reclamation.

Once construction is completed and vegetation is reestablished, erosion should return to natural conditions. Monitoring would be needed to assure the effectiveness of these reclamation activities. Measures such as applying mulch, erosion control matting, surface roughening, wind fencing, or additional seeding may be required. Monitoring would be used to assess the effectiveness of these reclamation activities.

Vegetation: Approximately 4.53 acres would be removed by the proposed oil well. The well location and road would be reclaimed, contoured and seeded to meet BLM's requirements following construction or abandonment operations. The reclamation measures, along with an approved weed management plan, would ensure potential impacts from noxious weeds and invasive plants would be minimal. The reclamation measures in the Surface Use Plan and Conditions of Approval would help mitigate potential impacts from noxious and invasive weeds.

Following plugging and abandonment, the disturbed areas would be reclaimed, contoured, and seeded, to BLM's requirements to reestablish a vegetation regime. The disturbance would present the opportunity for noxious weed invasion and spread, which may be brought in by natural carries and/or construction equipment.

Wildlife: Approximately 4.53 acres of rangeland vegetation will be lost and temporarily disturbed by the well pad and road construction. Re-seeding the area should help to restore the lost wildlife forage and

habitat. Construction, drilling, and/or production may result in permanent or temporary displacement of some wildlife species. However, on a landscape basis, the access road and well pad will contribute to additional wildlife habitat fragmentation, with the impacts to wildlife over the long term resulting in a loss of habitat for nesting, foraging, breeding and cover. When the field is no longer producing and successful vegetative reclamation of the field has occurred, the area will once again provide habitat for the wildlife species associated with these habitat types.

Impacts of energy development to songbirds and other migratory bird species includes declines in breeding densities near roads, powerline electrocutions, and other impacts from noise and habitat fragmentation. The Migratory Bird Treaty Act prohibits the take, capture or kill of any migratory bird, any part, nest or eggs of any such bird (16 U.S.C 703 (a)). NEPA analysis, pursuant to Executive Order 13186 which requires the Bureau to ensure that MBTA compliance, and the effects of Bureau actions and agency plans on migratory birds are evaluated, should reduce take of migratory birds and contribute to their conservation.

To minimize effects to nesting migratory birds in the vicinity of the proposed action the Operator is responsible for compliance with provisions of the Migratory Bird Treaty Act by implementing one of the following measures; a) **avoidance by timing**; ground disturbing activities will not occur from April 15 to July 15, b) **habitat manipulation**; render proposed project footprints unsuitable for nesting prior to the arrival of migratory birds (blading or pre-clearing of vegetation must occur prior to April 15 within the area scheduled for activities between April 15 and July 15 of that year to deter nesting, or c) **survey-buffer-monitor**; surveys will be conducted within the area of the proposed action and a 300 foot buffer from the proposed project footprint between April 15 to July 15 if activities are proposed within this timeframe. If nesting birds are found, activities would not be allowed within 0.1 miles of nests until after the birds have fledged. If active nests are not found, construction activities must occur within 7 days of the survey. If this does not occur, new surveys must be conducted. Survey reports will be submitted to the BLM-Miles City Field Office.

On a landscape basis, a well pad would contribute to additional habitat fragmentation, dispersion and reductions in populations of certain wildlife species. Research has documented impacts of oil and gas development on sage-grouse as addressed below. An application of the research, in combination with the fact that direct disturbance (i.e. 1% direct habitat loss in the entire Cedar Creek Anticline) is not a limiting factor for sage grouse, illustrates indirect impacts are a bigger contributor to sage-grouse declines. This impact has been quantified to be a 350 meter area of influence or development around all wells (Naugle et.al. 2006).

The well proposed is within the anticline area which is geographically located on the eastern edge of the range of sage grouse, and would be considered outside of the “core” area of sagebrush habitats. Recent research has shown that sagebrush dependent species on the fringe of sagebrush distribution may not utilize habitats in as predictable a manner as those same species in the core of sage-brush steppe ecosystems (Smith 2003, Lewis 2004). A March 1 through May 15 timing stipulation would provide limited protection for sage-grouse only during the initial year of development and does not apply to the production and maintenance of the action. With regards to migratory birds, sage-grouse and pronghorn refer to Appendix A, Wildlife Resource Summary for additional effects analysis.

DESCRIPTION OF IMPACTS FROM THE NO ACTION ALTERNATIVE:

The “no action” alternative would be that BLM would not authorize any construction, drilling or production activities needed for the proposed well and to enter and produce from Federal leases. Consequently, there would not be any additional impacts to the environment.

