DECISION RECORD
Section 390, Energy Policy Act of 2005
Categorical Exclusion 3 (CX3), WY-070-390CX3-13-266
Yates Petroleum Corporation, Application for Permit to Drill (APD), Skyward Federal #18H
Bureau of Land Management, Buffalo Field Office, Wyoming

DECISION. The BLM approves the application for permit to drill (APD) from Yates Petroleum Corporation (Yates) to drill 1 horizontal oil and gas well and construct associated infrastructure as described in the CX3, WY-070-390CX3-13-266, incorporated here by reference.

Compliance. This decision complies with or supports:
- 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 and Powder River Basin Final Environmental Impact Statement (FEISs), 1985, 2003 (2011).
- Buffalo Resource Management Plan (RMP) 1985, Amendments 2001, 2003, 2011.

A summary of the details of the approval follows. The CX analysis, WY-070-390CX3-13-266, for the 1 oil and gas well, above, includes the project description, including site-specific mitigation measures which are incorporated by reference into that worksheet from earlier analysis. The proposed well is 25 miles east of Buffalo, in Johnson County, Wyoming. This Yates well proposal has 1 APD and associated infrastructure, to develop and produce oil and gas from the Shannon Formation. The well is a horizontal bore proposed on a 640 acre spacing pattern with 1 well on location.

Approvals: BLM approves the following APD and associated infrastructure:

Well Name & #	Qtr	Sec	Twp	Rng	Surface Lease
Skyward Federal #18H	NENW	32	50N	78W	WYW0312434

Limitations. See conditions of approval (COAs).

THE FINDING OF NO SIGNIFICANT IMPACT (FONSI). Congress, the Department of Interior and BLM affirmed there was no significant impact of a like-structured project when they created this CX3 analysis process and its limiting parameters. NEPA analyses to which this CX3 tiers received a FONSI, thus a new FONSI or EIS are not required.

Summary of New Information. BLM posted this APD for 30 days and received no public comments. Since receipt of this APD, BFO received updated policies on Greater Sage-Grouse (GSG), NEPA, minimizing direct wildlife mortality, and migratory bird conservation.

DECISION RATIONALE. The approval of this project is because:
1. Mitigation measures and COAs, analyzed in the CX3, in environmental impact statements, or environmental analysis to which the CX3 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. The PRB FEIS analyzed and predicted that the PRB oil and gas development would have significant impacts to the region's GSG population. The impact of this development cumulatively contributes to the potential for local 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. There are no conflicts anticipated or demonstrated with current uses in the area. This decision approving this APD complies with the Energy Policy Act of 2005, Section 390, 43 CFR 1610.5, 40 CFR 1508.4, and 43 CFR 46.215.

3. To reduce the likelihood of a "take" under the Migratory Bird Treaty Act, BLM sensitive species nesting habitat removal will occur outside of the breeding season or be cleared by survey.
4. 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). This project complies with the breadth and constraints of CX3, Energy Policy Act of 2005, and subsequent policy.
5. The selected alternative will help meet the nation's energy need, revenues, and stimulate local economies by maintaining workforces.
6. The operator, in their APD, 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 POD (PRB FEIS ROD, p. 7).
   - Provide water analysis from a designated reference well in each coal zone.
7. The project is clearly lacking in wilderness characteristics because it is amidst mineral development.
8. This decision does not foreclose the lessee or operator to propose a new or supplementary plan for developing the federal oil and gas lease(s) in this project area, including submission of additional APDs to drain minerals in accord with lease rights and law. This decision does not foreclose the lessee or operator to propose using external pumping units via a sundry application process.
9. The operator certified there is a surface use access agreement with the landowners it posted a bond.
10. 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 APD.

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: _____ Date: 1/7/14

Categorical Exclusion 3 (CX3), WY-070-390CX3-13-266
Application for Permit to Drill (APD) Skyward Federal #18H
Yates Petroleum Corporation
Section 390, Energy Policy Act of 2005
Bureau of Land Management, Buffalo Field Office, Wyoming

Description of the Proposal. Yates Petroleum Corporation (Yates) proposes to drill 1 conventional oil and gas well on 1well pad and construct associated infrastructure as follows:

Table 1.1. Proposed Well

Well Name/ Well #	Qtr	Sec	Twp	Rng	Surface Lease
Skyward Federal #18H	NENW	32	50N	78W	WYW0312434

The proposal is to explore by drilling for, and possibly develop, oil reserves in geologic mineral formations leased by Yates using standard split jurisdiction rules. The proposed location is 25 miles east of Buffalo, Wyoming, in Johnson County. The proposed well will be on a single well pad. BLM's need for this project is to determine how and under what conditions to balance natural resource conservation with allowing the operator to exercise conditional lease rights to develop fluid minerals by drilling 1 horizontal well. The proposed Skyward Federal 18H's surface hole location is on federal lease WYW0312434, as described in the APD's, surface use plan, and drilling plan - all incorporated here by reference. The fluid mineral leasing programs fall under the authority of the Mineral Leasing Act of 1920, the Federal Land Policy Management Act (FLPMA), and other laws and regulations.

Reasonably foreseeable activity is found in the Crown Prospect Federal 41-28-4978SHEH Environmental Assessment (EA), WY-070-EA13-25, 2012. This locality includes but is not limited to the approved Crown Prospect Federal 41-28-4978SHEH well and will fill-in to 640 acre spacing. This also supports the development anticipated in the Powder River Basin Final Environmental Impact Statement (PRB FEIS), 2003 (2011) (see narrative in Section 2, No Action Alternative).

