DECISION RECORD
Maximus Operating LTD, Avery 26-14
Environmental Assessment (EA), WY-070-EA14-112
Bureau of Land Management, Buffalo Field Office, Wyoming

DECISION. The BLM approves Maximus Operating LTD's (Maximus) Avery 26-14 oil and gas well application for permit to drill (APD) described in Alternative B of the environmental assessment (EA), WY-070-EA14-112. This approval includes the wells' support facilities.

Compliance. This decision complies with or supports:

- Federal Land Policy and Management Act of 1976 (FLPMA) (43 USC 1701); DOI Order 3310.
- Mineral Leasing Act of 1920 (MLA) (30 U.S.C. 181); including the Onshore Oil and Gas Orders.
- National Environmental Policy Act of 1969 (NEPA) (42 USC 4321).
- National Historic Preservation Act of 1966 (NHPA) (16 USC 470).
- Buffalo and Powder River Basin Final Environmental Impact Statements (FEISs), 1985, 2003, 2011.
- Buffalo Resource Management Plan (RMP) 1985 and Amendments.

BLM summarizes the details of the approval of Alternative B below. The EA includes the project description, including specific changes made at the onsites, and site-specific mitigation measures.

Well Site. BLM approves 1 APD and support facilities:

Well Name & #	Twp	Rng	Sec	Qtr	Lease #
Avery 26-14	51	69	26	SESW	WYW182297

Limitations. There are no denials or deferrals. Also see the conditions of approval (COAs).

THE FINDING OF NO SIGNIFICANT IMPACT (FONSI). Analysis of Alternative B of the EA, WY-070-EA14-112, and the FONSI (both incorporated here by reference) found Maximus's proposal for the Avery 26-14 will have no significant impacts on the human environment, beyond those described in the PRB FEIS. There is no requirement for an EIS.

COMMENT OR NEW INFORMATION SUMMARY. BLM publically posted the APD for 30 days, received no comments, and then internally scoped it.

DECISION RATIONALE. BLM bases the decision authorizing the selected project on:

1. BLM and Maximus included mitigation measures to reduce environmental impacts while meeting the BLM's need. For a complete description of all site-specific COAs, see the COAs.
2. Maximus Operating LTD will conduct operations to minimize adverse effects to surface and subsurface resources, prevent unnecessary surface disturbance, and conform to currently available technology and practice.
3. The approved project conditioned by its design features and COAs, will not result in any undue or unnecessary environmental degradation. The impact of this development cumulatively contributes to the potential for local Greater Sage-Grouse (GSG) extirpation yet its effect is acceptable because it is outside priority habitats and is within the parameters of the PRB FEIS/ROD and current BLM and Wyoming GSG conservation strategies.
4. The selected alternative will help meet the nation's energy needs, and help stimulate local economies by maintaining workforce stability.
5. The operator committed to:
    - Comply with the approved APD, applicable laws, regulations, orders, and notices to lessees.

- Obtain necessary permits from agencies.
- Offer water well agreements to the owners of record for permitted wells.
- Incorporate several measures to alleviate resource impacts into their submitted surface use plan and drilling plan.

6. The operator certified it has a surface access agreement.
7. The project is clearly lacking in wilderness characteristics because it lacks federally owned surface.
8. This APD is pursuant to the Mineral Leasing Act for developing oil or gas and do not satisfy the categorical exclusion directive of the Energy Policy Act of 2005, Section 390 because the project will disturb greater than 5 acres. In addition, there has been no drilling of an oil or gas well within a developed field for which an approved land use plan or any environmental document was prepared pursuant to NEPA that analyzed drilling as a reasonably forseeable activity within 5 years prior to the date of spudding the well.

ADMINISTRATIVE REVIEW AND APPEAL. This decision is subject to administrative review according to 43 CFR 3165. Request for administrative review of this decision must include information required under 43 CFR 3165.3(b) (State Director Review), including all supporting documentation. Such a request must be filed in writing with the State Director, Bureau of Land Management, P.O. Box 1828, Cheyenne, Wyoming 82003, no later than 20 business days after this Decision Record is received or considered to have been received. Parties adversely affected by the State Director's decision may appeal that decision to the Interior Board of Land Appeals, as provided in 43 CFR 3165.4.

Field Manager: _____ Date: 1/27/14

FINDING OF NO SIGNIFICANT IMPACT
Maximus Operating LTD, Avery 26-14
Environmental Assessment (EA), WY-070-EA14-112
Bureau of Land Management, Buffalo Field Office, Wyoming

FINDING OF NO SIGNIFICANT IMPACT (FONSI). Based on the information in the EA, WY-070-EA14-112, which BLM incorporates here by reference; I find that: (1) the implementation of Alternative B will not have significant environmental impacts beyond those addressed in the Buffalo Final Environmental Impact Statement (FEIS) 1985, and the Powder River Basin (PRB) FEIS, 2003, 2011; (2) Alternative B conforms to the Buffalo Field Office (BFO) Resource Management Plan (RMP) (1985, 2001, 2003, 2011); and (3) Alternative B does not constitute a major federal action having a significant effect on the human environment. Thus an EIS is not required. I base this finding on consideration of the Council on Environmental Quality's (CEQ) criteria for significance (40 CFR 1508.27), with regard to the context and to the intensity of the impacts described in the EA, and Interior Department Order 3310.

CONTEXT. Mineral development is a common PRB land use, sourcing over 42% of the nation's coal. The PRB FEIS foreseeable development analyzed the development of 54,200 wells. The additional development analyzed in Alternative B is insignificant in the national, regional, and local context.

INTENSITY. The implementation of Alternative B will result in beneficial effects in the forms of energy and revenue production however; there will also be adverse effects to the environment. Design features and mitigation measures included in Alternative B will minimize adverse environmental effects. The preferred alternative does not pose a significant risk to public health and safety. The geographic area of project does not contain unique characteristics identified in the 1985 RMP, PRB FEIS, or other legislative or regulatory processes. BLM used relevant scientific literature and professional expertise in preparing the EA. The scientific community is reasonably consistent with their conclusions on environmental effects relative to oil and gas development. Research findings on the nature of the environmental effects are not highly controversial, highly uncertain, or involve unique or unknown risks. The PRB FEIS predicted and analyzed oil development of the nature proposed with this project and similar projects. The selected alternative does not establish a precedent for future actions with significant effects. The proposal may relate to the PRB Greater Sage-Grouse and its habitat decline having cumulative significant impacts; yet the small size of this project is within the parameters of the impacts in the PRB FEIS. There are no cultural or historical resources present that will be adversely affected by the selected alternative. The project area is clearly lacking in wilderness characteristics because it lacks federally owned surface. No species listed under the Endangered Species Act or their designated critical habitat will be adversely affected. The selected alternative will not have any anticipated effects that would threaten a violation of federal, state, or local law or requirements imposed for the protection of the environment.

ADMINISTRATIVE REVIEW AND APPEAL. This finding is subject to administrative review according to 43 CFR 3165. Request for administrative review of this finding must include information required under 43 CFR 3165.3(b) (State Director Review), including all supporting documentation. Such a request must be filed in writing with the State Director, Bureau of Land Management, P.O. Box 1828, Cheyenne, Wyoming 82003, no later than 20 business days after this FONSI is received or considered to have been received. Parties adversely affected by the State Director's finding may appeal that finding to the Interior Board of Land Appeals, as provided in 43 CFR 3165.4.

