

**DECISION RECORD**

**Environmental Analysis (EA), WY-070-EA14-194**

**Lone Moose Federal Com 14H, Groves Com 53H, Citrine Federal Com 1H, and Combat Com 2H**

**Yates Petroleum Corp., Plan of Development (POD)**

**Bureau of Land Management, Buffalo Field Office, Wyoming**

**DECISION:** The BLM approves the applications for permit to drill (APDs) from Yates Petroleum Corp. (YPC) to drill 4 horizontal oil and gas wells. The company proposes to drill the wells and construct associated infrastructure, at the locations noted below.

**Compliance.** This decision complies with:

- Federal Land Policy and Management Act of 1976 (FLPMA) (43 USC 1701); DOI Order 3310.
- National Environmental Policy Act of 1969 (NEPA) (42 USC 4321).
- National Historic Preservation Act of 1966 (16 USC 470).
- Endangered Species Act of 1974 (16 USC 1531).
- Buffalo, Powder River Basin (PRB) Final Environmental Impact Statement (FEIS), 1985, 2003 (2011).
- Buffalo Resource Management Plan (RMP) 1985, Amendments 2001, 2003, 2011.

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

BLM approves the following APDs and support facilities:

#	Well Name & #	Qtr	Sec	Twp	Rng	Lease #s WYW-
1	Lone Moose Federal Com 14H	SWSE	23	44N	74W	134893, 143551
2	Groves Com 53H (fee/fee/fed)	SWSE	8	43N	73W	105947
3	Citrine Fed Com 1H	NENE	1	42N	73W	139648, 145120, 138127
4	Combat Com 2H	SESW	29	42N	72W	121267

**Limitations.** See the conditions of approval (COAs).

**THE FINDING OF NO SIGNIFICANT IMPACT (FONSI).** Analysis of Alternative B of the EA, WY-070-EA14-194, incorporated here by reference, found YPC's proposal for 4 APDs will have no significant effects on the human environment beyond those described in the PRB FEIS. There is no requirement for an EIS.

**COMMENT OR NEW INFORMATION SUMMARY.** After the receipt of the APDs BLM also received policy clarifications on bond review via Wyoming BLM IM-2014-009, and on tiering / incorporating by reference via 184 IBLA 307.

**DECISION RATIONALE.** The approval of this project is because:

1. Mitigation measures and COAs analyzed in the EA, in environmental impact statements or NEPA documents to which the EA tiers or incorporates by reference, will reduce environmental impacts while meeting the BLM's need.
2. The approved project conditioned by its design features and COAs, will not result in any undue or unnecessary environmental degradation.
  - A. 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.

- B. BLM adopts the analysis and condition of approval for burrowing owl conservation from the similarly situated sagebrush and short grass prairie found in the PRB's Thunder Basin National Grassland Land and RMP, 2002, 2006, pp. 1-13 to 1-22; the supporting FEIS, 2002, and its Records of Decision, 2002, p. D-15, 2006. This is the least restrictive COA for burrowing owl conservation benefitting the owl and this project.
- C. There are no conflicts anticipated or demonstrated with current uses in the area.
- 3. Approval of this project conforms to the terms and the conditions of the 1985 Buffalo RMP (BLM 1985) and subsequent update (BLM 2001) and amendments (BLM 2003, 2011).
- 4. The selected alternative will help meet the nation's energy need, revenues, and stimulate local economies by maintaining workforces.
- 5. The operator, in their APDs, shall:
  - Comply with all applicable federal, state, and local laws and regulations.
  - Offer water well agreements to the owners of record for permitted water wells within 0.5 mile of a federal producing well in the APDs (PRB FEIS ROD, p. 7).
- 6. The project is clearly lacking in wilderness characteristics as it lacks federal surface.
- 7. YPC certified there is a surface use access agreement with the landowners.
- 8. This approval is subject to adherence with all of the operating plans, design features, and mitigation measures contained in the master surface use plan of operations, drilling plan, water management plan, and information in the APDs.

**ADMINISTRATIVE APPEAL:** This decision is subject to administrative appeal in accord with 43 CFR 3165. Request for administrative appeal 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. Any party who is 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: Shawn M. Dyer Date: 3/25/14

**FINDING OF NO SIGNIFICANT IMPACT**  
**Environmental Analysis (EA), WY-070-EA14-194**  
**Lone Moose Federal Com 14H, Groves Com 53H, Citrine Federal Com 1H, and Combat Com 2H**  
**Yates Petroleum Corp., Plan of Development (POD)**  
**Bureau of Land Management, Buffalo Field Office, Wyoming**

**FINDING OF NO SIGNIFICANT IMPACT (FONSI).** Based on the information in the EA for this POD, 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 4 well 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 have minor controversy, are not highly uncertain, or do not involve unique or proven 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 as it lacks federal 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: 3/25/14

**Environmental Assessment (EA), WY-070-EA14-194**  
**Yates Petroleum Corp., 4 Applications for Permit to Drill (APDs)**  
**Lone Moose Federal Com 14H, Groves Com 53H, Citrine Federal Com 1H, and Combat Com 2H**  
**Plan of Development (POD)**  
**Bureau of Land Management, Buffalo Field Office, Wyoming**

## 1. INTRODUCTION

Yates Petroleum Corp. (YPC) requests BLM's approval for 4 applications for permit to drill (APDs) on 4 pads. BLM incorporates the APDs here by reference; see the administrative record (AR). YPC proposes to drill the horizontal oil and gas wells and construct associated infrastructure at the locations in Table 1.1 and Map 1. The proposed wells are about 6 miles apart on a northwest to southeast orientation spanning parts of 4 townships as YPC proposes draining from the Turner Formation. The wells will be drilled from a non-federal surface sites into underlying federal minerals on lease numbers listed below – resulting in standard split federal jurisdiction, (except for the Groves Com 53H which is over fee minerals). Patricia J. Moore Revocable Trust, Drake Family Trust, Richard W. Leavitt Trust, and Bridle Bit Ranch are the surface owners. The proposals clearly lack wilderness characteristics as they lack federal surface.