Minerals: Under this Alternative, the Federal leases would not be reached by the proposed well, which could result in no increase in oil production from portions of each lease and no opportunity of obtaining

additional knowledge of the oil and gas resource in the area. Under this Alternative, the proposed well would not be drilled and production would not be obtained which would result in the loss of its contribution of oil and gas to the market and royalties to the federal government and the state of Montana.

CUMULATIVE IMPACTS FROM THE PROPOSED ACTION:

Development in the area was analyzed in this environmental assessment using a one mile radius (see Map 2) applied around the proposed well to determine the potential cumulative impact upon the environment. A study area consisting of a 1 mile radius around the proposed well location was developed as an aid in conducting cumulative impact analysis. Application of the one mile radius indicates that there are eleven injection or Disposal wells, twenty-five Producing wells, one drilling well, and eight plugged and abandoned wells. In addition, it is estimated that there is 6.5 miles of county and well roads within the 1 mile analysis area. The proposed action is within 0.2 mile of the Anticline County Road. Vegetation types within the analysis area are described in Table 3.

Within a 1 mile analysis area of the proposed well, land cover type, as determined by a 2008 habitat land cover mapping/imagery project, prepared by the Bureau of Reclamation’s Remote Sensing and Geographic Information Team, is depicted in the table below (Table3).

* It should be noted the classifications and percentages depicted in the table and maps attached have not been completely field validated.

Table 3. Land cover within 1 mile analysis area

BOR Land Cover Delineation(Wright et al., October 2008)			
CLASSFINAL	DENS_CLASS	Acres (total)	Percent
SAGE	1% TO 10%	481	24%
SAGE	10% TO 20%	407	20%
GRASSLAND		316	16%
CONIFER		175	9%
SPARSE_VEG		157	8%
SAGE	20% TO 30%	110	5%
RIPARIAN		76	4%
ENERGY		75	4%
SAGE_RIPARIAN	10% TO 20%	67	3%
SAGE	>30%	35	1.6%
SAGE_RIPARIAN	1% TO 10%	33	1.3%
SAGE_RIPARIAN	20% TO 30%	29	0.7%
DEVELOPED		27	1%
SAGE_RIPARIAN	>30%	16	0.8%
OPEN WATER		3	0.01%

Developed areas are defined as having definitive houses and structures, roads, human induced impacts and delineated **energy** is composed of well pads, access roads and other energy specific land cover.

The proposed well is located in a highly developed oil and gas field surrounded by an upland area of both native and annual vegetation, and agriculture and grasslands at a much broader scale. The proposed well site and surrounding area serves as wildlife habitat for a variety of species. The addition of the proposed well and constructed access route will impact individual wildlife species but would not be expected to result in measurable impacts at the population level; however, the result of all past actions coupled with

this action would increase the extent of stressors on the native fauna within the area. This action combined with reasonable future foreseeable development within this area, would likely result in impacts to populations of various development intolerant wildlife species.

Cumulative effects from implementing the proposed action are anticipated for air quality for a period of less than five years. If flaring of casing head gas is required to produce these well, there could be long term minor impacts to air for the life of the well (about 20-30 years). In addition, both short term (<5 years) and long term (>5 years) effects are expected for soils, range, vegetation, hydrology, and wildlife.

Water resources have been impacted by the cumulative effects of activities that occur, including agriculture, mineral exploration and development, and pollution. These impacts decrease watershed health and water quality. These cumulative effects will cause accelerated erosion, increased overland flow, decreased infiltration, channel degradation, atmospheric deposition of pollutants, and water quality degradation associated with increased sedimentation, turbidity, nutrients, eutrophication, metals, and other pollutants in water bodies.

CUMULATIVE IMPACTS FROM THE NO ACTION ALTERNATIVE:

The proposed well would not contribute to cumulative impacts to the surrounding resources because no activities would be authorized by the BLM. The existing environment would continue to undergo impacts from existing activities and other activities that might be approved in the project areas.

MITIGATION TO REDUCE CUMULATIVE IMPACTS FROM THE PROPOSED ACTION

Soils: All topsoil and subsoil would be removed from the area needed for well pad construction and saved for reclamation.

Erosion control measures for the pad are as follows:

- Install wattles at toe slopes for all pad grading areas. Wattles shall be installed prior to construction and topsoil stripping.
- Immediately establish vegetation growth after recontouring and topsoil placement.
- Install straw wattles in road ditch every 150 feet minimum in areas where road exceeds 4% grade.
- Install straw wattles in all ditch areas that transition from cut to fill.

Vegetation: Vehicle traffic shall be confined to the approved access road and well site. Off-road vehicle travel is not authorized. Maintain existing roads in good condition. The operator shall be responsible for control of noxious weeds occurring as a result of lease operations.