The project area is in the PRB geographic area (Wyoming Geographic Landforms Map). Topography is moderately rough terrain characterized by moderately incised to rugged arroyos along ephemeral dendritic drainages. The landform is a combination of bedrock residuum and slope wash deposits. The Powder River is 6 miles east of the proposal.

Yates submitted the APD for the well to the BLM on July 16, 2013. Onsites field inspections were conducted August 7 and November 21, 2013. The onsites evaluated the proposal and BLM made recommendations to modify the surface use plan of operations (SUPO) to avoid and/or mitigate environmental impacts. On August 23, 2013, BLM sent post onsite deficiencies to Yates notifying them of Onshore Oil and Gas Order No. 1 deficiencies. BLM received revisions from Yates on multiple dates: October 17 and 31, and December 5, 2013. See Table 1.2, below, for APD processing information.

Table 1.2. APD Submission and Processing Dates

Well Name & #	APD Receipt	APD Onsite	Deficiencies sent	Revisions received
Skyward Federal #18H	8/7/2013	8/7/2013 11/21/2013	8/23/2013	10/17 & 31/2013 12/5/2013

Full effects of the action and recommended mitigation measures are in the Skyward Federal #18H SUPO, Crown Prospect Federal 41-28-4978SHEH Environmental Assessment (EA), WY-070-EA13-25, and BLM Conditions of Approval (COAs) for Conventional APD. BLM approved the Flying Federal #26H

oil well in 2012, which is 600 feet east of the proposed Skyward Federal #18H well. The access route and buried infrastructure approved for the Flying Federal #26H will be used to service the Skyward Federal #18H but the wells are on separate well pads. Environmental effects associated with the Flying Federal #26H were disclosed in the Section 390 CX3, WY-070-390CX3-13-43, incorporated here by reference.

Drilling, Construction, and Production design features include:

- Construction of the drilling pads with dimensions of approximately 400 feet by 400 feet; the total disturbance area varies between locations due to slope and topography, i.e. cut & fill slopes
- Yates anticipates starting drilling as soon as possible upon permit approval. Approximately 60 days are needed for drilling and 90 days for completion. Drilling and construction is year-round in the region. Weather may cause delays but delays rarely last multiple weeks. Timing limitations agreements with surface owners may impose longer temporal restrictions.
- A road network of approximately 8.9 miles of existing improved roads and another 1,406 feet of new construction of crown and ditch road as access onto the well pad. Upgrades by widening road to 16 feet running surface and adding turnouts (150 feet long by 10 feet wide) every 1,000 feet or intervisible will be made to improve overall safety and match Yate's anticipated use for larger trucks and increased traffic. Estimated average daily traffic (ADT) on existing and improved roads during production activities is two trucks per day. During construction and drilling phases, ADT will include rig and ancillary equipment mobilization, drilling water and completion water hauling, and delivery of large production facility equipment such as 500 barrel fluid storage tanks, etc.
- There is existing 3-phase overhead power in the project area.
- The operator proposes to drill wells using water-based mud (WBM).
- If determined to be economically viable, the well would be put into production. Production facilities that would be placed on the site include a pumping unit; separator; vertical heater-treater with separator; 5 500-bbl production tanks, 1 - 500-bbl produced water tank, gas meter buildings and an electric meter building. A generator will be set on location to power production facilities until permanent power is installed.
- There are 270 feet of buried gas pipeline and 190 feet of buried electrical powerline proposed.
- Production produced water will be stored in 1 produced water tank. This tank will be emptied as needed using water tanker trucks. Produced water will be disposed at one of 9 Permitted facilities listed below, authorized by WY Department of Environmental Quality (WYDEQ) unless noted.
    1. Groves COM No. 42 water disposal well located SENW Section 8, T43N/R73W and operated by Yates as authorized by WOGCC.
    2. Holler 1-11 water injection well (Permit No. 08-029) located NWSE, Section 11, T52N/R72W and operated by Jess & Carol Gray, LLC.
    3. Holler 1-11 SWD Pit) Permit No. 11-308) located NWSE, Section 11, T52N/R72W and operated by Jess & Carol Gray, LLC.
    4. Pumpkin Buttes Commercial Oil and Gas Produced Water Disposal Facility (Permit No. 10-461) (location not identified).
    5. Horse Creek #1-8 water disposal well (Permit No. UIC-01-337) located NWNE Section 8, T47N/R68W and operated by Kissack Water and Oil Services, Inc.
    6. 31-25 water disposal well (Permit UIC 01-109) located NWNE Section 25, T51N/R70W and operated by Kissack Water and Oil Services, Inc.
    7. Federal Jessen #1-5N water disposal well (permit No. UIC 02-103) located SWSE Section 5, T47N/R68W and operated by Kissack Water and Oil Services, Inc.
    8. Riehle #11 (Permit No. 10-033) located NWSE Section 7, T37N/R69W and operated by Matricx Oilfield Services, LLC.
    9. North Bill Disposal Commercial Oilfield Wastewater evaporation Pond located NWSE Section 1, T38N/R71W and operated by North Bill Disposal LLC.
- It is anticipated that 40,000 bbls of water will be needed for drilling and completion operations. The fresh water for drilling operations will be trucked from multiple sources; see page 3 of the Surface

Use Plan of Operations (SUPO) the for listed water sources.
- For completion (hydraulic fracturing) phase, the operator intends use above ground tanks for onsite water storage at the pad. The above-ground tanks do not require a separate location or additional disturbance.
- The entire well pad location will be fenced during drilling and completion operations so as to effectively keep out wildlife, livestock, unauthorized personnel, and unauthorized vehicle access.
- If the well is not found to be economically viable, all areas disturbed during construction would be reclaimed to approximate pre-disturbance condition, and the well bore would be plugged per State of Wyoming and BLM policy and regulations.

