



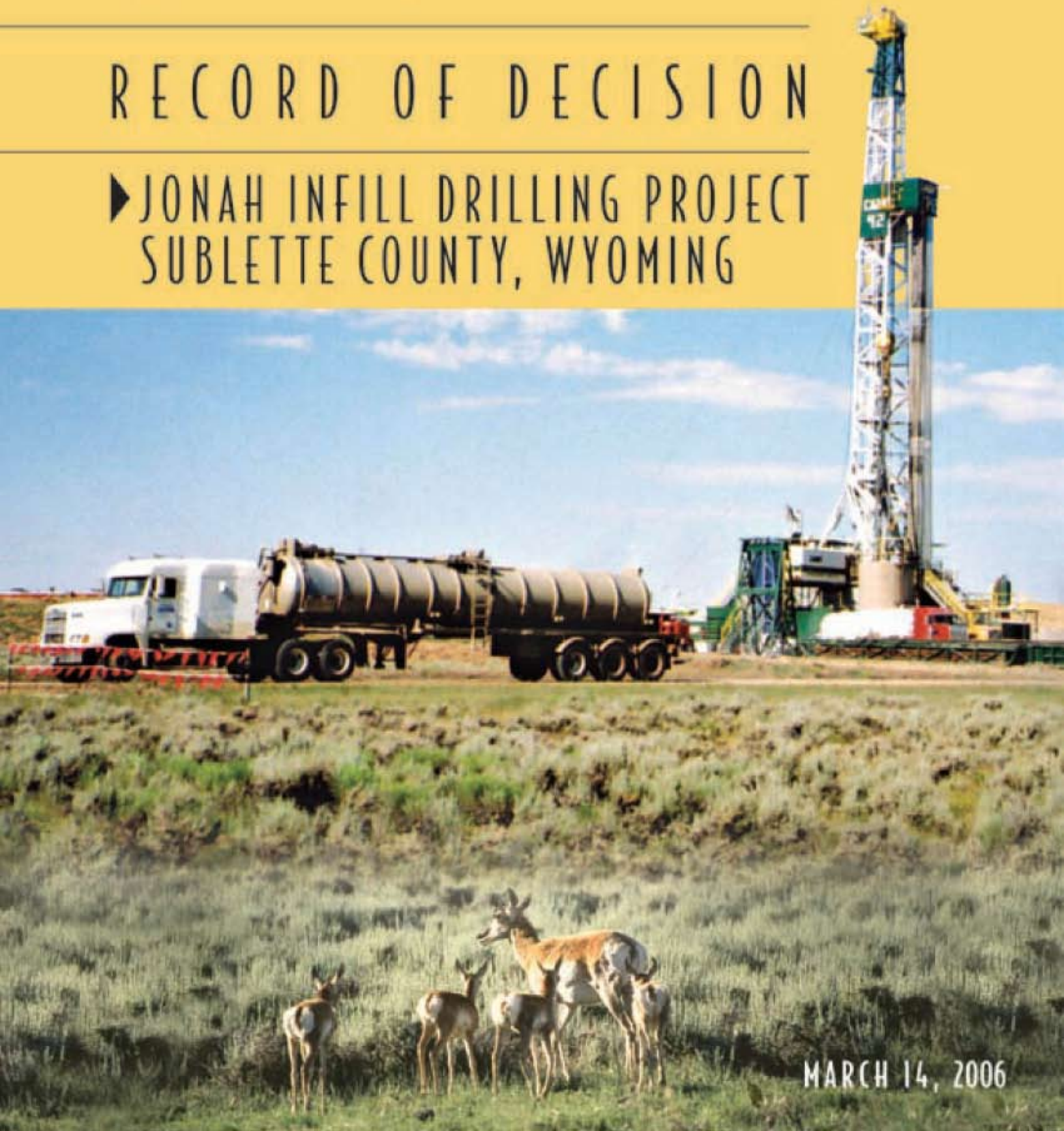
U.S. Department of the Interior



Bureau of Land Management
Pinedale and Rock Springs Field Offices

RECORD OF DECISION

▶ JONAH INFILL DRILLING PROJECT SUBLETTE COUNTY, WYOMING



MARCH 14, 2006

RECORD OF DECISION
FOR
JONAH INFILL DRILLING PROJECT
ENVIRONMENTAL IMPACT STATEMENT

U.S. Department of the Interior
Bureau of Land Management
Wyoming State Office
Cheyenne, Wyoming

APPROVING OFFICIAL:



Robert A. Bennett
Wyoming State Director

3/14/06
Date

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RECORD OF DECISION
for the
Jonah Infill Drilling Project Environmental Impact Statement
Sublette County, Wyoming

SUMMARY

This Record of Decision (ROD) documents the Wyoming State Director’s decision to approve, with minor modifications, the preferred alternative as described in the Final Jonah Infill Drilling Project (JIDP)¹ Final Environmental Impact Statement (FEIS). The JIDP FEIS analyzes various options for oil and gas recovery and resource mitigation. The decision emphasizes limiting additional surface disturbance and performing interim reclamation and off-site mitigation, performance-based outcomes for reducing impacts to air quality, cooperative air quality monitoring with the State of Wyoming, and continued resource monitoring and consultation with federal and state agencies. The ROD provides the plan for future management of the federal surface and mineral estate in the Jonah Infill Drilling Project Area (JIDPA). The JIDPA comprises approximately 30,500 acres, of which 28,580 acres is federal surface and mineral estate (94%), 1,280 acres is state surface and mineral estate (4%), and 640 acres is private surface/federal mineral (2%) estate. Figure 1 shows the location of the JIDPA. The findings in the JIDP FEIS and decisions of this ROD are based upon an open and collaborative public process. The State of Wyoming, Sublette County, individuals, stakeholders, and institutions shared their knowledge and insights about the proposed oil and gas field development with the Bureau of Land Management (BLM). Public involvement was solicited, and the BLM responses to major issues from public comments on the FEIS are presented in Appendix E.

The JIDP is consistent with the President’s National Energy Policy and the Energy Policy Act of 2005 by increasing domestic energy supply and helping to reduce the country’s dependence on foreign sources of oil and gas. The final project plan as described in the JIDP FEIS was recently cited by the U.S. Environmental Protection Agency (EPA) as a “model of collaboration” that successfully balances “provid[ing] greatly needed energy resources...while protecting the environment of southwestern Wyoming.” The proposed project is expected to produce nearly 8 trillion cubic feet (TCF) of natural gas, providing enough natural gas to heat 96 million homes for one year and generating approximately \$6.1 billion in royalties to be divided between the federal treasury and the State of Wyoming.

DECISION

The BLM adopts the *Preferred Alternative* (with modifications) for infill drilling of the JIDPA, as described in the FEIS. The Preferred Alternative involves year-round drilling of approximately 3,100 additional oil and gas wells within the existing JIDPA to recover additional energy resources while limiting the total surface disturbance within the JIDPA to 46% of the area, or a maximum of 14,030 acres, at any given time. Operators will be required to begin reclamation as soon as disturbed areas are no longer

¹ The Jonah Infill Drilling Project is the proposal of EnCana Oil & Gas (USA), Inc., BP America Production Company, and other companies (hereafter referred to as “Operators”).