VRM: All above ground facilities would be painted Covert Green in accordance with the surface owner's wishes, within six months of the well completion.

Lands/Realty: The Operator would need to locate the buried facilities authorized by BLM-issued ROWs to avoid damaging them during implementation of the project.

Waste Disposal and Containment of Fluids: Any materials classified, as nonexempt hazardous wastes, shall be disposed of at an Environmental Protection Agency (EPA) approved facility. A fence shall be maintained in a manner to prevent livestock and wildlife from entering the area of the well pad, and shall be constructed in accordance with the landowner's specifications.

Drilling Operations: The drilling location shall be cleaned of all debris, material and equipment after the well is completed. Equipment cannot be stored on the topsoil stockpile. Burning materials or oil is not

allowed as part of this project.

If H₂S is encountered in excess of 100 parts-per-million (ppm) in the gas stream, the operator shall bring the operations into compliance with applicable provisions of Onshore Order No. 6.

Shallow aquifers would be protected by running surface casing to about 1,700 ft. and cementing back to the surface. Potentially productive hydrocarbon zones and deeper aquifers would be isolated by running production casing to about 10,000 ft. MD and cementing back nearly to surface.

Appropriately sized BOP's would be used to control the well and prevent the accidental release of hydrocarbons or salt water into the environment.

Wildlife: The timing stipulations and conditions of approval for migratory bird species, and sage grouse provide some protection for those species during the initial year of development.

Surface Reclamation: Within 6 months after well completion the following interim reclamation on the well sites and access road would be done:

- For production, the unused portions of the pad would be recontoured
- All available stockpiled topsoil shall be used for interim reclamation to maintain viability and increase the productivity.
- Reseed to the surface owners requirements.

The reclamation effort shall be evaluated as a success if:

- The previously disturbed area is stabilized.
- All potential wind and water erosion is minimized.
- Proper drainage is reestablished.
- The area is free of debris.
- The vegetative cover is at least 60% of the species required.

CONSULTATION/COORDINATION: Denbury Resources, Inc., and Montana Fish Wildlife and Parks

LIST OF PREPARERS:

Kent Undlin	Wildlife Biologist
Doug Melton	Archeologist
Paul Helland	Petroleum Engineer
Jon David	Natural Resource Specialist
Pam Wall	Realty Specialist
Christina Handy	Rangeland Management Specialist

REFERENCES:

- Big Dry RMP/EIS (Final), Appendix Minerals;
- Oil & Gas RMP/EIS pgs 49-54, 75-77
- Denbury Resources, Inc., APD's
 - South Pine Unit 41X-26A
- BLM MCFO Cultural Resource Reports

Appendix A Wildlife Research Summary

Sage and Sharp-tailed Grouse: Sage-grouse in eastern Montana, North Dakota and South Dakota are a critical component of the sub-population of the Great Plains Population (Connelly et al. 2004). Genetics is another important component when considering existing and future energy development in the Cedar

Creek Anti-cline and adjacent areas. Genetic diversity is the cornerstone of evolution that enables a species to adapt and change with its environment. Loss of genetic diversity limits the ability of sage-grouse populations to overcome stressors such as habitat change, climate and disease. Published analysis by Oyler-McCance and other in 2005, show that the flow of genetic material in sage-grouse populations, is localized with similarities between neighboring populations but differences among distant populations. They suggest that “movements of the greater sage-grouse are typically among neighboring populations and not across the species range (Oyler-McCance, USGS, Molecular Ecology 2005).” Oyler obtained genetic samples from sage-grouse in Bowman and Slope Counties, North Dakota and Harding County, South Dakota which are adjacent to the proposed action area which contained Haplotype EJ, a unique genetic code that occurs only in the eastern range of sage-grouse. If the genetic link that the eastern Montana, specifically the eastern fringe of the range provides is severed, genetic diversity will deteriorate among other adjacent populations (i.e. Powder River Basin).

Numerous impacts of energy development to sage-grouse have been documented. In southwestern Wyoming, researchers have observed that as the distances between leks and the infrastructure of natural gas fields decrease and as the level of development surrounding leks increase, declines in lek attendance by males approached 100% (Holloran, 2005). Effects were apparent out to 6.2 km (3.875 miles) of the lek, and no males attended leks within 2 km (3.2 miles) from a drilling rig (Holloran, 2005, PAPA in western Wyo.). Holloran also found that “natural gas field development within 3-5 km (1.875-3.125 miles) of an active greater sage-grouse lek would lead to dramatic declines in breeding populations (2005:49).” The proposed well is within 2 miles of an occupied sage grouse leks, and will contribute to the increase in fragmentation of sage grouse habitats when combined with other existing development.