For a detailed description of design features and construction practices for the proposal, refer to the SUPO and drilling plans included with the APD; see administrative record (AR). Also, see the APD for maps showing the proposed well location and associated facilities described above. Table 1.3 below shows the total surface disturbance for the proposal is 14.6 acres, reduced to 8.5 acres of long term disturbance after interim reclamation of the well site and roads for a 42% reduction. BLM incorporated and analyzed the implementation of committed mitigation measures in the SUPO and drilling plan, in addition to the COAs in the PRB FEIS ROD, as well as changes made at the onsite.

Table 1.3. Skyward Federal #18H Surface Disturbance

Facility	Construction Disturbance (Short Term)	Interim Disturbance (Long Term)
Number of Horizontal Wells	1	1
Engineered Pads (co-located)	6 acres	3.2 acres
New Template Roads	470 feet (0.6 acres)	(0.3acres)
Engineered Access Roads	1,056 feet (1.1 acres)	(1.0 acres)
Reconstruction of Existing Roads (Widen to 16 feet and add Turnouts)	5,850 feet (6.7 acres)	(4.0 acres)
Buried Gas Pipeline/Electrical Powerline (not with assess road)	150 feet (0.2 acres)	(0 acres)
Overhead Power	Existing	Existing
Total Acre Disturbance	**14.6 Acres**	**8.5 Acres**

Plan Conformance, Compliance, and Justification with the Energy Policy Act of 2005

The Energy Policy Act of 2005, Section 390(a) subjects oil or gas exploration or development to a rebuttable presumption that the use of a categorical exclusion under the National Environmental Policy Act (NEPA) applies. Thus BLM must use an Energy Policy Act, Section 390(b), CX unless BLM rebuts the presumption. This CX3 analysis is NEPA compliance categorically excluded from an EA or EIS or their analysis; it is not an exclusion from all analysis. (40 CFR 1508.4 and BLM H-1790, p. 17.) The proposal conforms to the terms and conditions of the Approved Resource Management Plan (RMP) for the public lands administered by the BLM, BFO, 1985, the PRB FEIS, 2003 (2011), and the Record of Decision (ROD) and Resource Management Amendments for the Powder River Oil and Gas Project, Amendments of 2001, 2011 as required by 43 CFR 1610.5, 40 CFR 1508.4, and 43 CFR 46.215. The Skyward Fed 18H APD and area clearly lack wilderness characteristics as they are amidst oil and gas development. BLM finds that the conditions and environmental effects found in the senior EAs and PRB FEIS remain valid. The applicable categorical exclusion from the Energy Policy Act of 2005, Section 390, is exclusion number (b)(3) which is *drilling an oil or gas well within a developed field for which an approved land use plan or any environmental document prepared pursuant to NEPA analyzed such drilling as a reasonably foreseeable activity, so long as such plan or document was approved within 5 years prior to the date of spudding the well.*

BLM has 3 requirements to use a Section 390 CX3, (BLM H-1790, Appendix 2, #3, p. 143):

1) The proposed APD is in a developed oil or gas field (any field with a completed confirmation well).

Table 1.4. is a list of existing/approved oil and gas development that is within or adjacent to the Skyward Federal #18H project area. This information shows the reader that BLM conducted analysis.

Table 1.4. Oil & Gas NEPA Analyses Adjacent to, Overlapping & Incorporated by Reference

NEPA Analysis Name	NEPA Analysis #	# Wells	Decision Date
Sahara POD	WY-070-EA13-72	21 Oil	03/05/2013
Crown Prospect Federal 41-28-4978SHEH	WY-070-EA13-25	1 Oil	12/28/2013
Federal 21-10SH-4978SH	WY-070-390CX1-12-088	1 Oil	09/25/2012
Federal 23-4SH-4978SH	WY-070-390CX1-12-088	1 Oil	09/25/2012
Barlow Ranch Federal 074974-3NH	WY-070-EA12-173	1 Oil	08/10/2012
Mufasa Fed 11-31H	WY-070-EA12-062	1 Oil	04/20/2012
Wardner Ranch 24-23-4978SH	WY-070-390CX1-12-034	1 Oil	11/15/2011
Wardner Ranch 44-22-4978SH	WY-070-390CX1-12-034	1 Oil	11/15/2011
Aerial POD	WY-070-EA06-170	CBNG	05/08/2006
Juniper Draw Kestrel POD	WY-070-EA06-323	22 CBNG	09/29/2006
Juniper Draw Merlin POD	WY-070-EA05-262	13 CBNG	09/02/2005
Nemesis POD	WY-070-EA05-157	43 CBNG	09/13/2005
Skyward POD	WY-070-EA05-187	32 CBNG	09/23/2005
Juniper Draw Addition POD	WY-070-EA-04-087	16 CBNG	05/05/2004
Federal W-67912 15-15(aka USA 15-15)	WY-3109/82-439-P	1 Oil	03/03/1982
Powder River Basin FEIS & Records of Decision	WY-070-02-065 WY-080-135		2003 2011

The area had historic conventional oil and gas exploration and production, and recent coalbed natural gas (CBNG) development. The project area is adjacent to or inside the boundaries of 6 CBNG plans of development (PODs) that include 137 wells; see Table 1.4.). There are 388 existing oil and gas wells within a 4 mile radius of the area for this proposal (Wyoming Oil and Gas Conservation Commission, November 19, 2013); 22 of which are plugged and abandoned.