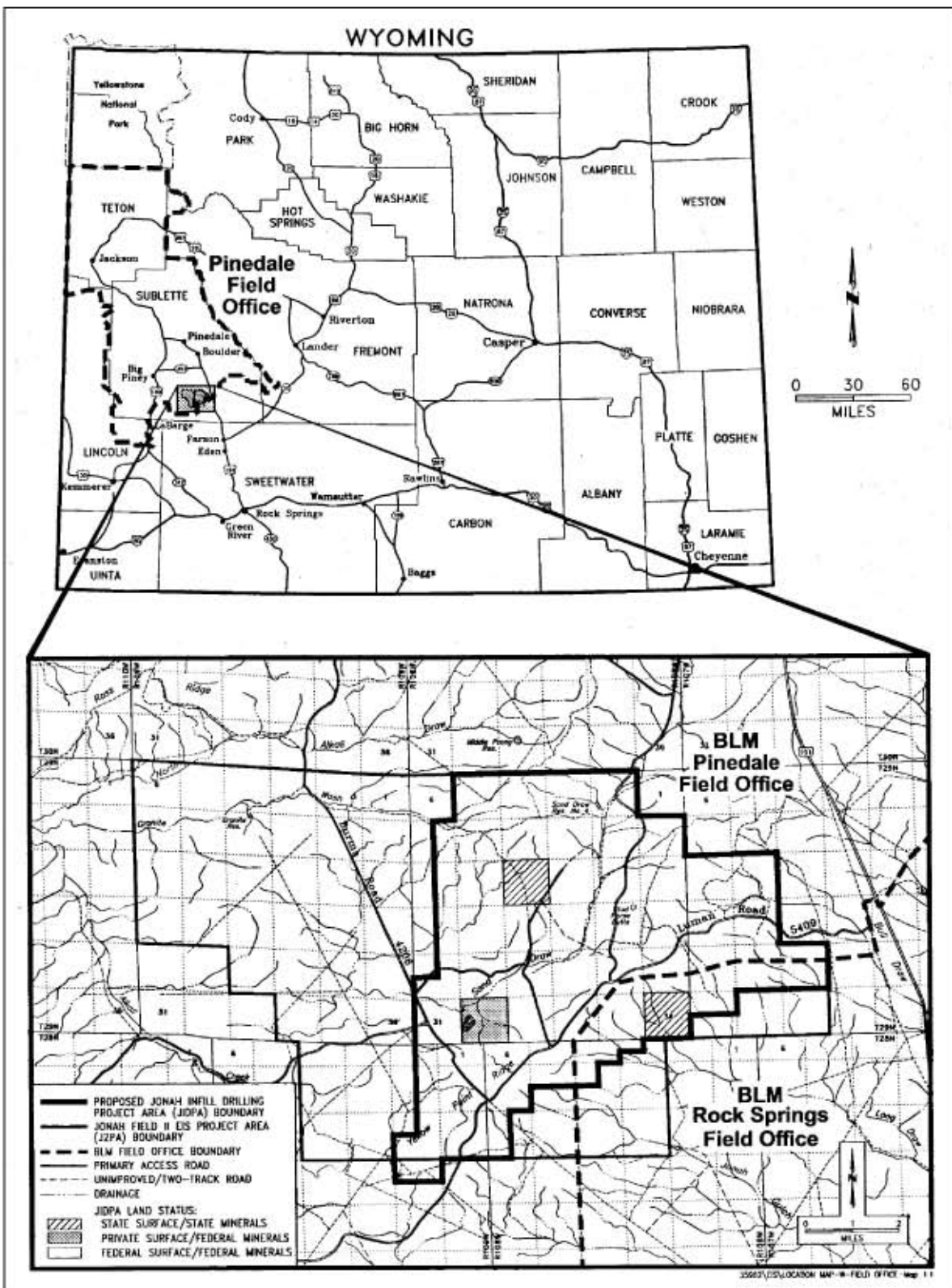


Figure 1. Jonah Infill Drilling Project Location, Sublette County, Wyoming, 2006.

needed for drilling activities. Final reclamation will be conducted as soon as sites are no longer needed for production activities. When reclaimed areas meet the objectives in FEIS Appendix B, reclaimed acres will be credited back against the total disturbed acres, up to 6,304 acres. The cumulative total disturbed area cannot exceed 20,334 acres in the JIDPA. Surface disturbance and reclamation credit will be prorated and tracked on an operated-acreage basis (i.e., leases developed by specific Operators; see Appendix A). Non-project related disturbance within the JIDPA boundaries will be allocated to Operators on an operated-acreage percentage basis.

Desired future conditions and resource management objectives will be achieved through performance-based mitigation and implementation of best management practices (BMPs). The objectives address key issues and significant impacts identified through the environmental analyses. Monitoring and surveying will determine if objectives and desired future conditions are being met.

This decision establishes the Jonah Interagency Monitoring and Mitigation Office (JIO). The objective of the JIO is to evaluate the effectiveness of guidelines, mitigation, BMPs, and monitoring. The JIO will make recommendations to the BLM on modifications to proposed projects and mitigation based on its evaluations. The BLM will use these recommendations in consultation with state and federal agencies to adapt management decisions.

This decision is consistent with both the Pinedale Resource Management Plan (RMP) and Green River RMP. This decision is not the final review or approval for actions associated with the JIDP. The Authorized Officer will review and authorize each component of the project that involves disturbance of federal lands on a site-specific basis. The methods used to evaluate and authorize each surface-disturbing activity include, but are not limited to, an Application for Permit to Drill (APD), right-of-way (ROW) grant, Sundry Notice, or Special Use Permit with the supporting environmental review.

REASONS FOR THE DECISION

The JIDP EIS was prepared in response to leaseholders' requests to exercise the terms and conditions of their respective oil and gas leases in the project area. The environmental impacts of this decision are fully disclosed in the Draft and Final EISs for the project. The decision to approve the JIDP as described in the Preferred Alternative is in conformance with the BLM land use plans for the Pinedale and Rock Springs Field Offices covering the JIDPA.

The decisions included in this ROD ensure the effective recovery of the oil and gas resource within the JIDPA. Performance-based mitigation and BMPs ensure desired future resource conditions will be achieved. Implementation of this decision will result in production of nationally significant oil and natural gas resources consistent with The National Energy Policy (May 2001). Although the proposed development requires intensive surface-disturbing activities that will result in significant impacts to resource values, including displacement and/or local extirpation of wildlife resources, long-term reestablishment of habitat value and function will occur through the proposed reclamation practices and monitoring efforts. While the intensive development will limit opportunities for other uses for many years, the long-term outcome will be full reclamation and the return of these lands to near prior existing conditions for other use opportunities in the future. In addition to the onsite mitigation, the BLM will require off-site mitigation as proposed by the project proponent, EnCana Oil & Gas (USA), Inc.

In reaching this decision, the following key issues were considered. Rationale for mitigation and actions to address each issue and reduce effects are presented.

