

**DRAFT ENVIRONMENTAL IMPACT STATEMENT,
JONAH INFILL DRILLING PROJECT,
SUBLETTE COUNTY, WYOMING**

(Volume 1 of 2)

**Bureau of Land Management
Wyoming State Office
Cheyenne, Wyoming**

**Pinedale Field Office
Pinedale, Wyoming**

and

**Rock Springs Field Office
Rock Springs, Wyoming**

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ABSTRACT

Environmental Impact Statement, Jonah Infill Drilling Project, Sublette County, Wyoming

Draft

Final

Lead Agency: Bureau of Land Management
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The Bureau of Land Management has received a proposal from oil and gas developers to more intensively develop natural gas resources in an approximately 30,500-acre portion of the Jonah Field through infill drilling among existing wells. The project area is generally located about 32 miles southeast of Pinedale and 28 miles northwest of Farson in southeastern Sublette County, Wyoming. Within the project area boundary there are currently 533 wells permitted or committed to from 497 well pads. Wells would be expected to produce for approximately 40 years; the Life of the Project (from first well drilled to last well plugged and abandoned and habitat function restored) is estimated to be up to 110 years.

Ten alternatives were considered in detail. The No Action alternative is required by the National Environmental Policy Act as a baseline against which other action alternatives can be analyzed. For this project, the No Action alternative would not authorize field-level development, though drilling could continue on State and private leases and would occur on Federal leases to prevent drainage of Federal resources.

The Proposed Action includes drilling, completing, and operating up to 3,100 additional wells on up to 16,200 acres of new disturbance, including the roads, pipelines, and other ancillary facilities needed to support the new wells; minimum well pad (surface disturbance) density of 64 well pads per 640-acre section; bottomhole well density ranging from 1 bottomhole every 5 acres to 1 bottomhole every 40 acres; and 250 wells drilled per year. Standard field development and production procedures would be followed. Above a certain level of authorized surface disturbance, the Operators have committed to establishing a fund to finance compensatory (off-site) mitigation for impacts that cannot be fully mitigated on-site. Recent communication from

the Operators indicates their willingness to consider other methods of implementing compensatory mitigation.

One action alternative removes some standard restrictions and mitigations to minimize the amount of directional drilling required, to remove some wildlife and surface protections, etc., and to facilitate additional gas recovery; another limits all drilling to the currently-authorized 497 well pads; two others vary the number of wells; three others vary well pad density; and the BLM Preferred Alternative combines several of the other alternatives and applies additional mitigation and outcome- or performance-based field management objectives.

The Wyoming State Director is the BLM's Authorized Officer responsible for preparing this Draft Environmental Impact Statement.

EXECUTIVE SUMMARY

The Department of Interior (DOI), Bureau of Land Management (BLM) Pinedale Field Office (PFO) and Rock Springs Field Office (RSFO) has received a proposal from EnCana Oil and Gas (USA), Inc., BP America Production Company, and other natural gas operators (collectively known as the Operators) to expand existing natural gas drilling and development operations in the Jonah Field in south-central Sublette County, Wyoming. Operations are proposed for that portion of the Jonah Field referred to as the Jonah Infill Drilling Project Area (JIDPA) which encompasses approximately 30,500 acres located in portions of Townships 28 and 29 North, Ranges 107 through 109 West, approximately 32 miles southeast of Pinedale and 28 miles northwest of Farson, Wyoming.

The DOI/BLM Pinedale and Rock Springs Field Offices have determined the proposed project would constitute a major federal action and therefore requires the preparation of an Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act of 1969, as amended (NEPA). This draft EIS was prepared in accordance with NEPA to assess the environmental consequences of the Operator's proposed action and alternative courses of action. It is intended to provide the public and decision-makers with a complete and objective evaluation of impacts resulting from the Proposed Action and reasonable alternatives.

Life of project (LOP) is estimated to vary from 63 to 105 years, depending on the alternative and pace of development.

Currently within the JIDPA, BLM has approved or committed to 497 well pads and 533 wells with associated access roads, pipelines, and ancillary facilities. Operation and maintenance of these facilities will continue as authorized by existing permits.