Field Manager: _____ Date: 1/27/14

ENVIRONMENTAL ASSESSMENT (EA), WY-070-EA14-112
Maximus Operating LTD, Avery 26-14, Application for Permit to Drill (APD)
Bureau of Land Management, Buffalo Field Office, Wyoming

1. INTRODUCTION

BLM provides an EA fo**r** Maximus Operating LTD's (Maximus) Avery 26-14 oil and gas well application for permit to drill (APD).This site-specific analysis tiers into and incorporates by reference the information and analysis in the Final Environmental Impact Statement and Proposed Plan Amendment for the Powder River Basin Oil and Gas Project (PRB FEIS), WY-070-02-065, 2003, 2011 and the PRB FEIS Record of Decision (ROD) per 40 CFR 1508.28 and 1502.21. BLM's jurisdiction for this proposal is fee surface overlying federal minerals "split estate". This APD is pursuant to the Mineral Leasing Act for the purpose of exploring or developing oil or gas and does not satisfy the categorical exclusion directive of the Energy Policy Act of 2005, Section 390 because the project will disturb greater than 5 acres. There has been no drilling of an oil or gas well in a developed field for which an approved land use plan or any environmental document was prepared pursuant to NEPA that analyzed drilling as a reasonably forseeable activity within 5 years prior to the date of spudding the well.

Congress made a 4-part process for federal fluid mineral decisions under the long-term needs of multiple-use. First is the land use / resource management plan (RMP); here the PRB FEIS and ROD amendment to the BFO RMP. Second are the decisions of whether and, if so, under what conditions, to lease lands for fluid mineral development. Courts held leasing decisions are an almost irrevocable resource commitment. Third, (this phase) is deciding on the proposed APD: the site-specific analysis, and mitigation. Fourth is the monitoring and reclamation of wells and their features. (Pendery 2010)

1.1. Background

Maximus submitted the Avery 26-14 notice of staking on September 30, 2013. BLM conducted onsite visits on November 11, 2013 to evaluate the proposal and modify as necessary to alleviate environmental impacts. The operator submitted the APD on December 12, 2013 and BLM followed up with a post-onsite deficiency on December 19, 2013. On January 10, 2014 Maximus submitted deficiencies for the Avery 26-14.

1.2. Need for the Proposed Project

BLM's need for this project is to determine whether, how, and under what conditions to support the Buffalo Resource Management Plan's (RMP) goals, objectives, and management actions with allowing the exercise of the operator's conditional lease rights to develop fluid minerals on federal leases. BLM incorporates by reference here, the APD information (40 CFR 1502.21). Conditional fluid mineral development supports the RMP and the Mineral Leasing Act of 1920, the Federal Land Policy Management Act (FLPMA), and other laws and regulations.

1.3. Decision to be Made

The BLM will decide whether or not to approve the proposed development, and if so, under what terms and conditions agreeing with the Bureau's multiple use mandate, environmental protection, and RMP.

1.4. Scoping and Issues

BLM posted the proposed APD for 30 days and will timely publish the EA, any finding, and decision on the BFO website. This project is similar in scope to other fluid mineral development the BFO analyzed. External scoping is unlikely to identify new issues, as verified with recent fluid mineral EAs that BLM externally scoped. External scoping of the horizontal drilling in Crazy Cat East EA, WY-070-EA13-028, 2013, in the PRB area received 3 comments, revealing no new issues. The BFO interdisciplinary team (ID

team) conducted internal scoping by reviewing the proposal, its location, and a resource (issue) list (see administrative record, AR), to identify potentially significantly affected resources, land uses, resource issues, regulations, and site-specific circumstances not addressed in the tiered analysis or other analyses incorporated by reference. This EA will not discuss resources and land uses that are not present, unlikely to receive significant or material affects, or that the PRB FEIS or other analyses adequately addressed. This EA addresses the project's potentially significant site-specific impacts that were unknown and unavailable for review at the time of the PRB FEIS analysis to help the decision maker come to a reasoned decision. The project area is clearly lacking wilderness characteristics because it lacks federally owned surface. BLM analyzed the following issues in the PRB FEIS and they do not present a substantial environmental question of material significance to this proposal:

Geological resources	Rights of way & corridors	Wilderness characteristics
Transportation & access	Paleontological resources	Livestock & grazing
Cave and karst resources	Visual resources	Recreation
Mineral resources: locatable, leasable-coal, salable	Forest products	Areas of critical environmental concern
Fire, fuels management, and rehabilitation	Lands & realty	Socio-economic resources
Tribal treaty rights		Environmental justice

2. PROPOSED PROJECT AND ALTERNATIVES

2.1. Alternative A – No Action

The no action alternative would deny this APD requiring the operator to resubmit an APD that complies with statutes and the reasonable measures in the PRB RMP Record of Decision (ROD) in order to lawfully exercise conditional lease rights. The PRB FEIS considered a no action alternative, pp. 2-54 to 2-62. The BLM keeps the no action alternative current using the aggregated effects analysis approach – tiering to or incorporating by reference the analyses and developments approved by the subsequent NEPA analyses for adjacent and intermingled developments to the proposal area.

2.2. Alternative B Proposed Action (Proposal)

Maximus proposed to drill 1 vertical oil and gas well into federal mineral estate from fee surface. The surface owner is Matt Avery. The proposed well is located 29 miles NE of Gillette, WY.

Table 2.1. Well Name/#/Lease/Location:

Well Name & #	Twn	Rng	Sec	Qtr	Lease #
Avery 26-14	51	69W	26	SESW	WYW182297

Drilling, Construction and Production Design Features Include:

- Maximus anticipates completing drilling and construction in 2 months. Drilling and construction is year-round in the region. Weather may cause delays but delays rarely last multiple weeks. Timing limitations in the form of conditions of approval (COAs) and/or agreements with surface owners may impose longer temporal restrictions.
- A road network consisting of an existing primitive road upgraded to an improved access road.
- A 1.8 acre cut and fill location with a drilling reserve pit.
- A proposed above ground power line network if the well is a producer.
- Potential production facilities including a pumping unit, a 4 tank battery, and heater treater located on the well pad.
- All engines will be equipped with an adequate muffler system, decibel level not to exceed 70 decibels at a distance of 200 feet from the exhaust of any muffler.

Drilling and Completion Water Sources and Amounts
For a detailed description of design features and construction practices associated with the proposed project, refer to the surface use plan (SUP) and drilling plan included with the APD. Also see the APD for maps showing the proposed well location and associated facilities described above.

Maximus estimates that during the drilling phase of each individual well it may use up to 8,000 barrels of water for drilling and 50 for completion. Water for drilling purposes will be obtained from a source well located in SENW Section 18, T50N R69W, permit # 153956. All produced water and flow-back completion water will be disposed at the Kissack Water and Oil Service state approved facility located in the NWNE of Section 25 T51N R70W. The operator estimates about a 1-3 week period to drill the well. The average daily truck traffic (ADT) for drilling to and from the location is approximately 62 large trucks (water haulers, cement trucks, etc.) for the project, with 4-6 personal pickup trucks per day. During the production phase the ADT will decrease to 1 pickup truck per day and 1 large transport truck per month. BLM incorporated and analyzed the implementation of committed mitigation measures in the SUP and drilling plan, in addition to the COAs in the PRB FEIS ROD, as well as changes made at the onsite.

Additionally, the operator, in their APD, committed to:
- Comply with the approved APD, applicable laws, regulations, orders, and notices to lessees.
- Obtain necessary permits from agencies.
- Offer water well agreements to the owners of record for permitted wells.
- Incorporate measures to alleviate resource impacts in their submitted surface use and drilling plans.
- Certify it has a surface access agreement with the landowners.

Table 2.2. Disturbance Summary for the Avery 26-14 well:

Facility	Number or Miles	Factor	Disturbance
Engineered Pad	1 (350 ft x 220 ft)	43,560 sq ft	1.8
Improved Roads	1.0	35 ft	4.1
Proposed Overhead Power	.5	20ft	1.3
Total Surface Disturbance			**7.2 acres**

2.3. Conformance to the Land Use Plan and Other Environmental Assessments
This proposal does not diverge from the goals and objectives in the Buffalo Resource Management Plan (RMP), 1985, 2001, 2003, 2011, and generally conforms to the terms and conditions of that land use plan, its amendments, supporting FEISs, 1985, 2003 (2011), and laws including the Clean Air Act, 42 USC 7401-7671q (2006), the Clean Water Act, 33 USC 1251 et seq. (1972), etc.