Surface Disturbance. The total area and distribution of surface disturbance associated with further development of the JIDPA affects other resources (soils, vegetation, wildlife and wildlife habitat, cultural resources). The extent and duration of surface disturbance can adversely affect management of these resources.

- To minimize surface disturbance impacts, the Preferred Alternative employs outcome-based performance objectives and encourages development and implementation of state-of-the-art technologies for both operational and reclamation activities.
- Soil erosion and salinity transport modeling predicted no sedimentation or salinity reaching the Green or New Fork Rivers, though multiple repeated runoff events could affect these waterways. Accelerated reclamation, intensive monitoring, and use of sediment control structures will further minimize impacts. Managing surface disturbance on a field-wide basis and requiring successful interim reclamation in exchange for allowing additional disturbance provides a strong incentive for Operators to employ new technologies to reduce their operational footprint and accelerate the reclamation process to reach their total oil and gas resource recovery objectives. Reducing the operational footprint will create less overall disturbance, while accelerated reclamation will ensure vegetation is reestablished in the shortest time possible. The surface disturbance management philosophy of smaller operational footprints and accelerated reclamation efforts also benefit wildlife by limiting habitat fragmentation and returning habitat function in the shortest possible time.
- Surface disturbance impacts on cultural resource are mitigated through avoidance and, where avoidance is not possible, by recovery actions on a site-specific basis. Additionally, a programmatic agreement between the BLM, State Historic Preservation Office, and Operators is being pursued to further reduce the overall potential for impacts to cultural resources.

Socioeconomic Effects. Another issue of concern is the influx of transient workers (those workers not maintaining permanent residence) and the ability of governmental agencies to address infrastructure shortfalls such as community support facilities, hospitals and medical clinics, emergency services, housing, and roads. Gas field employees express the desire to maintain permanent residence in the area, but are concerned about continued employment opportunities in the JIDPA. Both the project proponents and local government agencies identify potential revenues from tax dollars, royalties, and jobs associated with the proposed project as benefits to the state, county, and local communities.

- The FEIS and Socioeconomic Analysis Technical Support Document contain extensive analysis of potential socioeconomic impacts. To assist local government agencies in planning, Operators will annually provide 3-year field development forecasts to the BLM. These forecasts will be made available to local government agencies to assist in local community/county/state planning efforts.

Air Quality. Ongoing and future natural gas development projects in the region are contributing to observed changes in air quality and negatively impacting the nearby Class I wilderness airsheds. Also of concern are the potential health effects on worker and area residents, the potential for excessive acid deposition, the potential impacts to nighttime stargazing, and BLM's authority for requiring air quality mitigation.

- These concerns have been extensively analyzed through air quality modeling in cooperation with the U.S. Environmental Protection Agency (EPA), Wyoming Department of Environmental Quality–Air Quality Division (WDEQ–AQD) and USDA Forest Service (USFS).

- Modeling predicts no significant impacts to public health for the air quality pollutants modeled. Worker health falls within the purview of the Occupational Safety and Health Administration.
- WDEQ is the regulatory authority to maintain and monitor compliance with state and federal air quality public health standards. BLM will continue to work in consultation with WDEQ, EPA, and the USFS to monitor air quality for public health, including ozone monitoring.
- Both modeled and monitored atmospheric deposition is within levels of acceptable change, and no significant impacts to lake chemistry from the JIDP are anticipated. Mitigation measures designed to reduce potential visibility impacts are anticipated to also reduce impacts to lake chemistry and atmospheric deposition.
- The modeling indicated potential significant adverse visibility impacts in various Class 1 areas using a reasonable-but-conservative scenario. To address this issue, the BLM, WDEQ, EPA, and USFS jointly developed performance-based mitigation requirements (see Appendix A).
- Mitigation measures designed to reduce potential visibility impacts are anticipated to also reduce impacts to stargazing.

Wildlife. Wildlife issues focus on three areas: sage-grouse impacts, pronghorn migration corridors, and habitat impacts. Overall wildlife impact strategy is discussed below, followed by a specific discussion of each of the three issues.

- After federal decisions authorizing the current level of Jonah Field development (16 well pads per section, or 40-acre spacing), the Wyoming Game and Fish Department (WGFD) issued a guidance document for oil and gas development impacts to wildlife (*Recommendations for Development of Oil and Gas Resources within Crucial and Important Wildlife Habitats, December 6, 2004*). Using the definitions in this guidance, the current state of development in the Jonah Field had already reached a threshold (oil and gas development at levels greater than four well pads per 640-acre section [160-acre spacing]). The WGFD report recommends off-site mitigation to address impacts when this threshold is exceeded.
- To address the cumulative impacts within the JIDPA, this decision implements three strategies; 1) return field habitat function in the shortest time possible, 2) perform on-site mitigation to the extent practicable and employ compensatory (off-site) mitigation (CM) when complete on-site mitigation is not effective in the short-term, and 3) institute an adaptive management process to ensure monitoring and both on- and off-site mitigation are effective.
- To return habitat function as soon as possible, this decision implements a management approach that provides an incentive for rapid on-site interim and final reclamation while simultaneously allowing maximum flexibility in field development. The Operators will establish a fund for CM as part of their operation. This fund will be administered by the Jonah Interagency Monitoring and Mitigation Office (JIO) established by this ROD (see Appendix C). The JIO will evaluate monitoring and mitigation effectiveness and provide annual adaptive management recommendations as appropriate to the BLM for consideration. WGFD and the Governor of Wyoming have coordinated on these strategies.
- Sage-Grouse Impacts. Effects to this species and its habitats are an issue because of the decline from historic population levels of sage-grouse in the JIDPA and the decline in overall populations

across their range. Potential project effects to breeding, nesting, brood-rearing, and wintering habitat and habitat function were identified as potentially contributing to continued population declines. It was also noted that existing sage-grouse protection measures appear to be inadequate within the JIDPA and with the proposed increase in development, existing protection measures would be even less effective.

- The FEIS analysis disclosed the impacts from the current and alternative levels of disturbance, and recognized that the local population will likely be completely displaced and/or locally extirpated due to full field development. However, this is not anticipated to affect long-term species sustainability due to the relatively small size of the JIDPA in relation to overall habitat availability in the area. For example, the Yellowpoint lek complex (which includes the JIDPA) has seen a 25% reduction in male lek attendance compared to long-term averages, while the nearby Speedway lek complex (outside the JIDPA) has observed a 48% increase in male lek attendance. Additionally, substantial off-site CM directed at sage-grouse habitat improvements will be employed to further mitigate impacts.
- Pronghorn Migration Corridor. Sublette pronghorn herd migrations are affected by current oil and gas development. Continued development within the JIDPA and at other locations within the Sublette Herd Unit area will cumulatively affect pronghorn seasonal migrations. Hunters, wildlife enthusiasts, and wildlife management agencies all consider the maintenance of existing migratory corridors extremely important to pronghorn population maintenance.
 - The FEIS analysis disclosed that these impacts will likely affect traditional pronghorn utilization of the JIDPA on a long-term basis. As with sage-grouse, the selected action is not anticipated to affect overall species sustainability due to the project's small footprint and availability of suitable alternative habitat surrounding the JIDPA that provides adequate opportunity for animal displacement. Also, CM will be employed to implement appropriate projects, such as habitat improvement, to further mitigate impacts.