**Table 1.1. APDs, North to South, with Surface, Lateral, and Bottomhole Leases; see, Map 1.**

#	Well Name & #	Qtr	Sec	Twp	Rng	Lease #s WYW-
1	Lone Moose Federal Com 14H	SWSE	23	44N	74W	134893, 143551
2	Groves Com 53H (fee/fee/fed)	SWSE	8	43N	73W	105947
3	Citrine Fed Com 1H	NENE	1	42N	73W	139648, 145120, 138127
4	Combat Com 2H	SESW	29	42N	72W	121267

### 1.1. Background

YPC submitted the APDs to the BLM on June 17, August 7, and 9, 2013. YPC and BLM completed onsite inspections on September 11 and 12 (biologist), 2013. The parties evaluated the proposals, modifying them to reduce environmental impacts. The BLM sent a post onsite deficiency letter to YPC on September 26, 2013. The APDs do not satisfy the categorical exclusion directive of the Energy Policy Act of 2005, Section 390 because they are in a developed field supported by any NEPA document older than 5 years from the date possible to spud these wells. This EA heavily incorporates by reference from earlier NEPA analyses of PODs and wells in the analysis footprint of these 4 proposed APDs; see Annex 1.

### 1.2. Need for the Proposals

The BLM's need for this project is to meet the management objectives of the Buffalo Resource Management Plan (RMP), 1985, 2001, 2003, and 2011 (to which this EA tiers). BLM must determine how and under what conditions to balance natural resource conservation with allowing the company to exercise lease rights to develop fluid minerals, as described in their APDs associated plans. Conditional fluid mineral development supports the RMP, the Mineral Leasing Act of 1920, the Federal Land Policy Management Act (FLPMA), 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 APDs 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 Powder River Basin (PRB) area received 3 comments, revealing no new issues. The BFO interdisciplinary team conducted internal scoping by reviewing the proposal, its location, and a resource (issue) list (see, AR), to identify potentially significantly affected resources, land uses, resource issues, regulations, and site-specific circumstances not addressed in the 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 Final Environmental Impact Statement (FEIS) (which this EA tiers), or other analyses addressed. The area's extensive development was material to this scoping; see Section 3, below.

## **2. PROPOSED PROJECT AND ALTERNATIVES**

### **2.1. Alternative A – No Action**

The no action alternative would deny these APDs requiring the operator to resubmit APDs that comply 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 – incorporating by reference the analyses and developments approved by the subsequent NEPA analyses for overlapping, intermingled, and/or similar developments to the proposals. See Table 3.1 and Map 1.

### **2.2. Alternative B Proposed Action (Proposal)**

**Overview.** YPC requests BLM's approval for 4 horizontal oil well APDs from 4 pads, and supporting infrastructure; see Table 1.1. The wells will be drilled from a non-federal surface into underlying federal minerals, (except for Groves 53H which is over fee mineral) on lease numbers listed in Table 1.1. The proposals are to explore for, and possibly develop oil and gas reserves in the Turner Formation at depths around 10,500 feet. The project areas are west, south and southwest of Wright, Campbell County, Wyoming. Project elevations average 5,000 feet. The topography has gently sloped draws rising to mixed sagebrush and grassland uplands. Ephemeral tributaries drain the areas. The area climate is semi-arid, averaging 10-14 inches annual precipitation, about 60% of which occurs between April and September.

#### Drilling, Construction and Production design features include:

##### **Access.**

- A road network will consist of existing improved all-weather roads and newly constructed crown and ditch template roads.
- All roads will be maintained to meet BLM standards during the entire life of the project area.
- During interim reclamation the ditches will be seeded with a BLM approved seed mix to minimize erosion and maintain topsoil viability.
- Culverts will be installed on newly constructed access roads as applicable.

##### **Well Locations**

- The well pads will be constructed with cuts/fills and topsoil/spoil piles surrounding the pads' surface. Disturbances are outlined in Tables 2.3a and 2.3b.
- The wells will use a semi-closed loop system. Lined pits at the pads will hold the cuttings.
- Several 400 bbl. to 500 bbl. tanks for oil and water will be placed on location for each well.
- No staging areas, man camps/housing facilities are anticipated to be used off-site. Working trailers and sleeping trailers will be placed on the well pad during the drilling and completion of the well.
- If the well becomes a producer, production facilities will be located at the well site and will include a pumping unit, storage tanks, buildings, oil-water separator (heater-treater) etc. There will be no pits at the production phase of these well locations.
- Dikes will be constructed completely around production facilities, i.e. production tanks, water tanks, and heater treater. The dikes will be constructed, approximately 3 feet high, and hold the capacity of

the largest tank plus 10%. If load-out lines are outside of the dike area, a drip barrel or “Getty-Box” will be installed under the end of all load-out lines.

**Drilling and Completion Operations**

- Hydraulic fracturing (HF) operations are planned as a ‘plug & perf’ operation done in approximately 20 stages. All fresh water will be contained in either approximately 60-170 HF tanks or a large capacity storage tanks; see AR. No additional well pad disturbance is anticipated for HF operations. Completion flowback water will be held in the tanks on location and trucked to a disposal facility permitted by Wyoming Department of Environmental Quality (WDEQ). See the AR for water sources.
- (120-170) 500-bbl HF tanks are spotted, taking 2 weeks to fill, prior to pumping the stimulation. All HF water, including excess, is present before starting.
- Flowback equipment and tanks are spotted 2-3 days before pumping. Sand silos are spotted and filled 2-3 days prior to pumping.
- Next pump trucks and chemical mixing equipment arrives and, when ready, operations continue for 36-48 hours or 3-5 days depending on the type of stimulation stage isolation (i.e. packers/sleeves or plug/perf respectively).
- Sand is continuously brought on site in semi-truck loads during pumping. It is necessary to have a safe turning radius available for these trucks. Pumping water may require heating in the winter months.
- Approximately 40,000 bbls. of water well be use per well.
- A detailed completion operations plan is outlined in the surface use plan (SUP).
- Peak truck traffic to fill HF tanks for completion operations is estimated to be 700 roundtrips per well.