3. AFFECTED ENVIRONMENT

This section briefly describes the physical and regulatory environment that may be significantly affected by the alternatives in Section 2, or where changes in circumstances or regulations occurred since adoption of analyses to which the EA tiers or incorporates by reference. The PRB FEIS considered a no action alternative (pp. 2-54 to 2-62) in evaluating a development of up to 54,200 fluid mineral wells. Nearly all of the PRB's coalbed natural gas (CBNG) wells and over 60% of the deep oil and gas wells are hydraulically fractured; BLM and Goolsby 2012. The BLM uses the aggregated effects analysis approach incorporating by reference the circumstances and developments approved via the subsequent NEPA analyses for adjacent and intermingled developments coincident to proposal area to retain currency in the no action alternative. 615 F. 3d 1122 (9th Cir. 2010). The total number of conventional wells in the Buffalo planning area is 1313, which includes 783 horizontal wells (federal, fee, and state) (as of April 2013). This represents 41% of the projected 3,200 in the 2003 PRB ROD. (See Table 2.2 for an

approximation of the disturbance in the current situation.) This agrees with the PRB FEIS which analyzed the reasonably foreseeable development rolling across the PRB of 51,000 CBNG and 3,200 natural gas and oil wells. In addition, and other operators are likely to continue seeking permits to develop unconnected leases in or in the affects analysis areas near the project area; decisions to approve or deny future proposals will occur following APD submittal. Development occurring on non-federal surface and non-federal mineral estate would continue

3.1. Air Quality

Wyoming's Department of Environmental Quality (WDEQ) regulates Wyoming's air quality with oversight from the U.S. Environmental Protection Agency (EPA). BLM incorporates by reference the August 2012 Lease Sale EA, WY-070-EA12-44, pp. 17-24 (air quality, greenhouse gas emissions, and visibility); and the Update of Task 3A Report for the Powder River Basin Coal Review Cumulative Air Quality Effects for 2020, BLM (AECOM), 2009, (Cumulative Air Quality Effects, 2009) as it captures the cumulative air quality effects of present and projected PRB fluid and solid mineral development. The EPA established ozone standards in 2011 and oil and gas new source performance standards in 2012, 77 FR 49490. Existing air quality in the PRB is "unclassified/attainment" for all ambient air quality standards. It is also in an area that is in prevention of significant deterioration zone. PRB air quality is a rising concern due to ozone in the oil and gas producing Upper Green River Basin that became 1 of the nation's 40 "nonattainment" zones for ozone in 2012; in addition to PRB-area air quality alerts issued in 2011 - 2013 for particulate matter (PM), attributed to coal dust. Four sites monitor the air quality in the PRB: Cloud Peak in the Big Horn Mountains, Thunder Basin northeast of Gillette, Campbell County south of Gillette, and Gillette. In addition, the Wyoming Air Resource Monitoring System (WARMS) measures meteorological parameters from 6 sites, and particulate concentrations from 5 of those sites, monitors speciated aerosol (3 locations), and evapotranspiration rates (3 locations). These sites are at Sheridan, Taylor Reservoir, South Coal Reservoir, Buffalo, Juniper, and Newcastle. The northeast Wyoming visibility study is ongoing by the WDEQ. Sites adjacent to the Wyoming PRB-area are at Birney on the Tongue River 24 miles north of the Wyoming-Montana border, Broadus on the Powder River in Montana, and Devils Tower.

Existing air pollutant emission sources in the region include:

- Exhaust emissions (primarily carbon monoxide (CO) and nitrogen oxides (NOx)) from existing natural gas fired compressor engines used in production of natural gas and CBNG; and, gasoline and diesel vehicle tailpipe emissions of combustion pollutants;
- PM (dust) generated by vehicle travel on unpaved roads, windblown dust from neighboring areas, road sanding during the winter months, coal mines, and trains;
- Transport of air pollutants from emission sources located outside the region;
- NOx, PM, and other emissions from diesel trains; and
- Sulfur dioxide (SO2) and NOx from power plants.

3.2. Soils, Ecological Sites, and Vegetation

Within the PRB's Northern Rolling High Plains-Southern Part major land resource area (USDA Handbook 296, 2006) are numerous ecological sites - a distinctive kind of land with specific characteristics differing from other kinds of land in its ability to produce a distinctive kind and amount of vegetation. Different soil compositions support an ecological site. BLM obtained detailed soils identification and data for the project area from the North Campbell County Survey Area, Wyoming Soil Survey Geographic (SSURGO) Database (WY705). The Natural Resource Conservation Service (NRCS) performed the soil survey according to National Cooperative Soil Survey standards. The BLM uses county soil survey information to predict soil behavior, limitations, or suitability for a given proposal. A tabulated summary of the soil map units impacted by each proposed well location and infrastructure, ecological site and predicted acres disturbed.

Table3.1. Soils, Ecological Sites, and Acres

Well Name & No. Pad	Map Unit Symbol	Map Unit Name	Ecological Site
Avery 26-14 Pad	323	Ucross-Fairburn loams, 3 to 15 percent slopes	Loamy (Ly) 15-17 NP
Road	323	Ucross-Fairburn loams, 3 to 15 percent slopes	Loamy (Ly) 15-17 NP
Road	300	Oshoto-Klinedraw silt loams, 0 to 6 percent slopes	Loamy (Ly) 15-17 NP
Road	106	Arwite-Elwop fine sandy loams, 6 to 15 percent slopes	Sandy (Sy) 15-17 NP

See the NRCS Soil Survey WY 705 North Campbell County (SSURGO) data for more detailed soil information. Ecological Site interpretations include additional site-specific soil information.

BLM tabulated a summary of each well or feature with soil attributes leading to increased concern for long term soil conservation. SSURGO data review identified site specific sensitive soils that did not receive site specific analysis in the PRB FEIS

3.3. Ecological Sites and Vegetation

BLM staff identified the dominant vegetation community types in the project area as a *mixed grass prairie* and *sagebrush shrubland*. Species typical of the mixed-grass prairie community type are western wheatgrass (Pascopyrum smithii), blue grama (Bouteloua gracilis), needle-and-thread (Hesperostipa comata), and Wyoming big sagebrush (Artemisia tridentate var. wyomingensis), while species typical of the sagebrush shrubland include Artemisia spp. (Chrysothamnus spp.), western wheatgrass, prairie junegrass (Koeleria macrantha), and plains pricklypear (Opuntia spp.).

Bluebunch and Wester wheatgrasses (Pseudoroegneria spicata), and Blue gramma grasses were identified in the project area. Wyoming Big Sagebrush shrub species were observed during the site visit. Non-native graminoids present included cheatgrass (Bromus tectorum), which is in the project area.

Ecological sites and vegetative properties were identified for the project area and depicted above in the Table 3.1. Ecological site descriptions provide site and vegetation information needed for resource identification, management, and reclamation recommendations. To determine the appropriate ecological sites for the area contained within this proposed project area, BLM specialists analyzed data from on-site field reconnaissance and from NRCS published soil survey information.

3.4. Water Resources

3.4.1. Groundwater

The historical use for groundwater in this area was for stock or domestic water. A search of the WSEO Ground Water Rights Database showed 4 water wells that are designated as stock water wells ranging in depth from 163 to 462 feet and an additional well that has a designation of industrial (2,131 feet) within 1 mile of the Avery 26-14 location. For additional information on groundwater, refer to the PRB FEIS, pp. 3-1 to 3-36. WDEQ assumed primacy from U.S. Environmental Protection Agency for maintaining Wyoming's water quality. The Wyoming State Engineer's Office (WSEO) has authority for regulating water rights issues and permitting impoundments for the containment of the State's surface waters. The Wyoming Oil and Gas Conservation Commission (WYOGCC) has authority for permitting and bonding off channel pits located over state and fee minerals.