There is an existing NEPA document (and the RMP) containing reasonably foreseeable development scenario for this action. There are several existing NEPA documents that reasonably foresaw activity to spud additional wells to fill in 80 acre well-spacing. BLM reviewed these documents and determined they considered the potential environmental effects associated with the proposed activity at a site specific level. In addition, all approved EAs tier into the PRB FEIS, 2003 (2011).

2) The PRB FEIS analyzed foreseeable development in the PRB. The PRB foreseeable development included 3,200 oil wells. The spacing unit dedicated to this 1 well is 640 acres. The Skyward Federal #18H well is in the foreseeable activity scenario analyzed in EAs in Table 1.4 and in the PRB FEIS's foreseeable development in its Appendix A.

Table 1.5. NEPA Analyses Accounting for Reasonably Foreseeable Activity Scenario

#	POD Name	NEPA Document	Wells	Decision Date
1	Crown Prospect Federal 41-28-4978SHEH	WY-070-EA13-25	1 Oil	12/28/2013
2	Barlow Ranch Federal 074974-3NH	WY-070-EA12-173	1 Oil	08/10/2012

3) The tiered NEPA document was finalized or supplemented within 5 years of spudding (drilling) the proposed well.

The Skyward Federal #18H Section 390 CX3s tiers to the EAs listed in Tables 1.4, 1.5, and 1.6.

Table 1.6. NEPA Document Finalized Within Anticipated Spud Date of Skyward Federal #18H

#	POD Name	NEPA Document	Wells	Decision Date
1	Crown Prospect Federal 41-28-4978SHEH	WY-070-EA13-25	1 Oil	12/28/2013

In summary, the EAs in Tables 1.4. 1.5, and 1.6 analyzed in detail the anticipated direct, indirect, residual, and cumulative effects that would result from the approval of this APD and associated support structure in Skyward Federal #18H well is similar to both the qualitative and quantitative analysis in the above mentioned EAs. The BFO reviewed the EA and found that the EA considered potential environmental effects associated with the proposal at a site specific level. The APD's surface use and drilling plans are incorporated here by reference and show adequate protection of surface lands and ground water, including the Fox Hills formation. The proposals' acres of surface disturbances are within the analysis parameters of the PRB FEIS.

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 CX3 analysis also incorporates and analyzes the implementation of committed mitigation measures contained in the SUPO, drilling plan, in addition to the Standard COAs found in the PRB FEIS ROD, Appendix A.

ADT will increase with approval of the wells. Yates did not supply specific information related to traffic in the surface use plan, therefore BLM has made assumptions based on operations conducted by other operations on similar projects. Mobilizing the drilling rig and associated equipment requires 50 or more truckloads. The Operator did not estimate what the ADT would be but BLM anticipates 2-10 vehicle trips per day during drilling operations. The other anticipated impact associated with HF involves the large amount of heavy truck traffic (200-700 trucks/well) to transport water storage containers, water and other HF materials to the location as well as truck traffic anticipated for removing the storage tanks and flow-back fluid from the HF. The operator's surface use plan does not provide specific information of the HF operations but BLM anticipates the process to be a 24 hour operation lasting approximately 2-weeks. During the production phase of the well, heavy trucks are expected to visit the well every 1 to 2 days to haul oil or water from the location, in addition to pumper traffic from equipment inspections.

Soils and Vegetation

The soil and ecological site descriptions prepared by the Natural Resources Conservation Service (NRCS, 2013) for the project area show it as 100% Loamy soil in the 10-14 inch Northern Precipitation Zone. The interpretive vegetative plant community is a mixed sagebrush/grass plant community. BLM reviewed detailed soil, ecological site and vegetative community descriptions of the project area prepared by NRCS. The map unit that makes up the majority of the proposed disturbance area (94%) also holds the soil with most limiting chemical and physical soil properties: Theedle-Kishona-Shingle loams, 3 to 30% slopes. The map unit that makes up the minority soil type: Theedle-Shingle loams, 3 to 30% slopes. These soils are rated as poor topsoil sources but are a fair source of reclamation source material. Topsoil depth ranges from 0 to 60 inches with an organic content of 0 to 2%. The soil is sodic below 32 inches which makes soil mixing a concern. The soil components of greatest concern the lack of organic matter, droughty, depth to bedrock, and high erosion potential. About 80% (up to 21,270 cubic yards) of the

material excavated to build the well pad is material from the Cr soil horizon. In its current undisturbed state, the sterile Cr material is isolated from the surface by 32 to 60 inches of overlying soil horizons.

Resistance to degradation is typically described as an area's buffering capacity. This depends upon soil type, vegetation, climate, land use, disturbance regime, temporal and spatial scales. The disturbance regime determines the type of stresses placed upon the soil, vegetation, and wildlife components of the site. Thus, soil factors of vulnerability will vary based upon the disturbance regime for a particular site. NRCS soil survey rates the soils as "moderately susceptible" to degradation indicating that the soils have features that are moderately favorable for damage to occur. These soils are also rated as a poor source of construction material.