**Table 2.1. Anticipated Drilling and Completion Sequence and Timing (per well)**

Drilling and Completion Step	Approximate Duration
Build Location (roads, pad, and other initial infrastructure)	30 days
Mob Rig	2-4 days <sup>1</sup>
Drilling (24/7)	30-60 days <sup>2</sup>
Completion (setup, logistics, completion, demobilization)	90 days

<sup>1</sup> Depending on distance and needed to add supplemental drilling equipment, such as skidding plates.  
<sup>2</sup> By comparison, approximately 2 days are required to drill a CBNG well. ICF 2012

**Table 2.1a. Disturbance Summary for POD in feet and acres (ac):**

Activity	Number	Length (feet)	Width (feet)	Acres of Disturbance	Interim Disturbance
<b>Well:</b> constructed pad (400’x400’), with cuts/fills and topsoil/spoildisturbances-6 to7 acres disturbance/location	4	400’	400’	27 ac.	23 ac.
Newly Constructed Access Roads	4	varies	varies	17.12 ac.	17.12 ac.
Buried Power Line	3	6050’	25’	3.47 ac.	0.0 ac.
Buried Water Line	2	3000’	45’	3.1 ac.	0.0 ac.
Temp. Surface Water Line	4	15,400	12”	0.35 ac.	0.0 ac.
<b>Total Disturbance for this location</b>				<b>51.04 ac</b>	<b>40.12 ac</b>

YPC requests about 6 to 7 acres from bladed and level pad sites; see Bonita Fed Com 11 Categorical Exclusion 3 (CX3), WY-070-390CX3-13-41, p. 3., and see the pad description and analysis in Crazy Cat East EA, WY-070-EA13-028, both incorporated here by reference. YPC will then reduce the initial pad by about 1 acre with interim reclamation. The totality of the pads contribution to surface disturbance in the upper Powder River remains well within the totality of the per-well surface disturbance envisioned and analyzed in the PRB FEIS. The proposed size is necessary to safely accommodate the equipment necessary for an effective well completion.

**Off Well Pad.**

Water pipelines and buried electric lines are needed for these wells. Power will be buried from a power drop, from existing power polls nearest the well. Water pipelines will be both buried and temporary (3 to 6 months) and come from a water well, or water storage tanks nearest the wells.

**Plan of Operations.**

The proposal conforms to all Bureau standards and incorporates appropriate best management practices, required and designed mitigation measures determined to reduce the effects on the environment. BLM reviewed and approved a surface use plan of operations describing all proposed surface-disturbing activities pursuant to Section 17 of the Mineral Leasing Act, as amended. This analysis also incorporates and analyzes the implementation of committed mitigation measures in the SUP, drilling plan, and the standard conditions of approval (COAs) found in the PRB FEIS ROD, and Appendices A, and B.

**Reasonably Foreseeable Activity.**

The reasonably foreseeable activity (RFA) for this area includes oil/gas exploration on 320 acre spacing or larger for horizontal wells and 80 acre spacing for vertical wells. This RFA applied to this EA includes a radius of 3.1 miles from each APD as that is the minimum analysis distance that ties the 4 APDs to 1 POD proposal. This RFA is within and adheres to the RFA spacing analysis and the development of up to 54,200 fluid mineral wells, 3,200 of which are deep wells (natural gas and oil wells in the PRB FEIS).

**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 the approval of analyses; see Annex 1; incorporated by reference in this EA. 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 overlapping, similar and intermingled developments coincident to this proposal area to retain currency in the no action alternative and later, in cumulative effects. 615 F. 3d 1122 (9th Cir. 2010). The 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. 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. BLM determined a minimum of 115 townships from the northern borders of Sheridan and Campbell Counties to the southern border of Campbell County, and the east side of Johnson County are a developed field for fluid minerals because of the existing federal developments. These APD proposals are in the developed field. The State of Wyoming and BLM will likely continue to approve more wells in the area, in the near future. In addition, other operators, as well as YPC are likely to continue seeking permits to develop unconnected leases 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, if permitted.

### **3.1. Air Quality**

BLM incorporates by reference the updated air quality affected environment section from the Porsche 3H & 4H Wells EA, Section 3.1; see Annex 1. Campbell County received an air quality alert in 2014 for particulate matter, attributed to coal dust. Adgate, et al. advanced a hypothesis that air and water quality effects from HF may negatively impact human health but concluded that “major uncertainties” and a “paucity of baseline data” after drilling 153,260 wells since 2004. They called for more research funding.

### **3.2. Soils, Ecological Sites, and Vegetation**

BLM incorporates by reference the soils and vegetation sections in the Antler EA, Section 3.2; Starlight EA, p. 3; Verde EA, Sections 3.1, 3.2, and 3.2.1; and the Wilkinson EA, Section 3.2; see Annex 1. Soils, ecological sites, and vegetation found in the projects areas are similar to those analyzed in the above mentioned EAs. Dominant Ecological Sites and Soils affected in the project area are Loamy, Clayey and Sandy Ecological sites which contain sands, loams and clay soils.

### **3.3. Water Resources**

The Lone Moose Federal Com 14H and the Groves Com 53H wells are in the Upper Belle Fourche River watershed; and BLM incorporates by reference the respective analyses in the Antler EA, Sections 3.3.2 and 3.5 (all); and the Starlight EA, pp. 4-5. The Citrine Fed Com 1H and the Combat Com 2H wells are in the Cheyenne River’s tributary drainages Cripple Creek and Spring Creek; and BLM incorporates by reference the respective analyses in the Verde EA, Sections 3.2.2 and 3.5 (all); and the Wilkinson EA, Section 3.2.2.1. Most area drainages are ephemeral to intermittent. The channels are primarily well vegetated grassy swales, without defined bed or bank. See the PRB FEIS for a more detailed surface water discussion of this local. 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 WY Oil and Gas Conservation Commission (WOGCC) has authority for permitting and bonding off channel pits located over state and fee minerals. Adgate, et. al., and news sources reveal a minor controversy over a state’s non-disclosure of proprietary HF fluids while release decisions receive administrative and court reviews.

The historical use for the area’s groundwater is for stock or domestic water. A search of the WSEO Ground Water Rights Database as presented in YPC’s MSUP showed a total of 12 permitted water wells in a 1 mile radius of the proposed wells’ vertical bore shafts. Depths of the permitted wells range from 83 ft to 300 ft below ground surface (bgs). For more groundwater information refer to the PRB FEIS, pp. 3-1 to 3-36. The largest fresh water aquifer in the expected zone of influence of these 4 proposed wells is within the Fox Hills Formation at an anticipated depth of 6,132 to 6,502 ft bgs.

### **3.4. Invasive or Noxious Species**

BLM incorporates by reference the invasive species subsections from the Antler EA, Section 3.2.2; Starlight EA, p. 3; Verde EA, Sections 3.2.3; and the Wilkinson EA, Section 3.2.2.2; see Annex 1; as field conditions remain materially similar to these analyses.