3.4.2. Surface Water

The Avery 26-14 project is in upland topography dissected by ephemeral drainages which are tributaries to the Belle Fourche River. Most of the project and foreseeable activity area drainages are ephemeral (flowing only in response to a precipitation event or snow melt) to intermittent (flowing only at certain times of the year when it receives water from alluvial groundwater, springs, or other surface source – PRB FEIS, Glossary). The channels are primarily well vegetated grassy swales, without defined bed and bank. See the PRB FEIS for a surface water quality discussion, pp. 3-48 to 3-49. The onsite inspection and a search using geographic information systems (GIS) and did not find any natural springs within a 1 mile radius of this proposal. For information on surface water refer to the PRB FEIS, pp. 3-36 to 3-56.

3.5. Wetlands/Riparian

There are no wetlands or riparian areas located within the project.

3.6. Invasive and Noxious Species

Maximus discovered the following state-listed noxious weeds and invasive plant infestations from an inventory of maps and/or databases or during field investigation as follows: Canada thistle, Scotch thistle, buffalo bur, whitetop, leafy spurge and field bindweed. Cheatgrass or downy brome (*Bromus tectorum*) and to a lesser extent, Japanese brome (*B. japonicus*) are known to exist in forseeable activity and project areas. These species are found in high densities and numerous locations in NE Wyoming.

3.7. Fish and Wildlife

The PRB FEIS identified wildlife species occurring in the PRB, pp. 3-113 to 3-206. Wildlife Resources, LLC conducted a habitat evaluation October 31, 2013 (Wildlife Resources, 2013). A BLM biologist and a wildlife biologist for Wildlife Resources, LLC, performed a habitat assessment in the project area during the interdisciplinary team on-sites on November 12, 2013. The BLM biologist verified consultant information, evaluated impacts to wildlife resources, and recommended project modifications where wildlife issues arose. These surveys took place outside of the recommended survey periods for most species, decreasing the likelihood of detecting actual use. BLM also consulted databases compiled and managed by BLM BFO wildlife staff, the PRB FEIS, WY Game and Fish Department (WGFD) datasets, and the Wyoming Natural Diversity Database (WYNDD) to evaluate the affected environment for wildlife species that may occur in the project area. This section describes the affected environment for wildlife species known or likely to occur in the project area that are likely to be impacted by the action.

3.8. Threatened, Endangered, Candidate, Special Status (Sensitive) Species

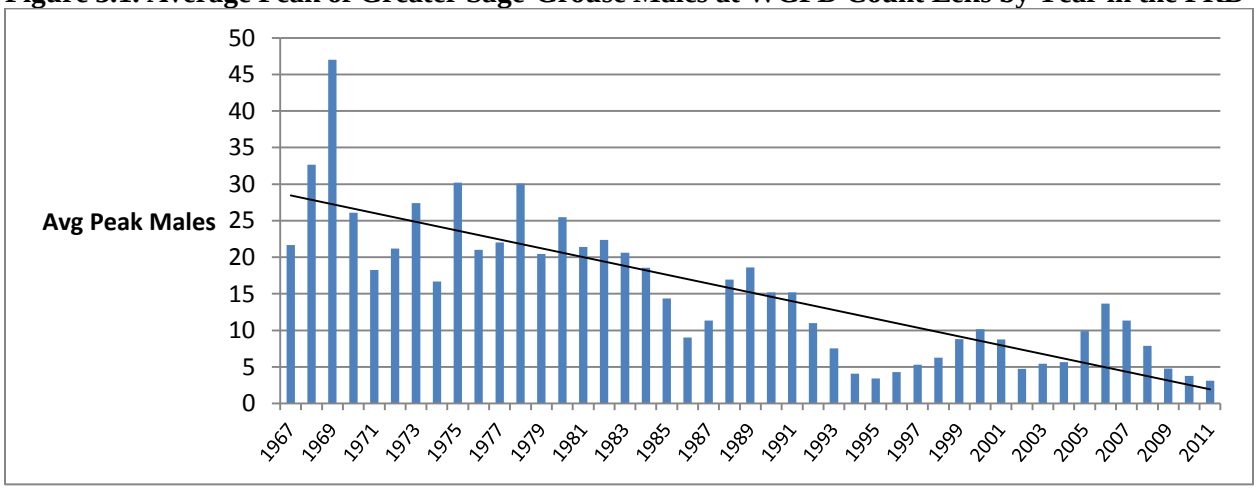
The Buffalo BLM receives a species list periodically from the FWS concerning threatened, endangered, proposed, and candidate species. Species included on that list that would be impacted by the proposed project will be discussed below.

3.8.1. Greater Sage-Grouse (GSG)

The PRB FEIS has a detailed discussion on GSG ecology and habitat, pp. 3-194 to 3-199. Subsequently the US Fish and Wildlife Service (FWS) determined the Greater Sage-Grouse (GSG) warrants federal listing as threatened across its range, but precluded listing due to other higher priority listing actions, 75 Fed. Reg. 13910 to 14014, Mar. 23, 2010; 75 Fed. Reg. 69222 to 69294, Nov. 10, 2010. GSG are a WY BLM special status (sensitive) species (SSS) and a WGFD species of greatest conservation need because of population decline and ongoing habitat loss. The 2012 population viability analysis for the Northeast Wyoming GSG found there remains a viable population of GSG in the PRB (Taylor et al. 2012). However, threats from energy development and West Nile virus (WNv) are impacting future viability (Taylor et al. 2012). The BLM IM WY-2012-019 establishes interim management policies for proposed activities on BLM-administered lands, including federal mineral estate, until RMP updates are complete.

The GSG population in northeast Wyoming is exhibiting a steady long term downward trend, as measured by lek attendance (WGFD 2011b). Figure 3.1 illustrates a 10-year cycle of periodic highs and lows. Each subsequent population peak is lower than the previous peak. Research suggests that the declines since 2001 are a result, in part, of energy development (FWS 2010, Taylor et. al. 2012).

Figure 3.1. Average Peak of Greater Sage-Grouse Males at WGFD Count Leks by Year in the PRB



Suitable GSG habitat (as defined in Soehn, et al., 2001), is present in the proposed disturbance area. The area immediately adjacent to the project is comprised of moderately dense to dense sagebrush stands with a healthy, residual native understory however no GSG sign was observed during the on-site visit. The nearest occupied lek is the Bertha Road Lek, 4.25 miles southeast of the project area.

The BLM habitat model indicates high-quality nesting habitat to the northwest of the proposed project. As mentioned, the model was verified in the area immediately surrounding the proposed disturbance however, much of the area classified by the model actually consists of breaks and ridges supporting ponderosa pines. The project is sited 325 feet west of an active ranch road and tilled field. The primary residence and the ranch headquarters are located ½ mile southeast and in line of sight of the proposed well location and access. A producing oil-well and tank battery are 0.7 miles south and in line-of-sight of the location.

3.8.2. Special Status (Sensitive) Species (SSS)

The PRB FEIS discussed the affected environment for SSS, p. 3-174 to 201. The authority for the SSS comes from the ESA, as amended; Title II of the Sikes Act, as amended; the FLPMA; Department Manual 235.1.1A and BLM Manual 6840. See the administrative record (AR) for those SSS that may occur in the project area.