Once the soils at the well site are inverted from well pad and road construction there is the potential that the surface soil properties could be degraded by the subsoil. The subsoil material dominated has severe erosion potential that will require disturbed areas to be stabilized to avoid contamination of topsoil. Likewise, stockpiled topsoil stabilization measure (stabilization efforts may include mulching, matting, soil amendments, etc.) in a manner which eliminates accelerated erosion until a self-perpetuating native plant community has stabilized the site in accordance with the Wyoming Reclamation Policy. Stabilization efforts will be completed within 30 days of the initiation of construction activities.

Well Pad

The well sites to facilitate horizontal well drilling and HF operations require a constructed well pad including cut and fill slopes which may be large in scale compared to typical CBNG well locations depending on site topography. Yates' proposed well pad is 400 by 400 foot working area. Total disturbance area for each pad varies dependent upon topography, slope, and dirt balance. Additional information on the impacts to soil resources, and its influence on cumulative effects from energy development is found in the affected environment and environmental effects sections (Section 3.2 and 4.4) of the Barlow Ranch Federal 074974-3NH, WY-070-EA12-173, incorporated here by reference.

Typical industry practice of a combination of horizontal drilling and HF allows for greater well bore to oil production zone contact and thereby reduces the number of surface locations need to effectively recover the fluid mineral resource. Initial pad size is reduced through interim reclamation if the wells produce. If the wells are unsuccessful, then reclamation accounts for the entire surface disturbance.

Anticipated impacts occurring include soil rutting and mixing, compaction, increased erosion potential, and loss of soil productivity. The most notable impacts would occur in association with the construction of well pads and roads. Construction of these facilities requires grading and leveling, with the greatest level of effort required on more steeply sloping areas. Construction activities mix the soil profiles with a corresponding loss of soil structure. Mixing may result in removal, dilution, or relocation of organic matter and nutrients to depths where it would be unavailable for vegetative use. Less desirable inorganic compounds such as carbonates, salts, or weathered materials could be relocated and have a negative impact on revegetation.

Rutting affects the surface hydrology of a site as well as the rooting environment. The process of rutting physically severs roots, thus reducing soil aeration and infiltration thereby degrading the rooting environment. Rutting may result in topsoil and subsoil mixing, thereby reducing soil productivity. Rutting also disrupts natural surface water hydrology by diverting and concentrating water flow thus accelerating erosion. Soil mixing typically results in a decrease in soil fertility and a disruption of soil structure.

Soil compaction results from the construction of wells and associated facilities, continued vehicle and heavy equipment traffic during operational activities. Factors affecting compaction include soil texture, moisture, organic matter, clay content and type, pressure exerted, and the number of passes by vehicle

traffic or machinery. Compaction leads to a loss of soil structure; decreased infiltration, permeability, and soil aeration; as well as increased runoff and erosion.

Soil productivity would decrease, primarily as a result of profile mixing and compaction along with the loss in vegetative cover. 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. An important component of soils in Wyoming's semiarid rangelands, especially in the Wyoming big sagebrush/grassland cover type, are biological soil crusts, or cryptogamic[1] soils that occupy ground area not covered with vascular plants. Biological soil crusts are important in maintaining soil stability, controlling erosion, fixing nitrogen, providing nutrients to vascular plants, increasing precipitation infiltration rates, and providing suitable seed beds (Belnap et al. 2001). They are adapted to growing in severe climates; however, they take many years to develop (20 to 100) and can be easily damaged or destroyed by surface disturbances associated with construction activities. These impacts, singly or in combination, could increase the potential for valuable soil loss, reduction in soil quality, invasive/noxious/poisonous plant spread, invasion and establishment, and increased sedimentation and salt loads to the watershed system, if applicable mitigation measures are not used.

To minimize the impacts to the soil resources and to promote successful reclamation consistent with the Wyoming BLM Reclamation Policy, BLM will require that interim reclamation be implemented as soon as is practicable. Re-contouring and interim reclamation will be initiated as soon as is practicable but not more than 6 months from the date of the well completion incorporating stored soil material into that portion of the well pad not needed for well production. The entire project area is dominated by soils that have been identified to have severe erosion potential that will require disturbed areas to be stabilized (stabilization efforts may include mulching, matting, soil amendments, etc.) in a manner which eliminates accelerated erosion until a self-perpetuating native plant community has stabilized the site in accordance with the Wyoming Reclamation Policy. Stabilization efforts shall be finished within 30 days of the initiation of construction activities.

Open Reserve Pit versus Closed Loop Drilling System

It is the Yates' intent to drill the Skyward Federal #18H using an open reserve pit excavated on location. Drilling fluid and drill cuttings would be caught and disposed of on location in the reserve pit 100 by 150 feet and 12 feet deep. Yates' SUPO for the APD and associated well pad diagrams included plans for managing drilling fluid. Following drilling operations, pits will be allowed to dry sufficiently prior to back filling and will be closed as soon as possible.