### **3.5. Wildlife**

BLM reviewed the proposed APDs and determined that the proposals, combined with the COAs (and design features), are: (1) consistent with the FEIS and its supplements, the RMP and the incorporated by reference NEPA analyses; and (2) consistent with the programmatic biological opinion (ES-6-WY-02-F006), which is an update from the PRB FEIS, Appendix K. The 4 proposed wells occur in sagebrush grassland habitats that support many wildlife species. The affected environment for wildlife is discussed in, and similar to that analyzed in the EAs in Annex 1, Table 3.2, below, which occur in similar habitats, and in most cases are in the same analysis area. Additional site-specific information for raptors, migratory birds, Greater Sage-Grouse, and mountain plover are described below.

### **3.5.1. Raptors**

The affected environment for raptors is expected to be similar to the descriptions in the documents in Annex 1, Table 3.2, with the following additional site-specific information. The U.S. Fish and Wildlife Service (FWS) recommends a 1-mile spatial buffer to protect ferruginous hawk nests.

#### Lone Moose Federal Com 14H well

There are no known raptor nests present within 0.5 miles of the Lone Moose Federal Com 14H well pad. Golden eagle nest #13410 was active in 2013 and is within 0.5 miles of the existing improved road to the well and the main access road (Moore Road) in the area.

#### Groves Com 53H well

There are 3 known ground nests within 0.5 miles (#s 2432, 2433, 10989), and an additional 4 nests within 1 mile (#s 2230, 2431, 2434, 11001), of the well pad and infrastructure. All 7 nests are either known or likely to have been built by ferruginous hawks. Nest #s 2432, 2433, and 10989 are in line of sight of the proposed well. Nest #s 2432 and 10989 are also less than 0.10 miles from the main access road to the pad. YPC's contractor, ICF reported that nest #2432 was likely active in 2012, and nest #10989 was likely active in 2013 (BLM-BFO Raptor Database).

#### Citrine Federal Com 1H well

An active prairie dog town is present within about 0.1 miles, and line of sight, of the proposed Citrine Federal Com 1H well and access road. Burrowing owls were still occupying the town in September 2013 during the onsite. There are currently 4 wells (3 CBNG, and 1 oil) within 0.3 miles of the prairie dog colony. The FWS recommends a 0.25-mile spatial buffer to protect burrowing owl nests.

Six ferruginous hawk nests occur within 1 mile of the proposed Citrine Federal Com 1 H well and associated infrastructure, nest #s: 5226, 5233, 5320, 5321 (active 2013), 6290 (active 2012), and 11919. All 6 nests are outside the 0.5 mile buffer that BLM-BFO typically applies to surface disturbing activities in order to protect active nests from decreased productivity or failure.

#### Combat Com 2H well

Eight (8) ferruginous hawk nests occur within 1 mile of the proposed Combat Com 2H well and associated infrastructure. Only 3 of these nests are within the line of sight of the project, nest #s 13411, 13442, and 13443. Nest #s 13442 and 13443 are 0.3 miles and 0.6 miles, respectively, from the proposed well. Nest #13411 is 0.2 miles, and in direct line of sight of the well pad and access road. All 3 nests were discovered in 2013. It is presently unknown what the ferruginous hawk activity is in the area due to the condition of the nests which range from poor to fair. The surrounding area is currently being developed for conventional oil by several operators on both fee and federal leases. An additional nest, #11978, is 0.25 miles from the proposed well, just outside the spatial buffer recommended by FWS for red-tailed and Swainson's hawks. This nest was active in 2012, but its condition in 2013 is disputed; one observer reported it gone, and one reported it in poor condition. It is possible that Swainson's hawks or red-tailed hawks may return to the tree to rebuild the nest.

### **3.5.2. Migratory Birds**

The affected environment for migratory birds is expected to be similar to the descriptions in the documents in Table 3.2, Annex 1, with the following additional site-specific information. During the onsites, the BLM identified suitable nesting habitat present for several BLM sensitive sagebrush obligates. The BLM confirmed sagebrush habitat, with shrubs ranging in height from 1 – 3 feet, at the proposed Lone Moose Federal Com 14H and Citrine Federal Com 1H well pads and access roads. BLM also confirmed sagebrush habitat at the proposed Combat Com 2H well pad. Brewer's sparrows and sage thrashers both nest in sagebrush shrubs and occur in the area.

### **3.5.3. 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. Table 1 in the administrative record (AR) lists those SSS that may occur in the project area. Table 1, AR, also includes a brief description of the habitat requirements for each species. Wyoming BLM annually updates its list of SSS to focus management to maintain habitats to preclude listing as a threatened or endangered species. Species included on that list that would be impacted by the proposals beyond what is described in Table 1, AR are discussed below.

#### **3.5.3.1. Greater Sage-Grouse (GSG)**

The affected environment for GSG is similar to the descriptions in the documents in Table 3.2, with the following additional site-specific information.

##### Citrine Federal Com 1H well

The Citrine Federal Com 1H well and proposed access road is within suitable nesting habitat for GSG. The surrounding area has moderately dense sagebrush stands and rolling topography. The proposed pad is within 2 miles of the Spring Creek Lek. The well is also within 4 miles of the 160 Acre and Porcupine Creek Leks. The Spring Creek and Porcupine Creek Leks are likely being impacted by existing oil wells constructed within 0.25 miles of the leks.

#### **3.5.3.2. Mountain Plover**

The affected environment for mountain plover is expected to be similar to the descriptions in the documents in Table 3.2, Annex 1, with the following additional site-specific information.

##### Citrine Federal Com 1H well

An active prairie dog town is present within approximately 0.1 miles, and line of sight, of the proposed Citrine Federal Com 1H well and access road. The prairie dog town, as well as several patches of short grass provide suitable nesting habitat for mountain plover. No mountain plover were observed in the area during 2013 surveys.

### **3.6. Cultural**

Per 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 that are found in the area refer to the *Draft Cultural Class I Regional Overview, Buffalo Field Office* (BLM, 2010). Class III (intensive) cultural resource inventories (BFO project #s 70130080, 70130101, 70130102) were performed to locate specific historic properties which may be impacted by the proposals. No cultural resources are in the proposals' area.

## **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; and through the analysis and approval of other projects. BLM incorporates by reference these analyses in this EA; see Annex 1, Table 3.1. This updated the no action alternative and cumulative effects. The project area has surface disturbance from existing roads, well pads, and oil and gas facilities. Under the no action alternative, on-going well field operations would continue as would the development of approved single and multi-well pads, consisting of horizontal wells with approved APDs. 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.