Wildlife Habitat. Respondents indicated that, with implementation of the proposed project, the JIDPA would no longer be suitable habitat for many wildlife species (e.g., threatened and endangered species, BLM-sensitive species, and raptors). Habitat loss was attributed to direct loss through surface disturbance, indirect loss through animal avoidance of areas proximal to developments, and habitat fragmentation (habitat is no longer suitable for species requiring intact habitat patches larger than what would be available if the project were constructed).

- The FEIS acknowledged that habitat impacts would be substantial due to full field development. The mitigation strategy for limiting the allowable surface disturbance is designed to ensure accelerated reclamation by the Operators and to facilitate the long-term return of habitat function. Compensatory mitigation, committed to by the Operators and accepted by the BLM as a condition of approval, should result in significant improvements to existing habitats and/or development of additional suitable habitats used by the affected species. The off-site mitigation will remain in place and offset some of the on-site impacts until such time as final reclamation of the full field development impacts occurs.

Maximize Natural Gas Recovery. The BLM was perceived as not responding to its mandate under the Mineral Leasing Act to maximize recovery of available oil and gas resources. Existing and proposed development restrictions (lease stipulations, RMP requirements, and Operator-committed practices) limit the economic feasibility of maximizing recovery of the JIDPA's natural gas resources.

- Under the Preferred Alternative, Operators will be able to achieve their proposed level of development over time, but must meet interim reclamation goals to reach these objectives. The BLM believes this approach provides a good balance between oil and gas recovery and resource protection and provides for long-term reclamation and re-establishment of native vegetation and wildlife communities.

Range/Grazing. Concerns for livestock operations in the JIDPA include direct loss of livestock forage; the potential for a reduction in permitted livestock numbers; water quality impairment at existing livestock watering sources; livestock movement restrictions/alterations due to pipeline trenches, roads, and fences; livestock management problems associated with the inability to access required area two-track routes from project-developed crowned-and-ditched roads; vehicle collisions; drinking contaminated waters from project pits; entrapment in pipeline trenches; and the increase in fugitive dust emissions potentially causing dust-induced pneumonia.

- Though the project results in the temporary and potentially long-term loss of available livestock forage (depending on the results of the Preferred Alternative's reclamation requirements), any loss of animal unit months will be determined through rangeland monitoring and, if necessary, addressed through the adaptive management process. As discussed in the FEIS, the effect(s) of other potential impacts (e.g., traffic, roads, open trenches, etc.) on grazing operations cannot be accurately predicted at this time, but it is reasonable to assume some conflicts may occur. Mitigation and/or solutions to such conflicts will also be addressed as they arise.

BLM Monitoring/Enforcement Capability. Concern was expressed that BLM would focus on drilling approvals and neglect monitoring, compliance, and resource protection responsibilities. It was suggested this may lead to undetected violations of numerous laws, rules, and regulations (e.g., Endangered Species Act, Clean Water Act, lease stipulations, RMP requirements, Operator-committed practices required under past project authorizations).

- BLM's monitoring and enforcement procedures for oil and gas exploration and development occur in three separate phases: 1) application review and processing, 2) compliance, and 3) long-term monitoring of mitigation effectiveness.

APD processing includes review of the surface-disturbing activity application and on-site inspection of proposed locations. Resource specialists manage the various aspects of this process and ensure NEPA analyses, on-site visits, site-specific conditions of approval (COAs), and mitigation requirements are appropriate. Sufficient personnel are available to meet requirements.

APD compliance includes inspection of road, well pad, and pipeline construction by BLM Natural Resource Specialists (NRSs) and/or Surface Compliance Specialists (SCSs) to ensure the construction complies with requirements of the surface use plan in the APD, site-specific and programmatic NEPA documentation, and the guiding land use plan. NRSs and SCSs also monitor post-drilling (interim) reclamation processes to ensure the site is adequately stabilized and habitat restoration is initiated in accordance with this ROD. APD compliance also includes rigging-up, drilling, and case-setting operations, which are randomly monitored by BLM Petroleum Engineering Technicians to ensure required safety features such as blow-out preventers operate properly and the surface casing is properly cemented to protect fresh groundwater zones.

Long-term resource monitoring includes evaluation of the effectiveness of both on-site and off-site mitigation/reclamation to ensure the objectives of this ROD are met. The Jonah Interagency

Monitoring and Mitigation Office (JIO) was established to address these issues (see Appendix C). As an interagency office, the JIO staff (WGFD, WDEQ, Wyoming Department of Agriculture, and BLM) will have the authority to address a wide range of pertinent monitoring, mitigation, and/or compliance issues. This office will also provide the BLM with adaptive management recommendations to established procedures when existing data indicates changes are required.

One of the major concerns expressed during this analysis process by both the public and various agencies was the inability to mitigate all potential impacts in the JIDPA on-site (within the JIDPA boundaries). In response to this concern, the Operators voluntarily proffered varying levels of CM to provide a means to complete off-site mitigation that may be necessary due to the level of development authorized. Additionally, a portion of these funds will be used to establish and operate the JIO to provide project-specific monitoring and mitigation (both on- and off-site). The JIO also provides a means to ensure project monitoring and mitigation requirements are fulfilled and BLM receives relevant adaptive management recommendations periodically.

The Preferred Alternative meets one of the primary goals of the President's National Energy Policy and the Energy Policy Act of 2005, to increase domestic energy supplies and reduce the United States' dependence on foreign sources of energy. Development of these federal resources satisfies requirements of FLPMA and the Mineral Leasing Act. The leasing and subsequent production of federal oil and gas resources provides the United States, the State of Wyoming, and affected local counties with income in the form of lease royalty payments. The Preferred Alternative meets the goals of the National Energy Policy and achieves the objectives of the federal oil and gas leasing programs managed by the BLM.

This decision is made in full consideration of the public, local, state, and other federal agency input. No substantial issues remain unresolved within the scope of this proposal, as raised by government agencies, industry, groups, or individuals.

MITIGATION MEASURES

Implementation of the Jonah Infill Drilling Project will be subject to numerous mitigation measures applicable to both on-site and off-site actions. These measures are addressed in two sections, on-site requirements and off-site requirements, each of which is described below.

On-Site Requirements

On-site administrative requirements, COAs, and mitigation requirements are used to guide field development activities to compensate for, resolve, minimize, or avoid impacts to resources. Appendix A presents administrative requirements, performance-based objectives, and potential mitigation measures to be applied when supported by site-specific environmental review. Operator-committed practices, which become mandatory requirements with publication of this decision, are included in Appendix B.

Field development plans contained in Appendix B of the FEIS are also incorporated in this decision, as modified in the Errata section of this ROD. These development plans include a Transportation Plan, Reclamation Plan, and a Hazardous Materials Management Summary.