Research conducted in the PRB on CBNG documented that as the proportion of sagebrush within 6.4 km (4 miles) of a sage-grouse lek decreased, combined with the increase in development, lek persistence declined to a level unacceptable to maintain populations of sage grouse (Walker, 2007). Additionally, findings from on-going research conducted by the University of Montana and University of Wyoming indicates that sage grouse movements, lek attendance and population trends are negatively impacted by energy development (Naugle et al. 2006; Holloran and Anderson 2004, Holloran 2005).). It was determined 92% of lek complexes went inactive after full field CBNG development. Leks typically remained active when well spacing was > 500 acres (1.3 wells/section), whereas leks typically were lost when spacing exceeded 4.2 wells per section (Walker, 2007) as is the existing environment for the proposed well. Two of the existing leks within 1 mile of the proposed action have 5-6 years of survey data which indicate a downward trend in numbers (11-12 males in 2007;0-7 males in 2011/12) with an expected loss of leks in future years due to existing development levels. The timing stipulation (nso 3/1-6/15) would provide limited protection for sage and sharp-tailed grouse breeding and brood-rearing activities but only the initial year of development.

*With regards to migratory birds*energy development (oil, gas, and wind) and associated roads and facilities increase the fragmentation of migratory bird habitat. A number of studies have found that Sprague's pipits appear to avoid non-grassland features in the landscape, including roads, trails, oil wells, croplands, woody vegetation, and wetlands (Dale et al. 2009, pp. 194, 200; Koper et al. 2009, pp. 1287, 1293, 1294, 1296; Greer 2009, p. 65; Linnen 2008, pp. 1, 9-11, 15; Sutter et al. 2000, pp. 112-114). Sprague's pipits avoid oil wells, staying up to 350 meters (m) (1148 feet (ft.)) away (Linnen 2008, pp. 1, 9-11), magnifying the effect of the well feature itself. Oil and gas wells, especially at high densities, decrease the amount of habitat available for breeding territories. ([Federal Register: September 15, 2010 (Volume 75, Number 178)]

Pronghorns: With regards to pronghorn, research findings in Wyoming suggest habitat fragmentation of previously undisturbed habitat resulted in pronghorns reducing their use or abandoning habitat patches of less than 600 acres. This research also indicated radio-marked pronghorn consistently avoided otherwise suitable habitats within 100m of a producing well at all times. Aerial flight data and >56,000 locations of radio-marked pronghorn indicate complete avoidance of the Jonah Gas Field, an area of intense

development where >600 pronghorn spent the winter prior to drilling (Berger et al., 2006). Timing stipulations for wintering pronghorn will not be applied as current high level of development inhibits pronghorn use of the proposed action area.

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50 CFR Part 17 [Docket No. FWS-R6-ES-2009-0081] [MO 92210-0-0008]
Federal Register: September 15, 2010 (Volume 75, Number 178)]

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MILES CITY FIELD OFFICE
FINDING OF NO SIGNIFICANT IMPACT
Denbury Resources, Inc.
South Pine Unit 41X-26A

DOI-BLM-MT-C020-2013-133 EA

BACKGROUND

The Bureau of Land Management (BLM) completed an Environmental Assessment (EA), No. DOI-BLM-MT-C020-2013-133 of the above listed Denbury Resources, Inc. Applications for Drilling (APD). The APD includes the drilling, completing, and producing of one vertical oil well, along with the construction of a level well pad, an access road, and installation of the associated infrastructure, inclusive of flowlines, powerlines and reclamation of the disturbed areas.

The well will be drilled and completed in the Winnipeg formation. The average production life of the well is expected to be 20 to 30 years with final reclamation to be completed 2 to 3 years after plugging of the well.

ALTERNATIVES ANALYZED

The EA analyzed the Proposed Action and the respective BLM imposed mitigation measures and the No Action Alternative. The EA is attached to and incorporated by reference into this Finding of No Significant Impact (FONSI) determination.

FINDING OF NO SIGNIFICANT IMPACT

On the basis of the information contained in the EA (DOI-BLM-MT-C020-2013-133-EA), and all other information available to me, it is my determination that:

- (1) The implementation of the Proposed Action or alternatives would not have significant environmental impacts beyond those already addressed in the Big Dry Resource Management Plan.
- (2) The Proposed Action would be in conformance with the Record of Decision for the Big Dry Resource Management Plan; and
- (3) The Proposed Action would not constitute a major federal action having a significant effect on the human environment.

Therefore, an environmental impact statement or a supplement to the existing environmental impact statement would not be necessary and would not be prepared.

This finding is based on my consideration of the Council on Environmental Quality's (CEQ) criteria for significance (40 CFR 1508.27), both with regard to the context and to the intensity of the impacts described in the EA.