PROPOSED ACTION

The Operators propose to expand development of natural gas and condensate reserves from the Lance and other formations at depths of approximately 11,000 feet by drilling as many as 3,100 additional wells on up to 16,200 acres of new surface disturbance during the development (drilling) phase. Specific features include the following: a minimum of 64 well pads per 640-acre section, downhole well spacing from 1 bottomhole/5 acres to 1 bottomhole/40 acres; up to 465 miles of new resource roads with associated pipelines; 8 miles of new collector/local roads; 41 acres of new surface disturbance for ancillary facilities; and 100 acres of new surface disturbance for exploration of other formations. The Operators have committed to various mitigation measures which vary by alternative and propose to fund a Cumulative Impacts Mitigation Fund for offsite Compensatory Mitigation (CM) under some alternatives. This fund could mitigate adverse impacts within the JIDPA by financing substitution mitigation projects outside the JIDPA. As proposed, the fund could be based on the level of surface disturbance authorized (e.g., \$850/acre over 11,000 acres). Recent communication from the Operators indicates their willingness to consider other methods of implementing compensatory mitigation.

SCOPING

Public and agency scoping was conducted to determine issues relative to the Proposed Action. A scoping notice and informational materials were mailed to potentially interested parties beginning in March 2003. All issues identified during scoping and BLM and Interdisciplinary Team reviews were evaluated to identify key issues that drove development of alternatives and the impact analyses. The nine key issues identified are: surface disturbance acreage; socioeconomics and boom/bust avoidance; regional visibility effects; greater sage-grouse/greater sage-grouse habitat protection; pronghorn antelope migration corridor protection; direct and indirect habitat fragmentation and loss for all wildlife; maximum natural gas recovery; loss of livestock forage and project hazards; and BLM monitoring and enforcement capability.

The eight alternatives meet the Purpose and Need of the proposal but vary in response to the key issues. Three separate paces of development (75, 150 and 250 wells drilled per year) are analyzed for most alternatives. Other alternatives were considered but rejected for a variety of reasons.

ALTERNATIVES

No Action Alternative: Reject Operator's Proposal

The No Action Alternative would reject the Operator's Proposed Action and all field-level development alternatives. Though this alternative rejects the field-level development as proposed, existing BLM management protocols could allow new drilling activity. However, the BLM cannot predict what level of development would be required to support existing management protocols, so for alternative analysis purposes assumed zero 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.

Alternative A: Minimize Directional Drilling

New initial (drilling phase) surface disturbance would be comparable to the Proposed Action (16,200 acres), but development activity would be exempt from some existing BLM Conditions of Approval (COAs), stipulations, and mitigation. Most notably, environmentally sensitive areas would not be avoided in order to increase the gas recovered.

Alternative B: Minimize Surface Disturbance

All new wells would be drilled from the 497 currently approved well pads. This alternative requires expansion of existing well pads but results in the least amount of new surface disturbance (3,297 acres) while still providing for a higher level of resource recovery within the JIDPA.

Alternatives C and D: Restrict Number of New Wells

Alternative C limits development to 1,250 new wells and well pads with an estimated total new initial surface disturbance of 6,705 acres. Alternative D increases the number of new wells and well pads to 2,200, resulting in new surface disturbance of 11,581 acres. Neither alternative includes well pad surface density restrictions.

Alternatives E, F and G: Restrict Well Pad Density

Alternative E stipulates a maximum of 16 well pads per section (1 well pad/40 acres) with a total new initial surface disturbance of approximately 6,386 acres. Alternative F increases well pad density to 32 wells per section (1 well pad/20 acres) and results in new surface disturbance of 10,446 acres. Alternative G increases the density to 64 wells per section (1 well pad/10 acres) with 13,898 acres of new surface disturbance. Each alternative assumes up to 3,100 new wells would be drilled.

BLM Preferred Alternative

Three different surface disturbance allowances per section would be established within different areas of the JIDPA, resulting in a total of approximately 7,804 acres of new surface disturbance. Performance-based field management objectives would address key issues and significant impacts. Monitoring and surveying would be required to determine if objectives are being met. An interagency adaptive management working group would be established to monitor the effectiveness of development guidelines, mitigation, and monitoring, and to recommend to BLM any modifications to these procedures based on monitoring results.

ENVIRONMENTAL IMPACTS

Physical Resources Impacts

Topography/Water

The JIDPA has a continental, semi-arid, cold desert climate and is located in the central Green River Basin with ephemeral drainages primarily flowing to the Green or Big Sandy Rivers. Groundwater and surface water are variable in quality, and the major use is for livestock and natural gas development operations (ground water only). Significant impacts to topography are expected but not to ground water resources. Surface water resources down-channel from the JIDPA could be significantly affected during run-off events under all alternatives.