Off-Site Mitigation

Off-site or compensatory mitigation (CM) is necessary to mitigate some impacts that cannot be adequately mitigated on site. Impacts to wildlife from implementing the Preferred Alternative cannot be adequately mitigated on site. Recognizing this fact, EnCana, and potentially other Operators, committed to fund varying levels of CM depending on the amount of new surface disturbance authorized in this decision. These funding levels are included in Table 1 below for the five developments scenarios provided for in the EnCana commitment letter.

Table 1. EnCana Proposed CM Funding, Jonah Infill Drilling Project, Sublette County, Wyoming, 2006

Amount of Additional Surface Disturbance Authorized in the Jonah Drilling Project ROD	Funding Distribution		Total
	Offsite Wildlife Habitat Improvement Projects	Other Monitoring, Inspection, and Enforcement Activities	
16,200 or Greater Acres New Initial Surface Disturbance	\$20.5 million	\$8 million	\$28.5 million
Between 12,000 and 16,199 Acres New Initial Surface Disturbance	\$16.5 million	\$8 million	\$24.5 million
Between 11,000 and 11,999 Acres New Initial Surface Disturbance	\$13.5 million	\$6.2 million	\$19.7 million
Between 10,000 and 10,999 Acres New Initial Surface Disturbance	\$7.5 million	\$4.6 million	\$12.1 million
Between 8,300 and 9,999 Acres New Initial Surface Disturbance	\$1.5 million	\$4 million	\$5.5 million

The Preferred Alternative permits a total cumulative new surface disturbance of 16,125 acres. This equates to a total commitment of \$24.5 million in CM funding, to be provided as requested by the JIO Charter Members annually in increments not to exceed 20% of the total CM fund per year. These funds will be applied to off-site mitigation projects and managed by the JIO, with oversight by the Agency Managers Committee (see FEIS, Appendix F). In the event CM proffered funds are withheld, further surface disturbance allowed under this decision would not be authorized.

Project proposals will be accepted from a variety of sources: federal, state or local government agencies, educational institutions, interest groups, or individuals. Initial project selection will be by the JIO, with final approval by the BLM. Approved projects will be implemented and managed by the JIO.

PUBLIC INVOLVEMENT

In September 2002, EnCana Oil & Gas (USA), Inc. (EnCana) dba McMurray Oil Company, BP America (BP), and other natural gas operators, collectively known as the Operators, submitted a proposal to the BLM to further develop the Jonah Field by “infill” drilling natural gas wells in well spacing that would be more dense than what had been previously approved.

On March 13, 2003, the BLM's Notice of Intent (NOI) appeared in the *Federal Register* and invited the public to comment or provide research information regarding the Operators' proposal to infill drill in the Jonah natural gas field. On March 26, 2003, copies of a scoping notice describing the Proposed Action and seeking comments were mailed to appropriate government offices, elected officials, public land users, groups, newspapers, and radio and television stations. A scoping meeting was held in Pinedale, Wyoming, on April 17, 2003. An additional public meeting was held on November 13, 2003, to present to the public the draft project alternatives that had been developed for analysis in the EIS to address public concerns. On November 20, 2003, EnCana and BP jointly submitted to the BLM a revised development proposal. The Operators' proposed revised development had evolved from the proposed activities described in the March 2003 NOI.

On December 12, 2003, the BLM notified scoping participants of the Operator-proposed development plan revisions and solicited further comment. BLM's letter describing the Operators' revised proposal provided the public with a 30-day review and comment period.

Numerous issues and concerns were identified in comments received by BLM. All comments received between March 2003 and August 2004 were reviewed and analyzed. The BLM identified nine key issues based primarily upon the assumed quantity, intensity, or duration of a potential impact, and/or the level of interest in the issue. These issues were used to develop the range of alternatives analyzed in the draft environmental impact statement (DEIS).

The DEIS, including technical support documents for air quality and socioeconomics, was released to the public and a notice of availability (NOA) was published in the *Federal Register* on February 11, 2005. All documents were available in paper and electronic formats (CD-ROM), as well as being available for download from the BLM's website. The comment period ended April 12, 2005.

After publication of the DEIS, BLM determined the air quality modeling and analysis in the DEIS was inadequate to evaluate impacts. Analysis in the *Questar Year-Round Drilling Proposal Environmental Assessment* (November 2004) showed emission levels of certain pollutants within the regional airshed had increased significantly since the original DEIS data had been compiled.

The BLM in cooperation with other federal and state governments with jurisdiction determined that supplemental air quality modeling and analysis would be conducted, an air quality technical support document supplement would be published, and the results of these studies would be incorporated into the final environmental impact statement (FEIS). On April 12, 2005 BLM published its NOI in the *Federal Register* to provide supplemental air quality information for the DEIS. The supplemental air quality information became available for public review and comment in August 2005, and BLM published an NOA in the *Federal Register* and provided the public with an additional 60-day comment period.

BLM received a total of 877 separate written comment submissions (letters, e-mails, forms, etc.) on the DEIS, TSDs, and the August 2005 supplements. Within these submissions, 1,147 individual comments were identified as "substantive," or meaningful to revision of the DEIS and/or its supporting volumes. BLM responded to each of these substantive comments, which were used to guide revision of the DEIS analyses. The substantive comments resulted in BLM's decision to significantly revise the Preferred Alternative and to eliminate five of the alternatives presented in the DEIS from further consideration in the FEIS. A detailed description of the comments made on the DEIS and the process by which they were analyzed by BLM was included with the FEIS.

The FEIS was released to the public and an NOA published in the *Federal Register* on January 13, 2006. Comments were accepted on the FEIS through February 13, 2006. A total of 45 public comments were received. A summary of these comments and BLM's responses are contained in Appendix E of this ROD.

SUMMARY OF PROPOSED ACTION AND ALTERNATIVES

Alternatives Considered

The Jonah Infill Drilling Project FEIS analyzed five alternatives. They are:

1. No Action
2. Proposed Action
3. Alternative A: Minimize Directional Drilling
4. Alternative B: Minimize Surface Disturbance
5. Preferred Alternative

No Action Alternative

Under the No Action Alternative, the BLM would reject the Operators' proposal for additional field-level natural gas development on federal lands within the JIDPA. Authorizations for and impacts from previously approved or analyzed development (533 wells) and surface disturbance (497 well pads with associated roads, pipelines, and ancillary facilities) would continue. The approved surface disturbance under the No Action Alternative is 4,209 acres, including 1,409 acres of life of project (LOP) disturbance. LOP is estimated to be approximately 63 years.

However, rejection of the Operators' proposal would not preclude all additional natural gas development in the JIDPA. The No Action Alternative assumes the JIDPA would be managed as approved by existing management plans and previously approved NEPA documents. Though the extent of potential future development under this scenario is limited, it cannot be precisely predicted. Therefore, the impact analysis for the No Action Alternative assumes no new development.

The No Action Alternative serves as a benchmark enabling decision-makers and the public to compare the magnitude of environmental consequences across action alternatives.

Proposed Action

The Operators would infill drill and develop up to 3,100 new wells on a minimum of 64 well pads/section (at least 1 pad every 10 acres) with related roads, pipelines, and ancillary facilities on up to 16,200 acres of new disturbance. Drilling would begin upon issue of the ROD and continue until the total number of proposed wells has been drilled, the natural gas resources in the field have been fully developed, or economic conditions are such that it is no longer profitable to drill additional wells.