3.8.2.1. Bald Eagle

The affected environment for bald eagles is described in the PRB FEIS on p. 3-175. When the PRB FEIS was written; the bald eagle was listed as a threatened species under the Endangered Species Act, but was removed on 8 August 2007. The bald eagle remains under the protection of the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. In order to avoid violation of these laws and uphold the BLM's commitment to avoid any future listing of this species, the BLM shall continue to comply with all conservation measures and terms and conditions identified in the Powder River Basin Oil and Gas Project Biological Opinion (PRB Oil & Gas Project BO), #WY07F0075) (USFWS 2007). In addition to being listed as a Wyoming BLM sensitive species, bald eagles are a WGFD SGCN with a NSS2 rating, due to populations being restricted in numbers and distribution, ongoing loss of habitat, and sensitivity to human

disturbance. The Wyoming Bird Conservation Plan rates them as a Level I species, indicating they are clearly in need of conservation action. They are also listed by FWS as a BCC for Region17. Little Pine Ridge to the north of the proposed well, contains ponderosa pines (*Pinus ponderosa*), suitable for roosting and nesting. Cottonwood (*Populus* spp.) stands north of the proposed well in Wheat Draw and lone cottonwoods within other ephemeral draws are also suitable bald eagle roosting and nesting habitat. The BLM wildlife database shows no record of bald eagle nests or roosting sites within a 1.0-mile radius of the proposed project area.

3.8.2.2. Big Game

The big game species occurring in the project area are mule deer and pronghorn. The PRB FEIS discussed the affected environment for pronghorn, mule deer, white-tailed deer, and elk on pp. 3-117 to 3-122, pp. 3-127 to 3-132, 3-122 to 3-127, and 3-132 to 3-140, respectively. Table 3.2, below, indicates the delineated seasonal ranges for each species that occur in the project area, the herd units affected by the project, the WGFD population objective, and the WGFD current population estimate for each species (WGFD 2011a).

Table 3.2. Big Game Species, Seasonal Ranges, Herd Units, Population Objectives, and Population Estimates for Big Game Species Likely to Occur in the Avery 26-14 Project Area

Species	Seasonal Range in Project Area	Herd Unit	WGFD Population Objective	% Above (+) or Below (-) Objective	WGFD Report Year
Mule Deer	Yearlong, winter yearlong	319 – Powder River	52,000	-32.1%	2012
Pronghorn	Yearlong, winter yearlong	339 – N. Black Hills	4,841	+ 43%	2012

3.8.2.3. Raptors

The PRB FEIS discussed the affected environment for raptors, pp. 3-141 to 3-148. Most raptor species nest in a variety of habitats including (but not limited to): native and non-native grasslands, agricultural lands, live and dead trees, cliff faces, rock outcrops, and tree cavities.

Suitable nesting habitat is present in the project area, with one raptor nest identified by Wildlife Resources, LLC. 0.36 miles north of the Avery 26-14 location, in the NE/SW of Section 26, T51N, R69W. The BLM and the Wildlife Resources biologists found no feathers, whitewash, or cast indicating recent use of the nest location. While the terrain keeps the location and activities on the ground out of line-of-sight, tall structures, such as a drilling rig, may be visible from the nest.

3.8.2.4. Migratory Birds

Migratory birds are birds that migrate for breeding and foraging at some point in the year. The BLM-FWS Memorandum of Understanding (MOU) (2010) promotes the conservation of migratory birds, complying with Executive Order 13186 (Federal Register V. 66, No. 11). BLM must include migratory birds in every NEPA analysis of actions that have potential to affect migratory bird species of concern to fulfill obligations under the Migratory Bird Treaty Act (MBTA). The MBTA (and Bald and Golden Eagle Protection Act (BGEPA)) are strict liability statutes so require no intent to harm migratory birds through prosecuting a taking. Recent prosecutions or settlements in Wyoming and the West coast companies millions of dollars in fines and restitution (which was usually retrofitting power lines to discourage perching to minimize electrocution or shielding ponds holding toxic substances). BLM encourages voluntary design features and conservation measures supporting migratory bird conservation, in addition to appropriate restrictions.

A wide variety of migratory birds occur in the forseeable activity and project areas at some time in the year. Many species that are of high management concern use shrub-steppe and shortgrass prairie areas for

their primary breeding habitats (Saab and Rich 1997). Nationally, grassland and shrubland birds declined more consistently than any other ecological association of birds in the last 30 years (WGFD 2009). The WGFD Wyoming Bird Conservation Plan (Nicholoff 2003) identified 3 groups of high-priority bird species in Wyoming: Level I – those that clearly need conservation action, Level II – species where the focus is on monitoring, rather than active conservation, and Level III – species that are not a high priority but are of local interest. (Shrub-steppe vegetation dominates the areas. Species that may occur in these vegetation types in northeast Wyoming, according to the Wyoming Bird Conservation Plan, appear Table 3.1., grouped by level as identified in the plan.

The Avery 26-14 project area includes a number of intersecting habitat types that support migratory birds, including a healthy sagebrush community with a diverse native understory. This sagebrush/grassland habitat is bounded on the east by hay fields and to the north by ponderosa covered ridges and breaks. Some migratory species are also BLM special status (sensitive) species. Those suspected occurring in the area that would be directly affected by the Avery 26-14 well and access are: *Baird's sparrow, Brewer's sparrow, loggerhead shrike, long-billed curlew, sage sparrow, and sage thrasher*. The PRB FEIS discussed the affected environment for migratory birds, pp. 3-150 to 3-153.

3.9. Cultural Resources

In accordance with section 106 of the National Historic Preservation Act, BLM must consider impacts to historic properties (sites that are eligible for or listed on the National Register of Historic Places (NRHP)). For an overview of cultural resources generally found in the area refer to the *Draft Cultural Class I Regional Overview, Buffalo Field Office* (BLM, 2010). A class III (intensive) cultural resource inventory (BFO project no. 70140018) was performed to locate specific historic properties which may be impacted by the proposal. Site 48CA1473 (Texas Trail) is eligible for the National Register. No evidence of the Texas Trail exists in the project area. The following resources are in or near the proposed proposal.

Cultural Resources Near the Proposal & National Register of Historic Places (NRHP) Eligibility

Site Number	Site Type	NRHP Eligibility
48CA1473	Texas Trail	Eligible

4. ENVIRONMENTAL EFFECTS

No Action Alternative. BLM analyzed the no action alternative as Alternative 3 in the PRB FEIS and it subsequently received augmentation of the effects analysis in this EA through the analysis of mineral projects, their approval, and construction. Under the no action alternative, on-going well field operations would continue as would the development of 1 approved single well pad (approximately 7.2 acres of new disturbance) consisting of 1 vertical well with the approved APD. The production and the drilling and completion of these new wells would result in noise and human presence that could affect resources in the project area; these effects could include the disruption of wildlife, the dispersal of noxious and invasive weed species, and dust effects from traffic on unpaved roads. Present fluid mineral development in the PRB is under half of that envisioned and analyzed in the PRB FEIS. There is only a remote potential for significant effects above those identified in the PRB FEIS to resource issues as a result of implementing the no action alternative. See the analyses in Table 3.1, above, which aggregate and incorporate the effects and cumulative effects of the no action alternative.

Alternative B, Proposed Action (Proposal)

4.1. Air Quality

In the project area, air quality impacts would occur during construction (due to surface disturbance by earth-moving equipment, vehicle traffic fugitive dust, well testing, as well as drilling rig and vehicle engine exhaust) and production (including well production equipment, booster and pipeline compression engine exhaust). The amount of air pollutant emissions during construction would be controlled by

watering disturbed soils, and by air pollutant emission limitations imposed by applicable air quality regulatory agencies. BLM incorporates by reference the analysis found in the August 2012 Lease Sale EA, WY-070-EA12-44, pp. 45-51 (air quality, greenhouse gas emissions, and visibility). Air quality impacts modeled in the PRB FEIS and Cumulative Air Quality Effects, 2009 concluded that PRB projected fluid and solid development would not violate state, tribal, or federal air quality standards and this project is well within the projected development parameters.