Air Quality/Visibility

Whereas no violations of applicable federal or state air quality regulations are anticipated, significant project-specific and cumulative air quality impacts are anticipated to visibility at regional Class I airsheds (e.g., Bridger Wilderness Area) under all alternatives (including No Action). A detailed analysis of air quality effects is provided in the *Draft Air Quality Technical Support Document for the Jonah Infill Drilling Project Environmental Impact Statement*. Modeling of air quality and air quality-related value (AQRV) impacts from the BLM Preferred Alternative will be run during the draft environmental impact statement public comment period and reported in the final environmental impact statement.

Soils

Seventeen soil map units occur in the JIDPA and most have construction and reclamation limitations. Several known sand dunes and other windblown deposits occur in the area. Significant impacts to soils (loss during runoff events, loss of productivity) could occur under all alternatives but are not quantified. Modeling to quantify soil impacts across the range of

alternatives will be run during the draft environmental impact statement public comment period and results will be reported in the final environmental impact statement.

Biological Resources Impacts

Wildlife

Significant impacts to various wildlife habitats in the JIPDA have already occurred as a result of past and current oil and gas development activity. Wildlife that occurs in the JIPDA which may be impacted by this project include pronghorn antelope, greater sage-grouse, raptors and up to seventeen BLM Wyoming Sensitive (BWS) species (most notably sagebrush obligates). On-site mitigation measures and monitoring would occur under most alternatives pursuant to the Wildlife Monitoring/Protection Plan (see *Jonah Infill Drilling Project Development Procedures Technical Support Document*); however, additional significant impacts to some of these species are anticipated. Only under the BLM Preferred Alternative are impacts during the LOP somewhat diminished by establishing specific objectives for wildlife attendance/productivity and faster restoration of habitat function through reclamation. On-site habitat function should be restored as reclamation vegetation nears maturity.

Threatened & Endangered Species

T&E species that may occur on or downstream from the JIDPA include the black-footed ferret, bald eagle, four Colorado/Green River fish species (Colorado pikeminnow, humpback chub, bonytail chub, and razorback sucker) and the plant Ute ladies' tresses. No impacts to these species are anticipated from proposed development under any alternative.

Plant Cover

Plant cover values vary according to the three dominant sagebrush vegetation types present on the JIDPA, with significant impacts expected in many areas. To mitigate the potential impacts, a Reclamation Plan for the project has been prepared (see *Jonah Infill Drilling Project Development Procedures Technical Support Document*, Appendix G) and would be required for all development alternatives. Performance-based management objectives in the BLM Preferred Alternative would further mitigate impacts by focusing development and reclamation on faster restoration of pre-development plant cover.

Land Use Impacts

During the LOP and beyond, the JIDPA would not be as suitable for the historic land uses of livestock grazing, wildlife use, and recreation, until on-site habitat function is restored through reclamation.

Cultural & Historic Resources Impacts

Potential impacts to cultural resources would be mitigated through data recovery and/or avoidance of significant properties. Site-specific surveys for cultural resources would be conducted prior to disturbance, and formal Wyoming State Historic Preservation Office (SHPO) consultation would occur where cultural resource properties may be impacted. If eligible cultural

properties are inadvertently disturbed (unanticipated discoveries), appropriate data recovery programs would be implemented.

Socioeconomic Impacts

Communities most likely to be affected by the proposed project are Pinedale, Big Piney/Marbleton, and Boulder in Sublette County; La Barge in Lincoln County; and Eden/Farson and Rock Springs in Sweetwater County. A detailed socioeconomic impact assessment was prepared for this project (see *Draft Socioeconomic Analysis Technical Support Document for the Jonah Infill Drilling and South Piney Project Environmental Impact Statements*). Significant socioeconomic impacts have already occurred in these cities and counties, due in part to oil and gas development in the past decade. These impacts included additional work opportunities, increased salaries, and increased government revenues, along with growing populations and the inherent increase in infrastructure demands on emergency services, medical facilities and housing. This project is not likely to create additional, new significant impacts.

MITIGATION MEASURES

Numerous standard, JIDPA-specific, and site-specific mitigation measures could be applied during all phases of the project to minimize potential impacts. Site-specific measures would be applied in approved Applications for Permit to Drill and Rights-Of-Way applications for each new project feature as Conditions of Approval, mitigation or monitoring. Interim reclamation would restore any areas disturbed during initial development that are not required during the production phase for the LOP. Upon completion of the project, all wells would be plugged and abandoned, surface facilities would be removed, and the remaining disturbed areas would be reclaimed and revegetated.

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