Operator reservoir modeling shows that 3,100 new wells would be necessary to adequately recover the natural gas resource present in the area. Their experience indicates that the use of directional drilling is in some cases not economically feasible and in other cases results in inadequate resource recovery.

The Proposed Action assumes that 250 wells would be developed annually (~20 rigs operating year-round). LOP would be approximately 76 years. Specific features include:

- up to 3,100 new wells on up to 11,780 acres of new disturbance (2,790 acres LOP)—assumes all 3,100 wells would be drilled from single-well pads with an estimated total disturbance of 3.8 acres and 0.9 acre LOP per single well pad;
- 465 miles of new resource roads with gathering pipelines—4,131 acres new disturbance (1,635 acres LOP);
- 8 miles of new collector/local roads—73 acres new disturbance (37 acres LOP);
- an upgrade of approximately 12 miles of the Burma Road—75 acres new disturbance (20 acres LOP);
- ancillary facilities—41 acres new disturbance (41 acres LOP) for water disposal, storage, and compressor station facilities; and
- exploration activities—100 acres new disturbance (100 acres LOP) to develop well pads and other infrastructures necessary to explore for natural gas resources in formations other than the Lance Pool.

Following successful interim reclamation (post-drilling during production phase), LOP surface disturbance under the Proposed Action would be 6,040 acres, which includes 1,409 acres of existing disturbance.

Additionally, Operators identified a number of mitigation/development practices they would commit to in advance (see Appendix B), as well as \$28.5 million in compensatory (off-site) mitigation (CM) funding.

Alternative A – Minimize Directional Drilling

Alternative A is similar to the Proposed Action in its estimated surface disturbance requirements (16,200 acres), development rate (250 wells per year) and LOP (76 years), but differs in that known areas with sensitive resources in the JIDPA would not be avoided (e.g., Sand Draw, steep slopes, raptor nest and sage grouse lek buffers). Development of natural gas resources beneath these areas would therefore not require the use of directional drilling, resulting in increased recovery of the resources by ~250 billion cubic feet over the LOP. This alternative would not necessarily provide for the RMP-required balance between gas recovery and other resource protection; therefore, project authorization under this alternative would require an RMP amendment. Other features of Alternative A include:

- Well pads, access roads, and other aboveground facilities could be located within 825 feet of active raptor nests.
- Surface disturbance and occupancy would not be prohibited within 0.25 mile of the perimeter of greater sage-grouse leks.
- Prairie dog towns would not be avoided

- The Sand Draw Conditional Surface Use restriction (formerly referred to as a No Surface Occupancy restriction) and other drainage and steep slope avoidance areas would not be maintained.

Operators committed to a number of mitigation/development practices in advance (see Appendix B) and \$28.5 million in CM funding under this alternative.

Alternative B – Minimize Surface Disturbance

Surface disturbance would be reduced under Alternative B by requiring all new wells be drilled from existing well pads. Existing well pads would be enlarged and new pipelines built within existing pipeline corridors. A rate of development of 75 wells per year and an LOP of 105 years are assumed under Alternative B. Specific features include:

- expansion of existing well pads—3,081 acres new disturbance (1,044 acres LOP)— 6.2 acres new disturbance (3.0 acres LOP) per well pad expansion;
- ancillary facilities—41 acres new disturbance (41 acres LOP) for water disposal, storage, and compressor station facilities; and
- exploration activities—100 acres new disturbance (100 acres LOP) to develop well pads and other infrastructures necessary to explore for natural gas resources in formations other than the Lance Pool.

Following successful interim reclamation, LOP surface disturbance under Alternative B would total 2,622 acres, which includes 1,409 acres of existing disturbance.

Although directional drilling under Alternative B would minimize surface disturbance and thereby benefit wildlife and other resources, it would also increase air emissions by approximately 20% over the Proposed Action and Alternative A by extending the amount of drilling time per well. Thus, Alternative B could have a greater cumulative impact on air quality resources. Additionally, Alternative B results in significantly lower oil and gas recovery rates in relation to the Proposed Action or Preferred Alternative (~1.8 trillion cubic feet of natural gas and 18 million barrels of oil).

Operator-committed practices contained in Appendix B would also apply, though no CM funding was volunteered for this level of development.

BLM Preferred Alternative

BLM revised the Preferred Alternative based on public comment and technical information received on the DEIS. The revised Preferred Alternative, and its associated outcome-based performance objectives, mitigation, and Best Management Practices (BMPs), would achieve high levels of natural gas recovery (potentially that of the Proposed Action) while minimizing impacts related to the key issues. BLM has concluded that this management approach would achieve the fewest long-term impacts while allowing recovery of the mineral resource as provided by federal laws and regulations, including FLPMA, and extant leasing stipulations.

The Preferred Alternative would limit total surface disturbance at any given time to 46% of the JIDPA, or a maximum of 14,030 acres. To mitigate surface disturbance and associated environmental impacts as quickly as possible, Operators would be required to initiate reclamation of developed well pads and road and pipeline construction ROWs pursuant to Reclamation Plan specifications (see FEIS, Appendix B). Credit would thereafter be given, on an acre-for-acre basis for areas the BLM determines have successfully been reclaimed. Under no circumstances would cumulative total surface disturbance exceed 20,334 acres over the LOP. Surface disturbance and reclamation credit will be tracked on an operated-acreage basis. Non-project related disturbance within the JIDPA boundaries will be allocated to Operators on a field-wide operated-acreage percentage basis.

For the purposes of analysis, a total of 3,100 new wells and a pace of 250 wells drilled per year are assumed, resulting in the field development phase being completed in approximately 13 years. However, the actual pace of development may be limited by air quality impact restrictions and associated mitigation, which creates the potential to increase the duration of the field development phase. For the purposes of analysis the LOP is assumed to be 76 years.

Additional provisions of the Preferred Alternative are as follows:

- An interagency mitigation and monitoring implementation group, called the Jonah Interagency Mitigation and Reclamation Office (JIO), would be established and begin working once the ROD is issued. Details of JIO composition, objectives, and operating procedures are provided in Appendix C. General provisions of the JIO are as follows:
 - Oversee implementation of mitigation and monitoring of JIDP activities, including compensatory mitigation.
 - The JIO would include BLM, WDEQ, WGFD, and the Wyoming Department of Agriculture.
 - Funding for the JIO would be provided by the Operators.
 - BLM would consider periodic JIO adaptive management recommendations to adjust COAs, monitoring, mitigation, and/or BMPs to meet field development and production objectives throughout the LOP.
- The existing Wildlife Monitoring/Protection Plan developed for the Modified Jonah II Project would be modified/updated to address activities within the JIDPA.
- To reduce potential wildlife impacts, no further improvements to the Burma Road would be authorized. That portion of the Burma Road that is currently upgraded would be maintained to BLM standards.