Context

The project is a site-specific action directly involving a total of approximately 4.53 acres of new disturbance in Fallon County, Montana. The project area includes 1 oil well. The proposed action would be to construct one level well pad, access road and associated infrastructure.

Intensity

The following discussion is organized around the Ten Significance Criteria described in 40 CFR 1508.27 and incorporated into resources and issues considered (includes supplemental authorities Appendix 1 H-1790-1) and supplemental Instruction Memorandum, Acts, regulations and Executive Orders. The following have been considered in evaluating intensity for this proposal:

1. Impacts that may be both beneficial and adverse. The proposed action would impact resources as described in the EA. Mitigation measures to minimize or eliminate adverse impacts were identified in the analysis and will be included as Conditions of Approval with the approved permits. The EA also disclosed beneficial impacts from the proposed project, such as the potential to bring additional oil and gas into the market place and increase revenues to federal and state and local governments, and to obtain scientific data of the local geology, and to increase the knowledge base of the mineral resources potential. None of the environmental effects discussed in detail in the EA exceed those described in the Big Dry Resource Area Management Plan.

2. The degree to which the proposed action affects public health and safety. No aspect of the proposed action would have an effect on public health and safety. The selected alternative minimizes adverse impacts to public health and safety by project design and additional mitigation measures. No residences are located within a 1 mile radius of the proposed well. Implementation of H2S Safety Measures will be required if H2S is encountered in excess of 100 ppm in the gas stream, the operator shall immediately ensure control of the well, suspend drilling ahead operations (unless detrimental to well control), and obtain materials and safety equipment to bring the operations into compliance with applicable provisions of Onshore Order No. 6.

3. Unique characteristics of the geographic area such as proximity of historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas. The location of the proposed well, access roads, flowline and powerline have been subject to a cultural resource inventory. The historic and cultural resources of the area have been reviewed by an archeologist and there would be no potential impacts to cultural resources in the design of the proposed action.

There are no effects on park lands, prime farm lands, wetlands, wild and scenic rivers, or ecologically critical areas.

4. The degree to which the effects on the quality of the human environment are likely to be highly controversial. No unique or appreciable scientific controversy has been identified regarding the effects of the Proposed Action. The environmental analysis did not show any highly controversial effects to the quality of the human environment.

5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks. The analysis did not show any unique or unknown risks to the human environment. The project is not unique or unusual because BLM, the State of Montana and the State of North Dakota have approved similar actions in the same geographic area. The environmental effects to the human environment are analyzed in the environmental assessment. There are no known predicted effects on the human environment that are considered to be highly uncertain or involve unique or unknown risks.

6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration. The actions considered in the preferred alternative were considered by BLM within the context of past, present, and reasonably

foreseeable future actions. The action would not establish a precedent, since the project area is in a developed oil and gas field. The proposed action is consistent with actions appropriate for the area as designated by the Big Dry RMP.

7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. The environmental analysis did not reveal any cumulative effects beyond those already analyzed in the EIS for the Big Dry RMP.

8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historic resources. The project will not affect districts, sites, highways, structures, or other objects listed on or eligible for listing in the National Register of Historic Places, nor would it cause loss or destruction of significant scientific, cultural, or historical resources. Identified cultural resources would be avoided by both well and associated infrastructure and would not be impacted by implementing the mitigation measures listed in the conditions of approval for the project.

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973. There are no threatened or endangered species or habitat in the area of the proposed action. There are no threatened or endangered plant species or habitat in the area.

10. Whether the action threatens a violation of Federal, State, Tribal or Local law or requirements imposed for the protection of the environment. The proposed action does not threaten to violate any Federal, State, Tribal, or local law or requirement imposed for the protection of the environment. Furthermore, the project is consistent with applicable land management plans, policies, and programs.



5/14/2013

Todd D. Yeager
Field Manager
Miles City Field Office

Date

**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MILES CITY FIELD OFFICE
DECISION RECORD**

**Denbury Resources, Inc.
South Pine Unit 41X-26A**

DOI-BLM-MT-C020-2013-133 EA

DECISION

Based upon the analysis of potential environmental impacts and mitigation measures described in EA DOI-BLM-MT-C020-2013-133, it is my decision to select the Proposed Action, including the mitigation measures, from the EA and approve the Applications for Permit to Drill (APD) for the well number: Pine Unit 41X-26A, submitted by Denbury Resources and modified by conditions of approval. The selected alternative is in conformance with the Big Dry Resource Management Plan, as amended.

ALTERNATIVES

In addition to the selected alternative, the EA considered the No Action alternative, which would carry out no management activities at this time.