## **Alternative B, Proposed Action (Proposal)**

### **4.1. Air Quality**

BLM incorporates by reference the air quality direct, indirect, cumulative, and residual effects from the analyses in Annex 1, Table 3.1, below as they are materially similar to those for these proposals. 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, or federal air quality standards and this project is within the development parameters. Adgate, et. al., found that most human health studies focused on air quality effects on humans living near wells and summarized that while some effects “estimated lifetime excess cancer risks, which were in the range of concern but below the range where action is typically taken”. None of the 4 proposed wells are near residences. The consistently high WY winds provide an inherent dilution for any fugitive emissions so air quality concerns, similar to its controversy, are negligible.

### **4.2. Soils, Ecological Sites, and Vegetation**

Impacts anticipated occurring and mitigation considered with these proposals will be similar to those analyzed in the following EAs: Antler, Section 4.1, 4.1.1, and 4.1.3; Starlight, p. 3; Verde, Sections 4.1 to 4.1.2, and 4.1.5; and Wilkinson, Section 4.2.1 to 4.2.1.1.3; see Annex 1, Table 3.1, Direct, Indirect, Cumulative, Residual Effects, are all incorporated here by reference. These incorporated EA sections analyze the historical values and settings for soils, ecological sites, and vegetation. Although soil types in the 4 proposed projects, effects, and mitigation are similar, to the respective proposed APD within the earlier analysis.

### **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 volume of water produced by this federal mineral development is unknowable at the time of permitting. BLM incorporates by reference the surface water resources direct, indirect, cumulative, and residual effects from the EA's: Antler, Sections 4.1.1 and 4.4 (all); Starlight, pp. 4-5; Verde, Sections 4.1.3 and 4.4 (all); Wilkinson, Section 4.2.1.1.4 (all) and 4.2.3 (all); and Porsche 3H & 4H, Section 4.3 (all) see Annex 1, Table 3.1. A water well agreement was offered by YPC to the permitted water well owners within 0.5 mile of the proposed borehole locations.

YPC proposed several sources for their water needed to drill and develop the well. The water will either be trucked or piped via temporary surface lines to the well pad and stored in tanks and/or a pit to be used as needed. They propose that 40,000 bbls per well will be used for the drilling and development of the well. Refer to the MSUP for each proposed well; see AR.

The anticipated depths of the Fox Hills Formation are between 6,132 to 6,502 ft bgs for the 4 proposed wells. The operator will use centralizing stabilizers on each casing joint through the depths of the Fox Hills Formation to insure the cementing encapsulates the casing and seals the formation off from contamination. The cementing off of the formation will extend 50 feet above and below the formation. Surface casing will extend to depth of 2,000, 2,100, 2,350, and 2,400 feet below ground surface for the Groves Com 53H, Citrine Federal Com 1H, Lone Moose Federal Com 14H, and Combat Com 2H wells, respectively. YPC committed in the MSUP to abide to the state and federal regulations for the drilling and

production of the well, therefore, no direct or indirect adverse effects are anticipated. This will ensure that ground water will not be adversely impacted by well drilling and completion operations.

At the time of permitting, the volume of water that will be produced in association with these federal minerals is unknown. The operator will have to produce the wells for a time to be able to estimate the water production. In order to comply with the requirements of Onshore Oil and Gas Order #7, Disposal of Produced Water, the operator will submit a Sundry to the BLM within 90 days of first production which includes a representative water analysis as well as the proposal for water management.

The WOGCC monitor and regulate the chemicals for drilling and completion as well as Class II underground injection disposal. "BLM may rely on the actions of state regulators. The IBLA and federal courts recognized it is appropriate for BLM to assume a proposed action complies with state permitting requirements, and rely on state analysis when evaluating the significance of effects. *Wyo. Outdoor Council v. U.S. Army Corps of Eng'rs*, 351 F. Supp. 2d 1232, 1244 (D. Wyo. 2005); PRBRC, 180 IBLA 32, 57 (2010); *Bristlecone Alliance*, 179 IBLA 51, 74-77 (2010)." In *Wyoming Outdoor Council*, the District Court held the Corps may rely on the [state] permitting process to "ameliorate any concerns that impacts to water quality will be significant." *Id.*

During construction and subsequent production of these wells, YPC committed to stabilize the constructed area to reduce the risk of sediment transport due to erosion. This and complying with WDEQ Storm Water Pollution Prevention criteria will minimize impacts to surface water resources in the area.

Historically, the quality of water produced in association with conventional oil and gas has been such that surface discharge would not be possible without treatment. Initial water production is quite low in most cases. YPC proposed to dispose of the produced and flow back water to state permitted facilities by either deep re-injection (7,534-8,762 ft. bgs) or storage and evaporation in lined pits. Either alternative would be protective of groundwater resources when performed in compliance with state and federal regulations. The water will either be trucked or piped via underground water lines to the locations from the storage tanks and/or reserve pit near a well pad. For more information refer to the MSUP for each APD; see AR.

#### **4.4. Invasive Species**

BLM anticipates the proposals' direct, indirect, residual, and cumulative effects to invasive species will be materially similar to those found in the EAs: Antler, Sections 4.1.2; Starlight, p. 3; Verde, Section 4.1.4; and Wilkinson, Section 4.2.1.1.5 (all), incorporated here by reference. YPCs committed measures negate a need for additional BLM mitigation.

#### **4.5. Wildlife**

Construction of the 4 proposed wells will result in about 51 acres of habitat loss, mostly sagebrush shrublands. The environmental effects for wildlife are discussed in, and anticipated to be similar to those analyzed in the EAs in Annex 1, Table 3.2, which occur in similar habitats, and in most cases are in the same area as these 4 proposals. Additional site-specific information for raptors, migratory birds, GSG, and mountain plover are described below.

##### **4.5.1. Raptors**

Effects to raptors from surface disturbing and disruptive activities associated with development of horizontal oil wells were analyzed in the Sahara POD EA, WY-070-EA13-72, 2013, Section 4.6.2.1, pp. 28-31, and Section 4.7.4 pp. 38, incorporated here by reference. Activities associated with development of YPC's 4 wells here are anticipated to be similar, with the following additional site-specific analysis.

Lone Moose Federal Com 14H well

Increased traffic on the road associated with drilling and completion at the proposed Lone Moose Federal Com 14H well pad may impact eagles at nest #13410, if those activities occur during the nesting season. Yet due to the distances BLM anticipates impacts, if any, are within the PRB FEIS analysis parameters.