Following successful interim reclamation and assuming the application of the maximum reclamation credit (6,304 acres), LOP surface disturbance under the BLM Preferred Alternative would total 6,020 acres, which includes 1,409 acres of existing long-term disturbance.

Operator-committed practices as described in Appendix B would be required as COAs where appropriate. Operators would fund compensatory mitigation equal to \$24.5 million based on the authorized level of new surface disturbance (16,125 acres; see Table 1).

ALTERNATIVES CONSIDERED AND ELIMINATED FROM DETAILED STUDY

Draft EIS Alternatives Not Carried Forward for Final Analysis

Of the 10 alternatives that were analyzed in detail in the Draft Environmental Impact Statement (DEIS), five of these alternatives—Alternatives C, D, E, F, and G—were not carried forward for final analysis in the FEIS. Additionally, multiple well development rates within any single alternative were not further analyzed. A description of these alternatives and development rates follows.

Alternatives C and D provided different limits to restrict well numbers and were initially considered in the DEIS to provide a range of impacts to air quality. Alternative C proposed limiting development to 1,250 new wells and well pads and an estimated surface disturbance of 6,705 acres. Alternative D would have limited the number of new wells and well pads to 2,200 and an estimated surface disturbance of 11,581 acres. Neither Alternative C nor Alternative D limited well or well pad surface density. These two alternatives were eliminated from additional analysis because neither alternative is considered reasonable: at least 3,100 additional wells would be required to fully develop the field and anything less would result in stranded resources that would most likely never be recovered. Allowing mineral resources to remain unrecovered, as would occur under these and similar alternatives, would result in waste and prevent BLM from achieving its statutory and policy goals. In addition to not fully recovering the resource, Alternatives C and D would result in impacts similar to those resulting from components of the alternatives that are carried forward in this FEIS. Specifically, these components are individual wells from closely spaced well pads under Alternative A, multiple wells from a single well pad as analyzed in Alternative B, and a combination of single and multiple well pads as analyzed under the Preferred Alternative.

Alternatives E, F, and G provided variable surface well pad spacing allowances, and were initially considered to provide a range in the amount and distribution of surface disturbance across the JIDPA. Alternative E examined drilling and developing 16 wells from 16 well pads in a section, resulting in approximately 6,386 acres of additional disturbance. Alternative F analyzed the effects of increasing the well pad density to 32 well pads per section for a total of 10,446 acres of additional disturbance. Finally, Alternative G examined the effects of 64 well pads per section (one well pad for every 10 acres) at an estimated total additional disturbance of 13,898 acres. As with Alternatives C and D, these alternatives were eliminated from further consideration in the FEIS because the anticipated impacts from the alternative actions would be similar to those resulting from components of the alternatives that are carried forward for additional analysis in this FEIS.

Alternate paces of development within each alternative were eliminated from further analyses in this FEIS because it was determined that providing this information within each alternative introduced a level of complexity which made it difficult for the public and decision-makers to assess potential impacts across the full range of alternatives. Two development rates (250 and 75 wells drilled per year) are carried forward as parts of specific alternatives analyzed in this FEIS, and with these analyses a sufficient range of resource effects (e.g., LOP, air quality, socioeconomics) is provided.

Other Alternatives Considered and Eliminated from Detailed Analysis

Many suggestions for alternatives were proposed by the public during scoping. Most of the suggested alternatives involved addressing varying well numbers, varying the rate at which the field is developed,

and varying surface disturbance. While not all the suggested well number, development rate, or surface disturbance suggestions were analyzed, the BLM used these suggestions when developing the range of alternatives.

An alternative rejecting any new development was also suggested. This was not considered reasonable, as additional development in the area would likely occur from non-federal activities (e.g., State of Wyoming land development), over which BLM has no authority. The No Action Alternative sufficiently considers no new development impacts (see FEIS, Section 2.4.1).

Action alternatives limiting the total number of wells were rejected from consideration based upon known natural gas reservoir properties indicating that an estimated 3,100 additional wells would be necessary for adequate resource recovery. Additional justification for eliminating these alternatives from detailed analyses is provided in the FEIS, Section 2.2.3.1.

Phased development alternatives suggesting a development pace slower than 75 wells per year were rejected from detailed analyses because the reduced development pace would result in recovery and operational and safety issues associated with drilling through depressurized zones (i.e., stuck pipe, mud weight variability problems, blow-out potential). It was determined that the analyzed development paces of 75 and 250 wells drilled per year provide an adequate range of development paces to assess the potential effects associated with development rate (e.g., socioeconomics, duration of habitat loss). Phased development alternatives involving systematic extraction of resources from portions of the JIDPA followed by appropriate reclamation prior to developing other areas of the JIDPA were not provided detailed analyses due to the potential for disproportionate adverse effects on resource recovery within some leaseholds (see also FEIS, Section 2.2.3.1). Allowing mineral resources to remain unrecovered would result in waste and prevent BLM from achieving its statutory and policy goals.

Two alternatives requiring all new wells to be directionally drilled and requiring no new roads were not specifically analyzed in detail because Alternative B has a similar potential effect (i.e., no new well pads, few new roads needed).

An alternative rejecting all further development in the JIDPA until all existing disturbance in the area is adequately reclaimed was not considered since this action would likely lead to considerable unrecovered resource and would unnecessarily prolong the LOP.

Numerous alternatives requiring the inclusion/exclusion of multiple resource protection, mitigation, and monitoring measures were suggested for analysis, including the application of best management practices (BMPs), the use of adaptive management procedures, and consideration of off-site CM (see FEIS, Chapter 5). Some of these additional measures have been included as components of the Proposed Action and Preferred Action alternatives and/or may be included as project requirements in the ROD. Many if not all of these suggested requirements are considered under one or more of the alternatives analyzed in detail (see also Appendices A and C of the FEIS for BLM standard mitigations, Operator-committed measures, and CM ideas).

ENVIRONMENTALLY PREFERRED ALTERNATIVE

In accordance with Council on Environmental Quality (CEQ) regulations (40 CFR 1505.2(b)), the environmentally preferred alternative must be identified in the Record of Decision.

BLM considers the environmentally preferred alternative for the Jonah Infill Drilling Project to be the *No Action Alternative*. This alternative would result in the least amount of impact to a majority of resources within the Jonah Field. However, the No Action alternative would also fail to effectively recover known oil and gas resources. Therefore, the BLM Preferred Alternative was selected.

APPEAL PROCESS

This decision may be appealed to the Interior Board of Land Appeals, Office of the Secretary, in accordance with the regulations contained in 43 CFR 3165.4. If an appeal is filed, your notice of appeal must be filed in this office (Bureau of Land Management, State Director, P.O. Box 1828, Cheyenne, Wyoming 82003) within 30 days of the date BLM publishes their notice of the decision in the *Federal Register*. The appellant has the burden of showing that the decision appealed from is in error.

If you wish to file a petition pursuant to 43 CFR 3165.4(c) for a stay (suspension) of the effectiveness of this decision during the time that your appeal is being reviewed by the Board, the petition for a stay must accompany your notice of appeal. A petition for a stay is required to show sufficient justification based on the standards listed in 43 CFR 3165.4(c). Copies of the notice of appeal and petition for a stay must also be submitted to the Interior Board of Land Appeals and to the Rocky Mountain Regional office of the Solicitor at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

ERRATA

Modifications and Corrections to the Jonah Infill Drilling Project Final Environmental Assessment

The section describes changes to the FEIS to correct errors or omissions and identify modifications.