The material excavated from the reserve pits is calculated to be approximately 4,810 cubic yards of spoil material (substratum not soil) that will need to be stored on the surface until the pit is closed. Cuttings contained in the pit will total approximately 1,120 cubic yards and in addition to 19,300 barrels of drilling fluid. Once the pits are sufficiently dried, they will be backfilled with the spoil material however the volume of cuttings captured in the pits will displace spoil material from being returned into the excavated pit. An alternate option for managing drilling mud and BLM's preference would be using a closed loop system. This alternative is consistent with Wyoming BLM's Instruction Memorandum No. WY-2012-007, 2011, incorporated here by reference. BLM recommended this option to Yates but the Operator chose not to pursue it. Use of enclosed tanks and closed loop or semi-closed loop systems is environmentally preferable to the use of open pits and is encouraged by the BLM.

Open production pits are strongly discouraged by BLM. Closed tanks and systems minimize waste, entry by wildlife, fugitive emissions that affect air quality, and reduce the risk of soil and groundwater contamination. In addition, the use of tanks instead of pits expedites the ability to complete interim

1 A brown crust composed of an association between algae, lichen, mosses, and fungi.

reclamation. Costs may be reduced with the use of tanks, particularly when the pit requires solidification or netting. Drilling water would be typically be stored on location in 3, 500bbl tanks and drilling fluids would be stored in 2, 500bbl tanks. A "shaker" separates the cutting from the fluids which are removed to a, lined bermed containment area on location. Minimal additional excavation is required to construct the containment areas. After the well is drilled and completed, the dried cuttings would be either be buried on location or disposed of at an authorized facility. Drilling fluids would be disposed of at an authorized facility or location. Yates anticipates 6-12 months for the pits to dry naturally. BLM's will require reserve pits to be closed as soon as practical but no later than 6 months after the well is completed. Fluids remaining in the reserve pit may need to be removed by the Operator and disposed of at a permitted facility to accommodate this timeframe.

Access Road

The other anticipated impact associated with HF involves the large amount of heavy ADT (200-700 trucks/well) to transport water storage containers, water and other HF materials to the location, as well as ADT anticipated for removing the storage tanks and flow-back fluid from the completion.

There is increased soil disturbance associated with construction and/or upgrade of the roads with a minimum running surface of 16 feet and 18 foot sub-grade greatly increasing the soil disturbance depending on site topography. Geomorphic effects of roads and other surface disturbance range from chronic and long-term contributions of sediment into waters of the state to catastrophic effects associated with mass failures of road fill material during large storms. Roads can affect geomorphic processes primarily by: accelerating erosion from the road surface and prism itself through mass failures and surface erosion processes; directly affecting stream channel structure and geometry; altering surface flow paths, leading to diversion or extension of channels onto previously un-channelized portions of the landscape; and causing interactions among water, sediment, and debris at road-stream crossings. The Operator proposes to construct approximately 0.3 miles of new access road and re-construct 1.1 miles of existing roads. The operator is responsible for the construction of the road to meet Bureau 9113 road standards. The NRCS (2013) rates the erosion hazard associated with roads for the soils found along the access route to be severe due to slope and erodibility. The road reconstruction should be completed, including any culverts, low water crossings and required surfacing, before the drilling rig or other drilling equipment moves onto the pad in order to protect erodible soils as well as to maintain safe operations.

Wildlife

ICF International (ICF) performed a habitat assessment for bald eagles, grouse leks, mountain plover, raptors, prairie dog colonies, and Ute ladies'-tresses orchid. Wildlife inventory surveys were completed for sharp-tailed grouse, Greater Sage-Grouse (GSG), raptor nests, mountain plover and prairie dog colonies in July 2013 (ICF2013) and other BLM Special Status (Sensitive) Species. ICF searched for potential Ute ladies'-tresses orchid habitat (ICF 2012). ICF conducted surveys per the PRB Interagency Working Group's protocols; see: http://www.blm.gov/wy/st/en/field_offices/Buffalo/wildlife.html. The affected environment within 4 miles of the proposed well consists of 388 existing oil and gas wells (22 of which are plugged and abandoned) and associated access road and infrastructure to support the wells' production. Habitat quality within the area has been highly impacted by oil and gas development with an average of 7.7 wells per section currently on the landscape.

Raptors

BLM analyzed affects to raptors in the Crown Prospect Federal 41-28-4978SHEH EA. A requirement to survey known raptor nests by a biologist, following the most current BLM protocol, between April 15 and June 30, 2013. All survey results shall be submitted in writing to a Buffalo BLM biologist and approved prior to surface disturbing activities. A 0.5 mile timing restriction (February 1 through July 31) will be applied if a nest is identified as active. Measures intended to avoid, minimize, and mitigate impacts to raptors are outlined in the COA document, including operator committed measures and site-specific

COAs. For example, to reduce the risk of adverse impacts to nesting raptors, no surface-disturbing activity will occur within 0.5 mile of all identified raptor nests from February 1 through July 31, annually, prior to a raptor nest occupancy survey. A list of 4 known Raptor nest within 0.5 mile of proposed surface disturbing activities are listed in Table 1.7, below.

Table 1.7. Raptor Nests Within 0.5 miles of the Project

BLM Raptor Species - Nest ID	-	Infrastructure
Unknown Raptor - 6460	within	0.39 mile from the Flying Fed #26H well pad
Great horned owl - 3563	within	0.39 mile from the Flying Fed #26H well pad
Red-tailed hawk - 2647	within	0.48 mile from the Flying Fed #26H well pad
Red-tailed hawk – 3043	within	0.15 mile from existing access road to be reconstructed

The PRB FEIS analyzed direct and indirect effects to raptors, pp. 4-216 to 4-221. This project will result in a direct loss of foraging habitats (approximately 5 acres). The cumulative effects associated with the project are within the analysis parameters and impacts described in the PRB FEIS. Refer to the PRB FEIS for details on expected cumulative impacts, p. 4-221. Although the BLM BFO requires a 0.5 mile radius timing limitation (TL) during the breeding season around active raptor nests to reduce the risk of decreased productivity or nest failure, the project will not have a TL because the nest has been successful and habituated to the existing oil and gas operations in the project area, as well as, the biological buffer between the nest and the project area will more than likely not decrease productivity or nest failure.