Groves Com 53H well

To reduce the risk of decreased productivity or nest failure, the BLM recommends a 0.5-mile radius timing limitation for surface disturbing and disruptive activities during the breeding season around active raptor nests. The nests may be far enough from the proposed well to mitigate impacts from human disturbance linked with well production; however, the disruptive activities associated with construction, drilling, and completion are likely to impact nesting hawks, though within parameters of the PRB FEIS. Any effects from not following the recommended mitigation measure will not rise to significance, though the possibility of a “take” which could result in a violation of the MBTA.

Citrine Federal Com 1H well

The disruptive activities associated with construction, drilling, and completion may impact burrowing owls occupying the prairie dog town due to its close proximity. BLM applied conditions preventing surface disturbance will eliminate disruptive activities during drilling and construction; however, increased traffic and human disruptions associated with completion may negatively impact burrowing owls, though within PRB FEIS parameters.

The Thunder Basin National Grasslands in Campbell County, WY, has a NEPA analysis recommending a 0.25 mile timing restriction buffer zone on surface disturbing activities for burrowing nests during their nesting season (April 15 to August 31). BLM will consider adopting this analysis since it concerns the same species in the same short grass – sagebrush prairie ecosystem. Instruction Memorandum No. 2006-197, directs the field offices to “use the least restrictive stipulations that effectively accomplish the resource objectives or uses.” Alteration of the general raptor nest timing limitation (Feb 1 to July 31) to a more specific burrowing owl nesting season timing limitation (April 15 to August 31) will effectively reduce the vulnerability of owls to collision while shortening the timing restriction period from six and one half months to four and one half months, and from 0.5 mile to 0.25 mile. To reduce the risk of decreased productivity or nest failure, the BLM applies a 0.25-mile radius timing limitation for surface disturbance during the breeding season (April 15 – August 31) around active burrowing owl nests. This timing limitation will protect nesting owls during the construction and drilling phases of the project; however; given the close proximity of the colony to the well pad, increased traffic and human disturbance associated with completion may negatively impact burrowing owls nesting in the prairie dog town, if those activities occur while an active nest is present. If completion activities cause an active nest to fail, it could constitute a violation of MBTA. In order to eliminate this risk, the BLM recommends that completion activities also occur outside of the breeding season. Implementation of the proposal is not anticipated to alter the suitability of the prairie dog colony for burrowing owls due to the presence of existing oil and gas wells, though they may select a nest site further from the new development.

The disruptive activities associated with construction, drilling, and hydraulic fracturing are likely to impact ferruginous hawks using the nests, though within the PRB FEIS analysis parameters.

Combat Com 2H well

Because of the close proximity and lack of visual (spatial / biological) barriers between the nests and the proposed well, the BLM recommended that YPC propose mitigation measures to reduce potential impacts to the nests from implementation of the project. The mix of federal and fee sub-surface minerals in the project area make it challenging to effectively mitigate impacts to the nests. While on the onsite, the BLM and YPC looked at an alternate location for the well, which would involve “flipping” the surface location to where the original down-hole location was proposed. BLM determined at the onsite that this option

was likely to be more detrimental to ferruginous hawks inhabiting the area, because the surface location would then be within 0.25 miles of other nests, and within a territory that is active in recent years. YPC contracted ICF to prepare a mitigation plan which included installation of 2 artificial nesting structures and application of timing limitations on surface disturbing and disruptive activities (see AR for the Combat Federal Com. #2H Oil Well Raptor Nest Mitigation Plan).

YPC proposed to construct an artificial nesting structure (ANS) about 0.5 miles from, and in the line of sight of, the proposed Combat 2H well. The ANS proposed location is over fee surface and fee minerals, which could make it vulnerable to future development where surface protections may not be enforced; however, it also provides a nesting structure that may be far enough away, that when combined with its elevation off the ground, could provide enough security to allow for nest success. YPC also proposed to install an ANS next to nest #13411, but out of the line of sight of the well and facilities on the pad (deeper into the draw), that is still over YPC's federal mineral lease where surface protections could be enforced. Constructing 2 ANSs for this project should increase the chances that any hawks returning to the area may find a suitable nest site that is further from the development or out of its line of sight.

YPC provided the following operator committed measures that will reduce the risk of decreased productivity or nest failure and improve understanding of ferruginous hawk activity in the area:

- YPC will not conduct surface disturbing activities during the ferruginous hawk breeding season (March 15 – July 31) within 1 mile of either platform.
- YPC will not conduct HF activities at the well location during the ferruginous hawk breeding season (March 15 – July 31).
- YPC will routinely maintain the platforms.
- YPC will monitor and report on all breeding activities at the platforms for 5 years following installation.

It is possible that Swainson's hawks or red-tailed hawks may return to the tree to rebuild the nest. To reduce the risk of decreased productivity or nest failure, the BLM recommends a 0.5-mile radius timing limitation for surface disturbing and disruptive activities during the breeding season around active raptor nests. Nest #11978 is likely to be far enough from the proposed well to mitigate impacts from human disturbance associated with production at the well. Even though impacts to active nests during the construction, drilling, and completion phases will be eliminated, the nests may occur in close enough proximity to the well that disruptive activities (increased traffic and human activities) associated with production and maintenance may negatively impact ferruginous hawks using the nests or ANSs.

#### **4.5.2. Migratory Birds**

BLM analyzed the effects to migratory birds from surface disturbing and disruptive activities associated with development of horizontal oil wells in the Sahara POD EA, WY-070-EA13-72, 2013, Section 4.6.2.2, pp. 31-33, and in the Bonita Federal Com 11H CX3, WY-070-390CX3-13-41, incorporated here by reference. Activities associated with development of YPCs' 4 wells are anticipated to be similar in nature, with the following additional site-specific information.

Habitat disturbance and disruptive activities (i.e. drilling, construction, completion, operations, and maintenance) resulting from implementation of the wells listed in Table 1.1 is likely to affect migratory birds. Native habitats will be lost directly with the construction of well pads, access roads, and power lines. Surface disturbing activities that occur in the nesting season may kill migratory birds. Prompt re-vegetation of short-term disturbance areas should reduce habitat loss impacts. Pad construction, drilling, and to a lesser degree production, will displace edge-sensitive migratory birds from otherwise suitable habitat adjacent to the well pads. Construction of the Lone Moose Federal Com 14H, Citrine Federal Com

1H, and Combat Com 2H well pads and associated infrastructure will remove sagebrush habitat and could result in a “take” of BLM sensitive migratory birds if removal occurs during the nesting season.

