

**ENVIRONMENTAL ASSESSMENT  
MT-020-2008-345**

**for**

**Fidelity Exploration & Production Company  
Coal Bed Natural Gas**

**Tongue River – Decker Mine East Project**

**Big Horn County, Montana**

**Prepared by:**

Bureau of Land Management  
Miles City Field Office

In cooperation with  
Montana Department of Environmental Quality

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## SUMMARY

Fidelity Exploration & Production Company (Fidelity) submitted a Coal Bed Natural Gas (CBNG) Plan of Development (POD) for its Decker Mine East project area. Attached are the Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for the POD, called the Tongue River-Decker Mine East Project. The Fidelity Tongue River-Decker Mine East Federal Project analysis is being prepared by the Bureau of Land Management (BLM), in cooperation with the Montana Department of Environmental Quality (MDEQ). The project area is located within the CX Field (approved by the MBOGC), Big Horn County of southeastern Montana, T. 9 S., R. 40 E. and T. 9 S., R. 41 E.

Fidelity filed the Tongue River - Decker Mine East POD and APD's for 14 federal monobore wells with the BLM on January 3, 2007. Development of the fee leases, associated with the Decker Mine East POD, has occurred under approvals from MBOGC while the injunctions were in effect upon BLM. On October 29, 2007, the 2005 Ninth Circuit Court injunction was lifted by the Ninth Circuit Court of Appeals, thus allowing BLM to process and approve PODs and APDs based on the U.S. District Court Order dated April 5, 2005.

Fidelity's Decker Mine East Federal Project includes the construction, drilling, production, and reclamation of 14 Federal CBNG wells, construction of new infrastructure and use of existing infrastructure that is located on private and BLM administered surface. The use of existing infrastructure results from the fee wells/infrastructure, within the project area, already developed and in production. The Federal project includes access roads, pipelines for water and gas, overhead and underground power lines, existing compressor facilities, produced water management using existing Montana Pollution Discharge Elimination System permits, and interim/final reclamation. The average production life of the project wells is expected to be 10-20 years with final reclamation to be completed 2 to 3 years after plugging of the wells.

Water produced by the Decker Mine East Federal Project area is proposed for management by the following water management options: (1) beneficially used for industrial uses (dust suppression) in the Spring Creek and Decker Coal Mines; (2) beneficially used by Fidelity for CBNG drilling, construction and dust suppression; (3) beneficially used by livestock and wildlife; (4) treated via ion exchange and discharged to the Tongue River using Fidelity's existing MDEQ discharge permit for treated water (MT0030724); and (5) discharged to the Tongue River using Fidelity's existing MDEQ direct discharge permit (MT0030457).

Issues of concern include the following:

- Air quality effects from CBNG development activities including drill rig emissions (exhaust emissions as well as dust generated by drilling the wells) and fugitive dust (construction activities as well as road dust) and compliance with all applicable air quality rules and standards, including ambient air quality standards
- Cumulative Impacts of this action when considered with past, present and reasonably foreseeable future actions
- Noxious weed introduction and proliferation
- Effects to springs and wells due to groundwater drawdown (pumping water out of coal seams) and effectiveness of Water Mitigation Agreements
- Habitat fragmentation and disturbance effects to wildlife habitat, particularly sage grouse
- Public Health and Safety
- Potential for methane migration and methane drainage
- Disturbance and reclamation activities associated with the PODs
- Surface water quality degradation
- Cultural Resource impacts
- Coal Mine/CBNG conflicts (ground water recovery and overlap in development areas)

The environmental analysis of this EA and other related environmental analyses, provides basis for the BLM decision. The BLM must decide whether or not to approve the individual wells and associated infrastructure on or for the benefit of leases associated with the proposed projects. Various actions and

management options are proposed to be analyzed in the alternatives. The BLM identified Alternative C as its preferred alternative.

Decker Mine East Federal Project is adjacent to the Deer Creek North Federal Project, with the two projects located in the same geographic area. BLM modified the Decker Mine East Federal Project Environmental Assessment and Finding of No Significant Impacts to incorporate the public comments received from the Deer Creek North Federal Project. Public comment was solicited by the BLM Miles City Field Office on August 13, 2008 and ended on August 27, 2008 for the Deer Creek North Federal Project Environmental Assessment and Finding of No Significant Impact. Six individual interest groups, citizens and tribe provided comment to the Deer Creek North EA/FONSI. The substantive comments and brief responses can be found in Appendix I of the Deer Creek North Federal Project EA.

## GLOSSARY

**ANIMAL UNIT MONTH (AUM):** The amount of forage necessary for the sustenance of one cow or its equivalent for a period of one month.

**APPLICATION FOR PERMIT TO DRILL, DEEPEN OR PLUG BACK (APD):** The Department of Interior permit application form needed to authorize oil and gas drilling activities on federal minerals.

**BENEFICIAL USES:** Beneficial uses of the Tongue River include agriculture, drinking water, and industrial and recreational uses.

**COAL BED NATURAL GAS (aka COAL BED METHANE):** A clean-burning natural gas found inside and around coal seams. The gas has an affinity to coal and is held in place by pressure from groundwater. Producing coal bed natural gas involves drilling into coal seams and reducing the hydrostatic pressure on the coal by producing the groundwater thus releasing the gas.

**CRITERIA POLLUTANTS:** carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, fine particulate matter and sulfur dioxide.