RATIONALE FOR SELECTION

The BLM has been mandated by Congress and the President to manage public lands for multiple uses. One of these legitimate uses is energy production. The purpose of the action is to allow Denbury Resources, Inc. to drill and produce the Denbury Resources Pine Unit 41X-26A vertical oil well in Sections 26, T. 11N., R. 57 E., Fallon, Montana, to provide for the continued orderly, efficient and environmentally responsible development of Federal lease MTBIL002170, consistent with the goals, objectives, and decisions of the Big Dry Resource Management Plan, April 1996, as amended, which was prepared with extensive public involvement. Oil and gas lease stipulations and potential, but not all, conditions of approval designed to protect sensitive resources were identified at that time. This action is in conformance with the Big Dry Resource Management Plan, which was analyzed in an environmental impact statement.

Compliance and Monitoring: BLM would conduct compliance and monitoring inspections during the different phases of operations. Inspections would be conducted to determine whether or not operations are being conducted in compliance with the approved permit. Monitoring inspections would be conducted to determine the effectiveness of mitigation measures, results of reclamation work, and impacts to other resources. Based upon the results of inspections, BLM would impose requirements to modify operations to minimize or eliminate adverse impacts to other resources.

MITIGATION MEASURES/REMARKS:

CONDITIONS OF APPROVAL

1. **Site Specific:**

Migratory Bird Treaty Act. The Operator is responsible for compliance with provisions of the this Act by implementing one of the following measures; a)

avoidance by timing; ground disturbing activities will not occur from April 15 to July 15, b) **habitat manipulation;** render proposed project footprints unsuitable for nesting prior to the arrival of migratory birds (blading or pre-clearing of vegetation must occur prior to April 15 within the area scheduled for activities between April 15 and July 15 of that year to deter nesting, or c) **survey-buffer-monitor;** surveys will be conducted within the area of the proposed action and a 300 foot buffer from the proposed project footprint between April 15 to July 15 if activities are proposed within this timeframe. If nesting birds are found, activities would not be allowed within 0.1 miles of nests until after the birds have fledged. If active nests are not found, construction activities must occur within 7 days of the survey. If construction activities are not completed within 7 days, new surveys must be conducted. Survey reports will be submitted to the BLM-Miles City Field Office.

Construction and drilling activities will not occur from March 1 to June 15 to protect breeding, nesting, and brood-rearing activities for sage grouse.

Raptor protection measures for the proposed powerline would be applied as identified in Suggested Practices for Raptor Protection on Power Lines (APLIC Guidelines – 1996).

A. Access Road:

1. The proposed access roads shall be constructed according to the approved APD for each proposed location.
2. Access roads shall be constructed according to approved APD and surfaced with pit run gravel.
3. The operator shall be responsible for obtaining all necessary authorizations and permits related to conducting operations for the proposed well.
4. No construction or routine maintenance activities shall be performed during periods when the ground is frozen or is too wet to adequately support construction equipment. If such equipment creates ruts in excess of 4 inches deep upon travel ways, the soil shall be deemed too wet to adequately support construction equipment.
5. Vehicle traffic shall be confined to the approved access road and well sites. Off-road vehicle travel is not authorized. Maintain existing roads in good condition.
6. All access roads would be constructed according to Surface Operating Standards and Guidelines (The Gold Book) for road shape and drainage features at all times during construction.

B. Production Facilities:

1. The proposed location of production facilities shall be as described in the approved APDs.
2. The location shall be cleaned up of all debris, material and equipment after completion of construction activity.

3. All above ground facilities shall be painted Covert Green 18-0617TPX within six months of well completion and maintained as such to comply with visual quality objectives.
4. The operator shall be responsible for locating and protecting existing pipelines, power lines, telephone lines and other related infrastructure.
5. If a tank battery is constructed on location, each tank setting, treater, and separator, must be surrounded on all sides by an impermeable dike of sufficient capacity to adequately contain 110% of the contents of the largest vessel within it, plus one (1) day's production.
6. Heater treater, incinerator and combustor exhaust stacks shall be fitted with an "exhaust cone" to prevent mortality to bats and nesting birds.

C. Waste Disposal:

1. Any materials classified as nonexempt hazardous wastes shall be disposed of in an EPA approved facility.
2. Burning of materials or oil is not allowed.