4.2. Soils, Ecological Sites, and Vegetation

4.2.1. Soils

4.2.1.1. Direct and Indirect Effects

The PRB FEIS analyzed direct and indirect impacts to soils associated with fluid mineral development. For these affects refer to p. 4-134-149 of the PRB EIS. Limited Reclamation Areas, (LRP) are described in Wyoming Reclamation Policy, and p. 4-143 and 4-149 of the PRB-EIS.

The greatest impacts to the soil resources associated with this project would occur with the construction of well pads, road and ancillary facilities. Construction of these facilities requires grading and leveling, with the greatest level of effort required on more steeply sloping areas. These impacts would begin immediately as the soils would be subjected to grading and construction activities and impacts would continue for the term of operations. The duration and intensity of these impacts would vary according to the type of construction activity to be completed and the inherent characteristics of the soils to be impacted.

The proposed APD requires a 1.8 acre well pad to safely drill the proposed well. The projected cuts/fills each exceed 15 feet vertical height. Total cut/fill area is approximately 0.25 (acres) or 14% of the proposed disturbance area. During the construction and drilling phase of the project, the operator plans to maintain cut and fill slopes at 1½:1(67%), 2:1(50%) slopes, or approximately 0.25 acres or 14% of the project area will have constructed slopes greater than 25%. These constructed slopes will be bare ground void of vegetation thus identified as highly erosive due to water erosion, and the total 1.8 acres site is classified as highly erosive for wind erosion. The predicted construction cut depth exceeds the identified soil depth, thus impacting soil horizons described as "little affected by pedogenic processes", or unaltered parent material. The physical and chemical properties of this material may be variable and limiting in its potential to support plant growth, variable in erosion potential and suitability for construction material.

The 1.8 acre disturbance area would be defined as an LRP area http: //www.blm.gov/style/medialib/blm/wy/programs/reclamation.Par.60413.File.dat/wy2012-032w-atch.pdf., until an adequate depth of suitable topsoil and subsoil material is applied to a depth required to support desired vegetation. The well pad will be reduced to 1.65 acres of disturbance at interim reclamation for the production phase.

Changes in soil productivity would depend on the success of the stabilization and interim reclamation efforts. The replaced soil could support stable and productive vegetation adequate in quantity and kind to support the post disturbance land uses- wildlife habitat and rangeland. After reclamation (interim and final), the soils would be unlike the predisturbance soils in structure, horizon, bulk density, and chemical composition. The new soils would be more uniform in type, thickness and texture than the predisturbance soils. The soil-forming processes would be disturbed, resulting in the alteration of soil characteristics and, consequently, the taxonomic classification of the soils. Productivity capabilities, biologic activity, and nutrient content also would be affected.

4.2.1.2. Cumulative Effects

The PRB FEIS defined the duration of disturbance, pp. 4-1 and 4-15. The impacts to the soil resource described in the direct and indirect effects section could be minimized by reducing initial surface

disturbance, successful site stabilization and maximum interim reclamation, as committed to by the operator in their POD Surface Use Plan and as required by the BLM in COAs.

4.2.1.3. Mitigation Measures

The operator will reduce impacts to vegetation and soils from surface disturbance by following its plans (MSUP, and (design features, engineered designs), SWPPP requirements, site specific reclamation plan and the BLM Wyoming Reclamation Policy. These practices, as well as other approved mitigation measures will results in less surface disturbance and environmental impacts.

4.2.1.4. Residual Effects

The PRB FEIS identified residual effects (p. 4-408). Residual effects across the project area would include a long-term loss of soil productivity associated with well pads and roads. Alteration of soils would result in the formation of new soil with different properties. Post disturbance productivity should be simular to predisturbance. In spite of the above residual effects, the BLM considers that Alternative B is within the parameters for surface disturbance and surface disturbance reclamation in PRB FEIS ROD.

4.2.2. Vegetation and Ecological Sites

4.2.2.1. Direct and Indirect Effects

The PRB FEIS discusses most direct and indirect effects to ecological sites and vegetation (p. 4-153 to 4-164). The proposed action would impact the existing plant communities, species richness, diversity, and structure that occur on the site and the transition between the communities. Other impacts anticipated to occur include those in the direct and indirect effects listed above under soils section. Direct effects to ecological sites would occur from ground disturbance caused by construction practices. Short term effects would occur where vegetated areas are disturbed but later reclaimed as soon as practical from initial disturbance. Long-term effects would occur where well pads, roads, and other semi-permanent facilities, resulting in loss of vegetation and prevent reclamation for the life of the project. Other impacts include a reduction in the utility of interim reclaimed areas because of reduced species and landscape diversity on reclaimed sites, increased soil erosion, and habitat loss for wildlife and livestock.

4.2.2.2. Cumulative Effects

The PRB FEIS discusses the cumulative effects to ecological sites (pp. 4-153 to 4-172). Cumulative effects to ecological sites include the further alteration of disturbance regimes from the increased disturbance, increase in noxious weeds, and alterations in vegetation community's diversity and cover.

4.2.2.3. Mitigation Measures

Implementation of operator's MSUP (specifically Plans for Reclamation of the Surface), agreed to COAs, and mitigation measures described in the operator's Integrated Weed and Pest Management Plan will reduce surface disturbance impacts to ecological sites and vegetation. See the administrative record for some of these documents.

4.2.2.4. Residual Effects

Residual effects were also identified in the PRB FEIS, p. 4-408. Including loss of vegetative cover during construction, interim reclamation and long-term on well location and access road. The potential spread and establishment of weeds, and alteration of species biodiversity until successful final reclamation. Successful interim reclamation should create a stable functioning ecosystem that prepares the site for eventual final reclamation, which would reduce the residual effects of the proposed action.

4.3. Water Resources

Adherence to the drilling COAs, the setting of casing at appropriate depths, following safe remedial procedures in the event of casing failure, and using proper cementing procedures should protect fresh water aquifers above the drilling target zone. Compliance with the drilling and completion plans and

Onshore Oil and Gas Orders Nos. 2 and 7 minimize an adverse impact on ground water. The Fox Hills freshwater formation is located at a depth of 2,133 feet. The operator will run surface casing to a depth of 2,450 feet. The volume of water produced by this federal mineral development is unknowable at the time of permitting.

Watershed values, including natural drainages, would not be adversely impacted by the proposal with properly applied mitigation. Other water resources will not be adversely impacted by the proposal.

Possible contamination effects of fresh water aquifers will be reduced through the use of tested casing, by setting casing at appropriate depths and by following safe repair procedures in the event of casing failure. Other downhole well operations are expected to cause minimal impacts using standard engineering practices.

Maximus will have to produce the well(s) for a time to be able to estimate the volume and quantity of water production. To comply with Onshore Order Oil and Gas Order No. 7, Disposal of Produced Water, Maximus will submit a Sundry to the BLM within 90 days of first production which includes a representative water analysis and the final proposal for water management. The quality of water produced in association with conventional oil and gas historically was such that surface discharge would not be possible without treatment. Initial water production is quite low in most cases. There are 3 common alternatives for water management: re-injection, deep disposal, or disposal into pits. All alternatives would be protective of groundwater resources when performed in compliance with state and federal regulations.

4.3.1. Cumulative Effects

The cumulative impacts of the foreseeable activity and proposal, when considered with other existing and development in the areas are not expected to be significant. The application of mitigation measures will ensure that the incremental impacts of this well, when considered with any existing development are insignificant. For more information on cumulative impacts, please refer to the PRB FEIS pp. 4-172 and 4-173.

4.3.2. Mitigation Measures

Adherence to the drilling COAs, the setting of casing at appropriate depths, following safe remedial procedures in the event of casing failure, and using proper cementing procedures should protect any fresh water aquifers above the target coal zone. This will ensure that ground water will not be adversely impacted by well drilling and completion operations.