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' Skyward Federal #18H well are anticipated to be similar in nature, with the following additional site-specific information.

The Skyward Federal #18H well and proposed access road occurs within suitable nesting and brood rearing habitat for GSG. Construction of the well pads and access roads will result in the removal of sagebrush. The surrounding area is comprised of moderately dense to dense sagebrush stands and rolling topography. The BLM biologist also observed GSG scat in the area. Construction, drilling, and hydraulic fracturing activities are anticipated to negatively impact GSG nesting in suitable habitat in the project area.

Construction of the well pad, access road and buried utilities will result in the removal of sagebrush. Drilling, HF activities and well production are also anticipated to negatively impact GSG nesting in suitable habitat within 0.6 mile of the project area.

The 2012 BLM-contracted population viability analysis for the Northeast 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. The distribution of existing and proposed wells in relation to those 32 leks that occur within 12.4 miles of the proposed well. Additional information regarding the population viability analysis, and its influence on cumulative effects from energy development is found in the affected environment and environmental effects sections (Section 3.7.12 and 4.8.2 – Candidate Species – Greater Sage-grouse (Sage-grouse)) of the Mufasa Fed 11-31H Well EA, WY-070-EA12-062, incorporated here by reference. The application of the timing limitation will minimize the impacts that would reduce connectivity between Greater Sage-Grouse leks within the vicinity of the project area.

In order to reduce the impacts to GSG associated with noise, construction, and human disturbance

resulting from implementation of the proposed project, a timing limitation (March 15-June 30) on surface-disturbing activities within 2 miles of GSG leks (within and adjacent to identified nesting habitat) will apply. The nearest leks are the Tear Drop I and Tear Drop II Leks to the South of the Skyward Federal #18H at 0.86 miles and 0.4 miles respectfully. Yates proposes to reconstruct an existing oil and gas road that passes through the Tear Drop II Lek. (At least 3 companies (Yates, Devon, and Lance) use this existing road since 2005 to support developments at Ruby, Tear Drop, and others – in addition to the road's use by ranchers. BLM believes that placing restrictions on this road now or creating a new road (new surface distubance) gains neglible GSG conservation 6 years later in non-priority GSG habitat.) Because nesting GSG are shown to avoid infrastructure by up to 0.6 miles, the intent of this timing restriction is to decrease the likelihood that GSG will avoid these areas and increase habitat quality by reducing noise and human activities during the nesting season. The application of the timing limitation will minimize the impacts that would reduce connectivity between Greater Sage-Grouse leks within the vicinity of the project area.

Sharp-Tailed Grouse

No known sharp-tailed dancing grounds occur in the project area, however suitable nesting habitat for the species is present throughout the area. ICF International did not locate any dancing grounds within 2 miles of the project area during surveys (ICF 2012). The Bear Draw II is the nearest known breeding ground for sharp-tailed grouse which is approximately 3.8 miles from the Skyward Fed 18H location. A survey is required for sharp-tailed grouse between April 1 and May 7, annually, for the duration of surface disturbing activities of the project and results shall be submitted to a BLM biologist. If an active lek is identified during survey, the 0.64 mile timing restriction (March 1-June 15) would be applied and surface-disturbing activities not be permitted until after the nesting season. See also, Barlow Ranch Federal EA, WY-070-012-173, Sections 3.7.2 and 4.9.2, incorporated here by reference.

Migratory Birds

The PRB FEIS discussed direct and indirect effects to migratory birds on pp. 4-231 to 4-235. The PRB FEIS states on p. 4-231, "Surface disturbance associated with construction, operation, and abandonment of facilities, including roads, has the potential to result in direct mortality of migratory birds. Most birds would be able to avoid construction equipment; however, nests in locations subject to disturbance would be lost, as would any eggs or nestlings." 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 Migratory Bird Treaty Act (MBTA), a nondiscretionary statute. Additional information on the impacts to migratory birds, and its influence on cumulative effects from energy development can be found in the affected environment and environmental effects of the Sahara POD EA, WY-070-EA13-72, 2013, Sections 3.7.2.2 (p. 16-17) and 4.6.2.2 (p. 31-33) incorporated here by reference.

Habitat disturbance and disruptive activities (i.e. drilling, construction, completion, operations, and maintenance) resulting from implementation of the well (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. Drilling and construction noise can be troublesome for songbirds by interfering with the males' ability to attract mates and defend territory, and the ability to recognize calls from conspecifics (BLM 2003). Habitat fragmentation will result in more than just a quantitative loss in the total area of habitat available; the remaining habitat area will also be qualitatively altered (Temple and Wilcox 1986). Ingelfinger and Anderson (2004) identified that the density of breeding Brewer's sparrows declined by 36% and breeding sage sparrows declined by 57% within 100 meters of dirt roads in a natural gas field. Effects occurred along roads with light traffic volume (less than 12 vehicles per day). The increasing density of roads constructed in developing natural gas fields exacerbated the problem creating

substantial areas of impact where indirect habitat losses through displacement were much greater than the direct physical habitat losses.