D. Well Site Layout:

1. The well pad shall be constructed according to approved APD and surfaced with pit run gravel
2. Erosion and sediment control (e.g. straw wattles, silt fencing, or geotextile fabric) shall be placed on the fill side of the pad and at the bottom of stockpiled topsoil and pit material to prevent material from entering drainages.
3. The well pad shall be constructed in accordance with the "cut/fill" diagram submitted in the corresponding approved APD.
4. At the beginning of construction, 6" of topsoil, if available, shall be removed entirely from each pad and areas of surface disturbance during the construction of roads and facilities, and stockpiled separately from overburden stockpiles for reclamation.
5. The topsoil and subsoil shall be stockpiled as designated in the APDs to prevent impacts to drainages. Erosion control measures, such as geotextiles, water bars, or certified weed-seed free straw or hay wattles, shall be installed on 3:1 or steeper slopes, or on slopes with bare soil.
6. Equipment cannot be stored on stockpiles.

E. Drilling Operations:

1. The reserve pit shall be fenced on three sides during the drilling phase of the operation, and when the rig moves off location, the fourth side shall be enclosed. The fence shall be constructed to the following requirements: posts to be no more than 16' apart; fence wire: four wires of at least 12.5 gauge, double strand twisted; two stays between posts; wire stretched taut between brace panels, wire spacing from the ground up: 14", 22", 30", 42". Steel panels may be used to fence the pit. If steel panels are used, a steel post shall

be placed every 50' to reinforce panels. Fence shall be maintained to prevent livestock and wildlife from entering the area.

2. If reserve pit contains any fluids during active drilling, it shall be netted to prevent the entry of migratory birds and other wildlife.
3. Storage tanks must be on the pad and surrounded with a dike and trench sloped to the reserve pit.
4. If reserve pit contains any fluids, a minimum of 2 feet of freeboard shall be maintained in the pit.
5. The pit shall be lined with a minimum 12 millimeter impermeable synthetic liner and permeability $< 10^{-7}$ cm/sec; resistant to UV, weathering, chemicals, punctures, and tearing; and be placed on bedding material if bedrock is abrasive. The liner shall be installed in accordance with the manufactures requirements on material that will not tear or puncture the liner.
6. All pressure control equipment shall be in compliance with Onshore Order # 2 for a 5M system.
7. Surface casing shall have centralizers on the bottom three joints of the casing (a minimum of one centralizer per joint, starting with the shoe joint).
8. A cement bond log must be run on 7" production casing.
9. If H₂S is encountered in excess of 100 ppm in the gas stream, the operator shall immediately ensure control of the well, suspend drilling ahead operations (unless detrimental to well control), and obtain materials and safety equipment to bring the operations into compliance with applicable provisions of Onshore Order No. 6. The operator shall notify the authorized officer of the event and the mitigating steps that have or are being taken as soon as possible, but no later than the next business day.
10. Water bars shall be constructed on all 3:1 or steeper slopes and drainages shall be restored to original grade.
11. Any variation from the approved route must be approved in advance by this office.
12. The operator is responsible for the suppression of any fires started as a result of operations. The contractor must have the necessary equipment, including fire extinguishers or water, to provide initial suppression of fire.

F. Interim Reclamation:

1. Interim reclamation shall occur within 6 months after completion of the well.
2. All disturbed areas not needed for production must be reclaimed and shall be scarified to a depth of 18 inches and re-contoured to the original contours with proper drainage established. Certified weed seed free mulch must be crimped into the soil at a rate of 1 ton per acre before seeding. All disturbed areas shall be seeded after October 1 (before

ground freezes) or prior to May 15 (after ground thaws) at 6" drill row spacing at a depth of ¼" to ½" with the surface owner's preferred seed mixture on fee surface and BLM seed mix on federal surface (shown below). The seed mix shall be a certified weed-seed-free.

3. Interim reclamation shall be evaluated as a success if the area of disturbance is not needed for long-term operations are stabilized and re-contoured. Where all potential water erosion is effectively controlled and the vegetative stand is establish with at least 60% perennial native vegetation.

BLM Seed Mixtures

Combination must include at least four of the following species:

<u>Species</u>	<u>lbs/acre, pure live seed</u>
Western wheatgrass*	3.0
Pascopyrum smithii, variety Rosanna	
Green needlegrass	2.0
Stipa viridula, variety Lodom	
Slender wheatgrass	2.0
Elymus trachycaulus ssp. trachycaulus, variety Pryor	
Needleandthread	1.0
Stipa comata	
Bluebunch wheatgrass	2.0
Pseudoroegneria spicata ssp. spicata, variety Goldar	
Sideoats Grama	2.0
Bouteloua curtipendula	
Little bluestem	2.0
Schizachyrium scoparium	

***Must be included in the mix. Thickspike wheatgrass may be substituted for wheatgrass only when western wheatgrass is unavailable.**

G. Pit reclamation:

1. The fluids from the pit shall be removed from the pit or the pit shall be netted at the conclusion of drilling operations. All pit(s) shall be emptied of all fluids within 90 days after well completion.
2. The pit shall not be cut or trenched.
3. The pit material shall be covered with a minimum of 3' of soil.