Modifications

1. Abstract, page i, 3rd paragraph, line 6, change to read “Above a certain level of authorized development, ~~the~~ *several* Operators have committed to establishing a fund...”. This statement is corrected to reflect that all Jonah Field Operators have not committed to compensatory mitigation.
2. Executive Summary, page iii, Proposed Action, 1st paragraph, line 8, change to read “~~The~~ *Several* Operators have committed to various mitigation...”. This statement is corrected to reflect that not all Jonah Field Operators have committed to compensatory mitigation.
3. Executive Summary, page v, BLM Preferred Alternative, 1st paragraph, line 1, change to read “(i.e., ~~achieved 80% indigenous vegetative basal cover/density and species composition~~ meets reclamation performance objectives). Under no circumstances...”. This statement is corrected to reflect final reclamation strategy.
4. Chapter 1, Section 1.3, page 1-4, delete 1st paragraph and all six bullets beginning with “The proposed development meets the purpose and need...to plan uses that encourage energy conservation” from this section and insert in Section 1.5.3, page 1-10, between paragraph 3 (beginning “The Notice of Intent (NOI) for this EIS...”) and paragraph 4 (beginning “Specifically, the proposed project is in conformance with...”). This change better organizes the information presented.
5. Chapter 1, Section 1.5.3, page 1-10, paragraph 3, change line 6 to read “...PFO RMP ~~as updated by the ROD for the Pinedale Anticline Oil and Gas Exploration and Development Project (BLM 2000e)~~ if development at the proposed level is approved.” This statement is modified to reflect current Interior Board of Land Appeals decisions.
6. Chapter 2, Section 2.3.1.1, page 2-9, Water, change 1st bullet to read “Operators would maintain ~~or restore~~ groundwater and surface water...”. This bullet is changed to clarify Operators responsibilities with regards to the Clean Water Act and Wyoming Department of Environmental Quality (WDEQ) standards.
7. Chapter 2, Section 2.3.1.1, page 2-10, Reclamation, delete 1st bullet that begins “Operators would submit to BLM for approval a reclamation plan...”. This requirement is unnecessary since a reclamation plan is included in the FEIS and monitoring will be accomplished by the JIO.
8. Chapter 2, Section 2.4.5, page 2-18, BLM Preferred Alternative, 2nd paragraph, line 7, change to read “(i.e., ~~achieved 80% indigenous vegetative basal cover/density and species composition~~ meets reclamation performance objectives). Under no circumstances...”. This statement is corrected to reflect final reclamation strategy.

9. Chapter 2, Section 2.4.5.2, page 2-22, delete 7th bullet from top of page beginning “Operators would utilize closed drilling systems (no reserve pits)...”. This bullet is unnecessary in light of defined development plans and procedures and surface disturbance management strategy.
10. Chapter 2, Section 2.4.5.2, page 2-23, delete 2nd bullet from top of page beginning “Operators would periodically demonstrate that potential impacts...”. This bullet is unnecessary in light of air quality mitigation requirements included in this ROD.
11. Chapter 2, Section 2.4.5.2, page 2-24, delete 5th bullet and both sub-bullets regarding “Minimum reclamation requirements would be:” and replace with the following bullet and sub-bullets:
 - Reclamation objectives will be:
 - Rollover reclamation credit requires establishment of viable site-stabilizing plant growth (e.g., resistant to wind and water erosion) and a plant community that approximates surrounding or ecologically comparable vegetative composition to the maximum extent possible.
 - Final reclamation requires a range of species composition, diversity, cover and production equal to pre-disturbance levels.
12. Chapter 2, Section 2.4.5.2, page 2-24, change 7th bullet to read “Operators would *voluntarily seek opportunities* to participate in and support published...”. This change clarifies a best management practice.
13. Chapter 2, Section 2.4.5.3, page 2-25, modify the 5th bullet to read “Institute nighttime lighting/glare restrictions (e.g., install light shades/hoods, directional lighting, colored lights, wattage limits, motion detectors; extinguish all unnecessary lighting during non-working hours), consistent with Occupational Safety and Health Administration requirements.”
14. Chapter 3, Section 3.1.6.2, subsection “Groundwater Use”, page 3-43, paragraph 1, change line 7 to read: “...Map 4.1). ~~No groundwater irrigation occurs in the JIDPA or CIAA~~ Some irrigation occurred within the JIDPA to support experimental reclamation procedures.”
15. Chapter 5, Section 5.1.1, page 5-2, paragraph 1, change line 1 to read “The following actions could further reduce ~~overall~~ *cumulative* emissions, which in turn...”.
16. Chapter 5, Section 5.1.2, subsection “Visibility”, page 5-5, paragraph 3, change line 7 to read “...as soon as possible to no days with an impact greater than *or equal to* 1 deciview (dv).”
17. Appendix B, Subappendix DP-B, page DP-B-3, Section DP-B-2.1, 2nd paragraph, change line 1 to read “The reclamation success ~~standards~~ *objectives* provided in Section DP-B-2.2 ~~are the measures~~ *will be used to develop specific reclamation success criteria* that will show whether or not these goals are being met.”
18. Appendix B, Subappendix DP-B, page DP-B-3, Section DP-B-2.2, delete text from entire Section beginning with “The following reclamation success standards are...” and ending with “...standards 1-5, 6d, 6e, 6f, and 7 have been achieved.” Replace with the following:

“BLM will use two separate criteria for reclamation success in the JIDPA; rollover and release. When the *rollover* criteria are achieved acreage will be credited back to the Operators against the 46% surface disturbance ceiling. When the *release* criteria are achieved the Operators will be released from final bond obligation.

The specific objectives of rollover reclamation criteria include site stabilization (e.g., resistant to wind and water erosion) and establishment of a plant community that approximates surrounding or ecologically comparable vegetative composition, to the maximum extent possible.

Reclamation success standards for bond release will meet the objectives of species composition, diversity, cover and production levels equal to pre-disturbance levels.

In general, success standards may require a range of species composition, diversity and cover requirements based on varying conditions and/or locations. To deal with these unknowns, specific success criteria will be developed by the JIO, with public participation, and approved by the BLM. Final determination concerning whether or not a reclaimed area meets the rollover or release standards will be made by the Authorized Officer for the BLM.

19. Appendix B, Subappendix DP-B, Section DP-B-4.1.2.2, page DP-B-10, paragraph 1, change line 11 to read “Temporary reclamation (see Section DP-B-4.3) would be implemented immediately on all topsoil and spoil stockpiles *that would be in place more than 6 months.*” This change clarifies these requirements.
20. Appendix B, Subappendix DP-B, Section DP-B-5.4, page DP-B-27, paragraph 1, change line 2 to read “...monitored qualitatively (~~annually and after large rainstorms or snow melt runoff events~~).” This change clarifies these requirements.