4.4. Invasive Species

4.4.1. Direct and Indirect Effects

The operator committed to the control of noxious weeds and species of concern using the following measures identified in their Integrated Pest Management Plan (IPMP): 1) Control Methods, including frequency; 2) Preventive practices; and 3) Education. Cheatgrass (*Bromus tectorum*) and to a lesser extent, Japanese brome (*B. japonicus*) exist in the affected environment. The use of existing facilities along with the surface disturbance associated with construction of proposed access roads, pipelines, and related facilities would present opportunities for weed invasion and spread. The activities related to the performance of the proposed project would create a favorable environment for the establishment and spread of noxious weeds/invasive plants such as Scotch thistle, Canada thistle, and Cockle bur. However, applicant committed measures will reduce potential impacts from noxious weeds and invasive plants.

4.4.2. Cumulative Effects

The activities related to the performance of the foreseeable activity or the proposed project would create a favorable environment for the establishment and spread of noxious weeds/invasive plants.

4.4.3. Mitigation Measures

The operator committed to the control of noxious weeds and species of concern using the measures identified in their Integrated Pest Management Plan (IPMP).

4.4.4. Residual Effects

Control efforts by the operator are limited to the surface disturbance associated the implementation of the project. Cheat grass and other invasive species that are present within non-physically disturbed areas of the project area are anticipated to continue to spread unless control efforts are expanded. Cheatgrass and to a lesser extent, Japanese brome (B. japonicus) are found in such high densities and numerous locations throughout NE Wyoming that a control program is not considered feasible at this time; these annual bromes would continue to be found within the project area.

4.5. Threatened, Endangered, Candidate, Special Status (Sensitive) Species

4.5.1. Greater Sage-Grouse

4.5.1.1. Direct and Indirect Effects

Implementation of the proposed project will impact GSG habitat and individuals. Impacts to GSG are generally a result of loss and fragmentation of sagebrush habitats associated with roads and infrastructure. Research indicates that GSG hens also avoid nesting in developed areas.

Impacts to GSG associated with energy development are discussed in detail in the 12-Month Findings for Petitions to List the Greater Sage-Grouse (Centrocercus urophasianus) as Threatened or Endangered (USFWS 2010) and chapters 15-21 of Greater Sage-grouse Ecology and Conservation of a Landscape Species and its Habitats (Knick and Connelly 2011).

The proposed project area contains suitable nesting, brood-rearing, and winter habitat. Construction of the wells and the associated infrastructure will cause fragmentation of sagebrush stands and result in the direct loss of approximately 7.2 acres of GSG habitat. Noise and human disturbance associated with roads, construction, drilling, and completion will be disruptive to GSG. Implementation of the project will adversely impact nesting habitat, both through direct loss of suitable habitats and avoidance of the area by GSG due to fragmentation and anthropogenic activity.

During onsite visits, the BLM biologist made no specific recommendations to avoid placement of facilities in sagebrush to reduce direct loss of GSG habitat. The well is located 325 feet from an existing ranch road and active agricultural field. The surface owner indicated that the proposed location would have the least impact to his ranching and agricultural operations. Though neither GSG nor any sign was observed at or near the areas of surface disturbance during either of the biologists' site evaluations, the project may impact individuals transiting the area or utilizing the habitat during construction of the well and access.

4.5.1.2. Cumulative Effects

The PRB FEIS (BLM 2003) states that "the synergistic effect of several impacts would likely result in a downward trend for the sage-grouse population, and may contribute to the array of cumulative effects that may lead to its federal listing. Local populations may be extirpated in areas of concentrated development, but viability across the Project Area [PRB] or the entire range of the species is not likely to be compromised (pg. 4-270)." The 2012 population viability analysis for the NE Wyoming GSG found there remains a viable population of GSG in the PRB (Taylor et al. 2012). Threats from energy development and West Nile Virus (WNv) are impacting future viability (Taylor et al. 2012). The study indicated that effects from energy development, as measured by male lek attendance, are discernible out to a distance of 12.4 miles.

Based on the impacts described in the PRB FEIS and the findings of more recent research, the proposed action may contribute to a decline in sage grouse near the project area, and, potentially, extirpation of the local grouse population.

4.5.1.3. Mitigation Measures

The proposed action is more than 4 miles from occupied leks. No mitigation measures are proposed.

4.5.1.4. Residual Effects

The PRB FEIS predicted that the PRB oil and gas development would have significant impacts to the GSG population. The impact of the proposed project development cumulatively contributes to the potential for local extirpation. Alternative B and the COAs applied are consistent with current BLM and Wyoming GSG conservation strategies and the anticipated effects are within the parameters of the PRB FEIS/ROD.

4.5.2. Special Status (Sensitive) Species (SSS)

The PRB FEIS discusses impacts to SSS on pp. 4-257 to 4-265. The effects to sensitive species resulting from implementation of the project are in the administrative record (AR) for those SSS that may occur in the project area. Site specific effects to SSS are described below.

4.5.2.1. Bald Eagle

4.5.2.1.1. Direct and Indirect Effects

Impacts to bald eagles are discussed in the PRB FEIS, pp. 4-251 to 4-253. Additional site-specific information is provided here. Though potential winter roost habitat is present in the ponderosa pines to the north and east of the project area, the proposed disturbance is mostly shielded by topography. The presence of a large, ½ mile-long stand of cottonwoods 1.4 miles to the northeast of the project reduces the likelihood of bald eagles selecting the relatively exposed ponderosas for winter roosts.

4.5.2.1.2. Cumulative Effects

The cumulative effects for bald eagles are described in the PRB FEIS, pp. 4-251 to 4-253. In addition to the federal development, there would be fee development associated with the project that would have similar impacts on bald eagles. Livestock grazing also occurs in the area, which may provide some of the prey base for bald eagles that winter in the area.

4.5.2.1.3. Mitigation Measures

No mitigation measures are proposed.

4.5.2.1.4. Residual Effects

No residual effects, other than those described in the PRB FEIS related to cumulative impacts of oil and gas development, are anticipated as a result of the proposed action.

4.5.3. Big Game

4.5.3.1. Direct and Indirect Effects

The PRB FEIS discusses impacts, including direct and indirect effects, cumulative effects, and residual effects to big game on pp. 4-181 to 4-215. List big game species and identified habitat here, would be directly disturbed with the construction of wells, and associated infrastructure. Long term disturbance would be direct habitat loss. Short-term disturbances also result in direct habitat loss; however, they should provide some habitat value as these areas are reclaimed and native vegetation becomes established.

4.5.3.2. Cumulative Effects

The cumulative effects associated with Alternative B are within the analysis parameters and impacts described in the PRB FEIS. For details on expected cumulative impacts, refer to the PRB FEIS, p. 4-181 to 4-215.

4.5.3.3. Mitigation Measures

No mitigation is proposed.

4.5.3.4. Residual Effects

No residual effects, other than those described in the PRB FEIS related to cumulative impacts of oil and gas development, are anticipated as a result of the proposed action.

4.5.4. Migratory Birds

4.5.4.1. Direct and Indirect Effects

The PRB FEIS discussed direct and indirect effects to migratory birds on pp. 4-231 to 4-235. Direct mortality of a bird or destruction of an active nest due to construction activities could result in a "take" as defined (and prohibited) by the MBTA, a nondiscretionary statute, and in turn a violation of the law. See also, FLPMA, Sec. 302(b).

During the onsites, the BLM biologist identified suitable nesting habitat present for several BLM sensitive sagebrush obligates. Construction of the Avery 26-14 well pad and associated infrastructure will remove habitat and could kill BLM sensitive migratory birds, or destroy eggs.