H. Final Reclamation:

1. A Sundry Notice shall be submitted to this office for Final Reclamation approval. The plan shall address the well sites and access roads.
2. The reclamation shall be evaluated as a success if the previously disturbed area is stabilized and character of land is to its pre-disturbance condition. Where all potential water erosion is effectively controlled and the vegetative stand is established with at least at 60% perennial native vegetation.

3. The well sites and access roads shall be re-contoured. Re-contoured areas shall be scarified, mulched and seeded. After scarification to a depth of 18 inches, topsoil must be spread evenly over the re-contoured area. Weed-free straw mulch must be then applied evenly over the re-contoured area at a rate of 1 ton per acre. The mulch must be crimped into the soil. The re-contoured area must then be seeded with a weed-seed-free seed mixture prescribed by the surface owner on fee surface, or with the seed mixture prescribed in the BLM Seed Mixture Table for use on BLM Surface. All disturbed areas shall be seeded after October 1 (before ground freezes) or prior to May 15 (after ground thaws) at 6" drill row spacing at a depth of ¼" to ½" Seed must be drilled on the contour.

2. Verbal Notifications

The following notifications shall be made to the BLM, Miles City Field Office (MCFO) (406) 233-2800 during the hours of 7:45am – 4:30pm Monday-Friday, or after business hours to the appropriate individual's home phone shown on the list attached.

- A. Notify this office verbally at least 48 hours prior to beginning construction.
 - B. Notify this office verbally at least 12 hours prior to spudding the well (to be followed up in writing within 5 days).
 - C. Notify this office verbally at least 12 hours prior to running any casing or conducting any BOP tests (to be followed up in writing within 5 days).
 - D. Notify this office verbally at least 6 hours prior to commencing any DST test.
 - E. Notify this office verbally at least 24 hours prior to plugging the well to receive verbal plugging orders.
 - F. Notify this office verbally at least 24 hours prior to removal of fluids from the reserve pit.
3. A complete copy of the approved Application for Permit to Drill (APD), including conditions, stipulations, and the H2S contingency plan (if required) shall be available for reference at the well site during the construction and drilling phases. A copy of the approved Surface Use Plan of Operations and Conditions of Approval (COAs) shall be provided to the surface owner(s) prior to initiating construction.
 4. This drilling permit is valid for either two years from the approval date or until lease expiration, whichever occurs first.
 5. If any cultural values (sites, artifacts, human remains, etc.) are observed during operation of this lease/permit/right-of-way, they are to be left intact and the Miles City Field Office and the BIA notified. The authorized officer 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 would 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 immediately to stop work that might further disturb such materials, and contact the authorized officer (AO). Within five working days, the AO would inform the operator as to:
 - a. whether the materials appear eligible for the National Register of Historic Places;
 - b. the mitigation measures the operator would likely have to undertake before the site can be used (assuming in situ preservation is not necessary); and,

- c. a timeframe for the AO to complete an expedited review under 35 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

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

If any cultural or paleontological resources are unearthed/discovered during the construction of the proposed Denbury well location and associated actions, the operator shall cease work immediately and contact the appropriate official at the Bureau of Land Management Miles City Field Office as soon as possible, 406-233-2800.

6. The Operator shall be responsible for control of noxious weeds occurring as a result of lease operations. The surface owner shall be responsible for approval of the weed control program on fee surface. The weed control program on BLM administered surface will require the approval of the Authorized Officer.
7. The abandonment marker shall exhibit the same information required for the well sign. The abandonment marker (steel plate welded to surface casing 4' below ground level) shall be installed when the well is plugged.
8. Additional requirements may be imposed if changes in operational and/or environmental conditions dictate.
9. This office shall be notified in writing if the well pad has been constructed but no drilling operations have been initiated within 6 months of the construction.

You have the right to request a State Director Review of this decision and these Conditions of Approval pursuant to 43 CFR 3165.3(b). An SDR request, including all supporting documentation must be filed with the Montana State Office, State Director (MT-920) at 5001 Southgate Drive, Billings, Montana 59101-4669 within 20 business days of your receipt of this decision. If adversely affected by the State Director's decision, it can be further appealed to the Interior Board of Land Appeals (IBLA) pursuant to 43 CFR 3165.4, 43 CFR 4.411, and 43 CFR 4.413. Should you fail to timely request an SDR, or after receiving the State Director's decision, fail to timely file an appeal with IBLA, no further administrative review of this decision would be possible.



5/14/2013

Todd D. Yeager
Field Manager
Miles City Field Office

Date