Surface disturbing activities associated with the Citrine Federal Com 1H well will have GSG and burrowing owl timing limitations applied, thereby providing protection to migratory birds until June 30, or until August 31, if an active burrowing owl nest is present. The Combat Com 2H well will have timing limitations for raptors applied, protecting migratory passerines only if an active nest is present. The Lone Moose Federal Com 14 H well will not have GSG or raptor timing limitations applied, leaving migratory birds vulnerable to impacts from surface disturbing activities.

To reduce the likelihood of a “take” under the MBTA, the BLM recommends that pad construction (vegetation removal) occur outside of the breeding season for the greatest quantity of BLM sensitive migratory birds (May 1- July 31) where suitable nesting habitat for sagebrush obligates is present. The timing limitation would apply to habitat removal, unless a pre-construction clearance survey (within 10 days of construction planned May 1-July 31) is completed. If surveys will be conducted, the operator will coordinate with BLM to determine a protocol. At a minimum, the surveys will consist of nest searches in areas where vegetation will be removed or destroyed. The BLM recommends the following well pads and associated infrastructure have timing limitations applied for well pad construction during the nesting season for sagebrush obligate passerines (May 1 to July 31): Lone Moose Federal Com 14H, Citrine Federal Com 1H, and Combat Com 2H. Timing limitations for other species may provide additional protection where migratory bird nesting periods and habitats overlap.

YPC proposes using heater treaters in the production phase of the wells. Heater treaters, and similar facilities with vertical open-topped stacks or pipes, can attract birds. Facilities without exclusionary devices pose a mortality risk. The BLM recommends that measures are taken to ensure that migratory birds are excluded from all facilities that pose a mortality risk, including, but not limited to, heater treaters, flare stacks, secondary containment, and standing water or chemicals where escape may be difficult or hydrocarbons or toxic substances are present at the following wells: Lone Moose Federal Com 14H, Groves Com 53H, Citrine Federal Com 1H, and Combat Com 2H.

If the timing limitation on habitat removal is applied, it is unlikely that active nests (of BLM sensitive species) will be destroyed, as most nestlings will have fledged by the beginning of August. Nests initiated after the first week in July may be destroyed by construction after August 1st. Ground nesting birds using grassland habitats in the Groves Com 53H proposed disturbance area may have nests or young destroyed if construction occurs during the nesting season; BLM sensitive migratory bird species are not anticipated to nest in the proposed disturbance areas for this well. Migratory birds nesting adjacent to the well pad or road may be displaced, abandon nests, or suffer reduced reproductive success due to 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.

#### **4.5.3. Wildlife Threatened, Endangered, Proposed and Candidate Species**

##### **4.5.3.1. Greater Sage-Grouse (GSG)**

Effects to GSG from surface disturbing and disruptive activities associated with development of horizontal oil wells were analyzed in the Sahara POD EA, WY-070-EA13-72, 2013, Section 4.6.4.1, pp. 34-37, incorporated here by reference. Activities associated with development of Yates’ 4 wells listed in Table 1.1 are anticipated to be similar in nature, with the following additional site-specific information.

##### Citrine Federal Com 1H well

Construction of the well pad and access road will result in the removal of approximately 10.5 acres sagebrush habitat. Construction, drilling, and hydraulic fracturing activities are anticipated to negatively

impact GSG nesting in suitable habitat in the project area. To decrease the likelihood that GSG will avoid the project area, and increase habitat quality by reducing noise and human activities during the breeding season, the BLM applies a 2 mile timing limitation for surface disturbance (construction and drilling) during the breeding season (March 15-June 30). Increased traffic and human disturbance associated with well completion are also likely to negatively impact nesting GSG, and the BLM recommends that completion activities also occur outside of the breeding season.

**4.5.4. Special Status (Sensitive) Species (SSS)**

Effects to SSS (aside from some passerines discussed under migratory birds) are described in Table 1 in the administrative record. Additional information is discussed below.

*Mountain Plover*

Effects to mountain plover from surface disturbing and disruptive activities associated with development of horizontal oil wells were analyzed in the Sahara POD EA, WY-070-EA13-72, 2013, Section 4.7.6, pp. 38, incorporated here by reference. Activities associated with development of YPC’s 4 wells are anticipated to be similar in nature, with the following additional site-specific information.

Citrine Federal Com 1H well

The BLM applies a 0.25 mile timing limitation on all surface disturbing activities for potential nesting habitat during the nesting season to reduce impacts to nesting mountain plovers. Increased traffic and human disturbance associated with hydraulic fracturing are also likely to negatively impact nesting mountain plovers, and the BLM biologist recommends that completion activities also occur outside of the breeding season. Additional mitigation measures may be applied, as appropriate, from the PRB Final Biological Opinion (Appendix K, pp. 45-47) in order to minimize impacts to nesting plovers.

**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 proposals. 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 December 11, 2013, 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).

BLM used the aggregate effects method in updating the cumulative effects for this EA; see Table 3.1. Any and all foreseeable effects from not following the recommended mitigation measures will not rise to significance, though such omission(s) may cause a minor increase in erosion, runoff, or other impacts.

**5. List of Preparers: Persons and Agencies Consulted (BFO unless otherwise noted)**

<b>Position/Organization</b>	<b>Name</b>	<b>Position/Organization</b>	<b>Name</b>
NRS/Team Lead	Dan Sellers	Archaeologist	Ardeth Hahn
Supr NRS	Casey Freise	Wildlife Biologist	Darci Stafford
Petroleum Engineer	Will Robbie, M. Thomason	Geologist	Warren Garrett, Kerry Aggen
LIE	Lois Jenkins	Supr NRS	Bill Ostheimer
Assistant Field Manager	Clark Bennett	Assistant Field Manager	Chris Durham
NEPA Coordinator	John Kelley	Wyoming SHPO	Mary Hopkins
Hydrologist	Keith Anderson	Legal Assistant	Connie Modzelewski

## **6. References and Authorities**

Adgate, J.L., Goldstein, B.D., and McKenzie, L.M., Potential Public Health Hazards, Exposures and Health Effects from Unconventional Natural Gas Development, Environ, Sci. and Tech., Am. Chem. Soc., 2014.  
BLM incorporates by reference here the references from the Porsche 3H & 4H EA, pp. 29-33.