Migratory bird species in the PRB nest in the spring and summer and are vulnerable to the same effects as GSG and raptor species. Though no timing restrictions are typically applied specifically to protect migratory bird breeding or nesting, where GSG or raptor nesting timing limitations are applied, nesting migratory birds are also protected. Where these timing limitations are not applied and migratory bird species are nesting, migratory birds remain vulnerable. Surface disturbing activities associated with the Avery 26-24 project will have raptor timing limitations applied, thereby providing protection to migratory birds until April 15. Whether migratory birds still receive protection until July 31 is dependent on whether an active raptor nest is located within 0.5 miles of the project area.

Heater treaters, and similar facilities with vertical open-topped stacks or pipes, can attract birds. Facilities without exclusionary devices pose a mortality risk. Once birds crawl into the stack, escape is difficult and the bird may become trapped (U.S. v. Apollo Energies Inc., 611 F.3d 679 (10th Cir. 2010); see also Colorado Oil and Gas Commission, Migratory Bird Policy, accessed February 13, 2012).

Additional Impacts to migratory birds will be similar to those described in the Sahara POD EA, WY-070-EA13-72, 2013, Section 4.6.2.2.1, pp. 31-32, incorporated here by reference.

4.5.4.2. Cumulative Effects

The cumulative effects associated with alternative B are within the analysis parameters and impacts described in the PRB FEIS. For details on expected cumulative impacts, refer to the PRB FEIS, p. 4-235.

4.5.4.3. Mitigation Measures

To reduce the likelihood of a "take" under the MBTA, the BLM biologist recommends that construction (vegetation removal) occur outside of the breeding season for the greatest quantity of BLM sensitive passerines (May 1- July 31) where suitable nesting habitat for sagebrush obligates is present. This restriction would apply to habitat removal, unless a pre-construction nest search (within approximately 10 days of construction planned May 1-July 31) is completed. If surveys will be conducted, the operator will

coordinate with BLM biologists to determine protocol. The nest search will consist of in areas where vegetation will be removed or destroyed.

4.5.4.4. Residual Effects

Nests initiated after the first week in July may be destroyed by construction after August 1st. Migratory birds nesting adjacent to the well pad or road may be disturbed by construction and production activities. A timing limitation does nothing to mitigate loss and fragmentation of habitat. Suitability of the project area for migratory birds will be negatively affected due to habitat loss and fragmentation and proximity of human activities associated with oil and gas development.

4.5.5. Raptors

4.5.5.1. Direct and Indirect Effects

The PRB FEIS discussed direct and indirect effects to raptors (pp. 4-216 to 4-221). This project would result in disturbance in proximity of nesting raptors, including direct and indirect habitat losses associated with declines in habitat effectiveness.

Human activities in close proximity to active raptor nests may interfere with nest productivity. Romin and Muck (1999) indicate that activities within 0.5 miles of a nest are prone to cause adverse impacts to nesting raptors. If mineral activities occur during nesting, they could be sufficient to cause adult birds to remain away from the nest and their chicks for the duration of the activities. This absence can lead to overheating or chilling of eggs or chicks. Prolonged disturbance can also lead to the abandonment of the nest by the adults. Both actions can result in egg or chick mortality.

BLM recommends the location of all infrastructures requiring human visitation be designed to provide an adequate biologic buffer for nesting raptors. A biologic buffer is a combination of distance and visual screening that provides nesting raptors with security such that routine activities preclude flushing the raptors.

During the onsite visits, the BLM biologist and the operator's consultant confirmed that topography may shield most construction and well activities from the raptor nest 0.36 miles north of the Avery 26-14 location. Tall structures, such as a drilling rig, would likely be visible from the nest, and could disrupt nesting activity.

4.5.5.2. Cumulative Effects

The cumulative effects associated with alternative B are within the analysis parameters and impacts described in the PRB FEIS. For details on expected cumulative impacts, refer to the PRB FEIS, p. 4-221.

4.5.5.3. Mitigation Measures

To reduce the risk of decreased productivity or nest failure, the BLM BFO requires a 0.5 mile radius timing limitation during the breeding season around active raptor nests.

4.5.5.4. Residual Effects

Even with timing restrictions, raptors may abandon nests due to foraging habitat alteration associated with development or sensitivity to well or infrastructure placement. All raptors using nests in the vicinity of the project would likely be impacted to some extent by the human disturbance associated with operation and maintenance of the project. Routine human activities near these nests can draw increased predator activity to the area and increase nest predation. Declines in breeding populations of some species that are more sensitive to human activities may occur.

4.6. Cultural Resources

BLM policy states that a decision maker's first choice should be avoidance of historic properties (BLM

Manual 8140.06(C)). If historic properties cannot be avoided, mitigation measures must be applied to resolve the adverse effect. No historic properties will be impacted by the proposed project. Following the *State Protocol Between the Wyoming Bureau of Land Management State Director and The Wyoming State Historic Preservation Officer*, Section VI(A)(1), the BLM notified the Wyoming State Historic Preservation Officer (SHPO) on January 24, 2014, that no historic properties exist in the area of potential effect (APE). If any cultural values (sites, features or artifacts) are observed during operation, they will be left intact and the Buffalo Field Manager notified. If human remains are noted, the procedures described in Appendix L of the PRB FEIS and ROD must be followed. Further discovery procedures are explained in Standard COA (General)(A)(1).

4.6.1. Direct, Indirect, and Cumulative Effects

Construction and development of oil and gas resources impacts cultural resources through ground disturbance, unauthorized collection, and visual intrusion of the setting of historic properties. This results in fewer archaeological resources available for study of past human life-ways, changes in human behavior through time, and interpreting the past to the public. Additionally, these impacts may compromise the aspects of integrity that make a historic property eligible for the National Register of Historic Places. Recording and archiving basic information about archaeological sites and the potential for subsurface cultural materials in the proposed project area serve to partially mitigate potential cumulative effects to cultural resources.

Fee actions constructed in support of federal actions can result in impacts to historic properties. Construction of large plans of coalbed natural gas development on split estate often include associated infrastructure that is not permitted through BLM. Project applicants may connect wells draining fee minerals, or previously constructed pipelines on fee surface with a federal plan of development. BLM has no authority over such development which can impact historic properties. BLM has the authority to modify or deny approval of federal undertakings on private surface, but that authority is limited to the extent of the federal approval. Historic properties on private surface belong to the surface owner and they are not obligated to preserve or protect them. The BLM may go to great lengths to protect a site on private surface from a federal undertaking, but the same site can be legally impacted by the landowner at any time. The cumulative effect of numerous federal approvals can result in impacts to historic properties. Archeological inventories reveal the location of sites and although the BLM goes to great lengths to protect site location data, information can potentially get into the wrong hands. BLM authorizations that result in new access can inadvertently lead to impacts to sites from increased visitation by the public.

4.6.2. Mitigation Measures

If operators observe any cultural values [sites, artifacts, human remains (Appendix L PRB FEIS and ROD)] during operation of this lease/permit/right-of-way, they will be left intact and the Buffalo Field Manager notified. Standard COA (General)(A)(1) further explains discovery procedures.

4.6.3. Residual Effects

During the construction phase, there will be numerous crews working across the project area using heavy construction equipment without the presence of archaeological monitors. Due to the extent of work and the surface disturbance caused by large vehicles, it is possible that unidentified cultural resources can be damaged by construction activities. The increased human presence associated with the construction phase can also lead to unauthorized collection of artifacts or vandalism of historic properties.

5. CONSULTATION/COORDINATION:

BLM Consulted or Coordinated with the Following on this Analysis; OSP (Onsite Presence):

Contact	Organization	OSP?	Contact	Organization	OSP?
Mary Hopkins	WY SHPO	No			

List of Preparers (BFO unless otherwise noted)

Position/Organization	Name	Position/Organization	Name
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