Those species that are edge-sensitive will be displaced further away from vegetative edges due to increased human activity, causing otherwise suitable habitat to be abandoned. If the interior habitat is at carrying capacity, then birds displaced from the edges will have no place to relocate. One consequence of habitat fragmentation is a geometric increase in the proportion of the remaining habitat that is near edges (Temple 1986). In severely fragmented habitats, all of the remaining habitat may be so close to edges that no interior habitat remains (Temple and Cary 1988). Over time, this leads to a loss of interior habitat species in favor of edge habitat species. Other migratory bird species that use the disturbed areas for nesting may be disrupted by the human activity, and nests may be destroyed by equipment.

During the onsites, the BLM biologist identified suitable nesting habitat present for several BLM sensitive sagebrush obligates. The BLM confirmed sagebrush habitat, with shrubs in excess of 2 feet, at the proposed Skyward Fed 18H well location. Brewer's sparrows and sage thrashers both nest in sagebrush shrubs and occur in the area. Construction of the well pad and associated infrastructure will remove over 14 acres of sagebrush habitat and could result in a "take" (as described above) of BLM sensitive migratory birds if removal occurs during the nesting season.

In an effort to apply the least restrictive measures to be in compliance with the MBTA, while still conforming to Executive Order (EO) 13186 and the BLM/FWS MOU regarding conservation of species of concern, the BLM prohibits habitat removal for only those habitats where BLM sensitive migratory birds are likely to occur. The BLM has been applying a conditional surface use stipulation for all special status species to all oil and gas leases since 2008 (IM WY-2013-005, p. 2). To reduce the likelihood of a "take" under the MBTA, the BLM biologist 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 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 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): Skyward Federal #18H. Timing limitations for GSG (March 15 to June 30) and active raptor nests (Feb 1 to July 31) both begin prior to timing limitations for sagebrush obligates, and thus may provide additional protection where migratory bird nesting periods and habitats overlap.

Yates proposes using heater treaters in the production phase of the well. 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). 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 Skyward Federal #18H well location.

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 utilizing grassland habitats in the Skyward Federal #18H proposed disturbance areas, 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 post construction. 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.

Water Resources
The historical use for groundwater in this area was for stock water or domestic purposes. A search of the WSEO Ground Water Rights Database showed no registered stock and domestic water wells within 1 mile of the proposed well in the project area other than 4 of 29 CBNG wells dual permitted as stock water wells. For additional information on groundwater, refer to the PRB FEIS, 2003, pp. 3-1 to 3-36.

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. The operator will run surface casing to 2,200 feet, total vertical depth to protect shallow aquifers.

Table 1.8. Casing Set and Cementing Depths in relation to the Fox Hills

Well Name & #	Total Depth of Surface Casing	Total Depth of Intermediate Casing	Depth to Fox Hills
Skyward Federal #18H	2,200 feet	8,831 feet	7,194 feet

The Fox Hills, the deepest known fresh water zone in the PRB lies well above the target Shannon formation. Table 1.8 shows the depths where the drill hole will have casing set and cemented in place from surface to well below the Fox Hills. 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.

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. 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.

Cultural Resources
Previously reviewed and accepted Class III cultural resource inventories (BFO #'s 70050085, 70990043) adequately covered the proposal area. No historic properties are in the area of potential effect. On December 9, 2013 Seth Lambert, BLM Archaeologist, notified the Wyoming State Historic Preservation Office (SHPO) following section VI(A)(1) of the Wyoming State Protocol, of a finding of no effect for the proposal. If any cultural values [sites, artifacts, human remains (Appendix L PRB FEIS and ROD)] are observed during operation of this lease/permit/right-of-way, they will be left intact and the Buffalo Field Manager notified. Further discovery procedures are in the Standard COA (General)(A)(2).

Literature Cited

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Persons & Agencies Consulted

Name	Agency	Title	Name	Agency	Title
John Vaselin	YPC	Federal Regulatory Agent	Denis Camino	YPC	Land Agent
Jim Verplancke	BLM	NRS/Wildlife Biologist			
Seth Lambert	BLM	Archeologist	John Kelley	BLM	NEPA Coordinator
Amber Haverlock	BLM	Realty Specialist	Casey Freise	BLM	NRS Supervisor
Will Robbie	BLM	Petroleum Engineer	Bill Ostheimer	BLM	NRS Supervisor
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Kristin Phillips	BLM	LIE	Clark Bennett	BLM	Asst Field Office Manager
Warren Garrett	BLM	Geologist	Duane Spencer	BLM	Field Office Manager

Decision and Rationale on Action

The COAs provide mitigation and further the justification for this decision and may not be segregated from project implementation without further NEPA review. I reviewed the plan conformance statement and determined that the proposed Skyward Federal #18H APD and infrastructure conform to the applicable land use plans. I reviewed the proposal to ensure the appropriate exclusion category as described in Section 390 of the Energy Policy Act of 2005 is correct. It is my determination that there is no requirement for further environmental analysis.

Field Manager

1/7/14
Signature Date

Contact Person, Jim Verplancke, Natural Resource Specialist, Buffalo Field Office, 1425 Fort Street, Buffalo WY 82834, 307-684-1100.

Figure 1.1 Lease Boundaries, Surface and Bottom Hole Locations, and Lateral Bore Paths for Skyward Federal #18H.