**Annex 1. Tables and Map.**

**Table 3.1. Overlapping NEPA Analyses Which BLM Incorporates by Reference either as similar drilling analyses or as substantially similar analyses in the semi-arid sage-brush, short grass prairie; see Map 1, below.**

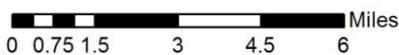
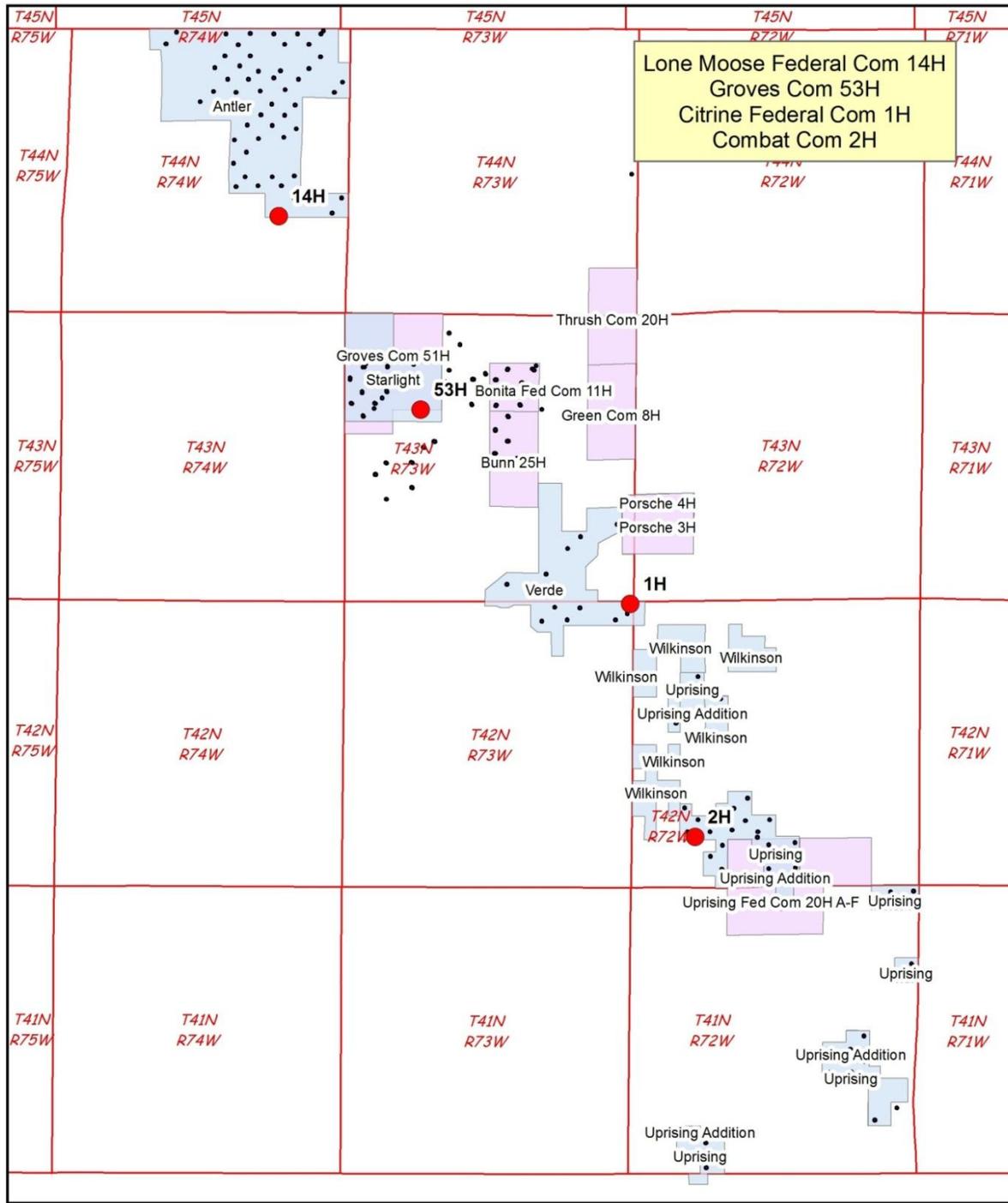
#	POD / Project Name	NEPA Analysis	# Type Wells	Approved Mo/Yr/Update
1	Coleman Wilkinson	WY-070-EA11-34	28 CBNG	3/2011; 11/2010
2	YPC Uprising & Addition	WY-070-EA05-089 WY-070-EA04-305	6 water 43 CBNG	5/2012 9/2004, 3 & 11/2011
3	YPC Verde	WY-070-EA08-177	11 CBNG	9/2012; 9/2008
4	YPC Starlight	WY-070-02-210	18 CBNG	8/2002
5	YPC Porsche 3H & 4H	WY-070-EA14-085	2 Oil	2/2014
6	YPC Seven Wright Area Wells	WY-070-390CX3-13-46 etc.	7 Oil	6/2013
	YPC Bonita Fed Com 11H, etc.	WY-070-390CX3-13-41 etc.	4 Oil	3/2013
	YPC Groves Com. 51H etc.	WY-070-390CX3-12-253	3 Oil	10/2012
7	YPC Antler	WY-070-05-153 & -393	2 CBNG	9/2012
		WY-070-EA04-63	50 CBNG	3/2005 8/2004

See also: SDR WY-2013-005, particularly noting pp. 2-3, incorporating the entirety here by reference.

**Table 3.2. NEPA Analyses, Incorporated by Reference Here, for Wildlife Analysis**

Project Name	NEPA Number	Within 5 miles of the Project Area
Arbalest-Crossbow	WY-070-EA10-238	Yes
Bonita Federal Com 11H	WY-070-390CX3-13-41	Yes
Lone Moose Federal Com 13H	WY-070-390CX3-13-73	Yes
Leavitt Federal POD	WY-070-08-170	Yes
Project 808	WY-070-EA11-284	Yes
Quill Fed Com 5H	WY-070-EA-13-3	Yes
Raging Bull Com 2H	WY-070-EA12-207	Yes
Rocky Butte Federal Com 29H	WY-070-390CX3-13-75	Yes
Sahara POD	WY-070-EA13-72	No
Sunrise Federal 36H	WY-070-390CX3-13-40	Yes
Valerie POD	WY-070-EA12-68	Yes
Verde POD	WY-070-08-177	Yes
Wilkinson POD	WY-070-EA11-34	Yes

**Map 1. Orientation of the 4 Proposed Wells to Selected Plans of Development (PODs) and Wells That This EA Incorporates by Reference.** (BLM omitted over a thousand wells and dozens of PODs to clarify Map 1.)



- Proposed Wells
- Approved AFMSS Wells
- Approved CBM POD Boundaries
- Approved Conventional Well Boundaries

Map generated on: March 17, 2014  
AFMSS well data current through: March 10, 2014