**CUMULATIVE EFFECT:** The effect on the environment that results from the positive or negative impacts of an action when added to other past, present and reasonable foreseeable future actions, regardless of what agency or person performed such action(s).

**CONDITION OF APPROVAL (COA):** Requirements imposed on the applicant under which an Application for a Permit to Drill (APD) or Sundry Notice is approved.

**EPHEMERAL STREAM:** An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

**INTERMITTENT STREAM:** An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

**KEYWAY:** When constructing dams or dikes for pits or impoundment with fill embankment, a keyway or core trench 10 to 12 feet wide should be excavated to a minimum depth of 2 to 3 feet below the original ground level. The core of the embankment is then constructed with compacted, water-impervious material.

**LEASE:** 1) An oil and gas lease is a contract that grants the lessee the rights to drill for and remove oil and gas deposits in the leased lands, subject to the terms and conditions incorporated in the lease. 2) The tract of land, on which a lease has been obtained, where producing wells and production equipment are located.

**LEK:** A traditional breeding area for grouse species where territorial males display and establish dominance.

**MINERAL DRAINAGE:** An offsetting producing well that removes oil or gas from a federal or Indian lease.

**MITIGATION MEASURES:** Methods or procedures developed for the purpose of reducing or eliminating the impacts of an action. Mitigation may be built into the proposed project or required in an alternative as a condition of approval.

**PRIMARY STANDARDS:** NAAQS standards designed to protect human health, including "sensitive" populations, such as people with asthma and emphysema, children, and senior citizens. Primary standards

are designed for the immediate protection of public health, with an adequate margin of safety, regardless of cost.

**PREVENTION OF SIGNIFICANT DETERIORATION (PSD) PROGRAM:** Incremental increases in the ambient concentration of criteria pollutants are regulated under the New Source Review - Prevention of Significant Deterioration (PSD) program. The program is designed to limit the incremental increase of specific air pollutants from major sources of air pollution above a legally defined baseline level, depending on the classification of a location. Incremental increases in PSD Class I areas are strictly limited, while increases allowed in Class II areas are less strict.

**PROPOSED ACTION:** An individual action or a combination of actions proposed on or to affect federal leases.

**SECONDARY STANDARDS:** NAAQS standards designed to protect public welfare, including soils, water, crops, vegetation, buildings, property, animals, wildlife, weather, visibility and other economic, aesthetic, and ecological values, as well as personal comfort and well-being. Secondary standards were established to protect the public from known or anticipated effects of air pollution.

**SPLIT ESTATE:** Surface and minerals of a given area in different ownerships. Frequently, the surface is privately-owned while the minerals are federally-owned.

## ABBREVIATIONS/ACRONYMS

2D	Two-dimensional
3D	Three-dimensional
7Q10	Lowest flow for 7 consecutive days over any 10 year period
amsl	Above mean sea level
AO	Authorized Officer
APD	Application for Permit to Drill
APE	Area of Potential Effect
APLIC	Avian Power Line Interaction Committee
ARM	Administrative Rules of Montana
AUM	Animal Unit Month
BCF	Billion Cubic Feet
BCPL	Bitter Creek Pipelines, LLC
BER	Montana Board of Environmental Review
BGEPA	Bald and Golden Eagle Protection Act
BGS	Below Ground Surface
BLM	Bureau of Land Management
BMP	Best Management Practice
CBNG	Coal Bed Natural Gas
CFR	Code of Federal Regulations
cfs	Cubic Feet per Second
COA	Conditions of Approval
CRIS	Cultural Resource Information System
CWA	Clean Water Act
D1	Dietz 1 Coal (Anderson)
D2	Dietz 2 Coal (Upper Dietz)
D3	Dietz 3 Coal (Lower Deitz)
DEM	Digital Evaluation Model
dh	Change in head
DMR	Discharge Monitoring Report
DNRC	Montana Department of Natural Resource Conservation
EA	Environmental Assessment
EC	Electrical Conductivity
EPA	Environmental Protection Agency
ESA	Endangered Species Act
Fidelity	Fidelity Exploration and Production Company
FLPMA	Federal Land Policy Management Act
ft	Feet
ft-amsl	Feet above mean sea level
FWS	U.S. Fish and Wildlife Service
GLO	General Land Office
GPM	Gallons per minute
GWIC	Groundwater Information Center
HCl	Hydrochloric acid
HMM	High Mean Monthly
hp	horsepower
HWA	Hayden-Wing Associates
K	Hydraulic Conductivity (units = ft/day)
KCLA	Known Coal Leasing Area
LBA	Lease by Application
LMM	Low Mean Monthly
MAAQs	Montana Ambient Air Quality Standards
MAQP	Montana Air Quality Permit
MBEWG	Montana Bald Eagle Management Plan



MBMG	Montana Bureau of Mines and Geology
MBOGC	Montana Board of Oil and Gas Conservation
MCA	Montana Codes Annotated
MCF	Million cubic feet
MCFO	Miles City Field Office
MDEQ	Montana Department of Environmental Quality
MEPA	Montana Environmental Policy Act
mg/L	Milligrams per Liter
mi	Miles
mi <sup>2</sup>	Square Miles
MLA	Mineral Leasing Act
MPDES	Montana Pollution Discharge Elimination System
MT FEIS	Montana Statewide Final Environmental Impact Statement (2003)
MTFWP (FWP)	Montana Fish, Wildlife and Parks
NAAQS	National Ambient Air Quality Standards
NASIS	National Soils Information System
NCT	Northern Cheyenne Tribe
NEPA	National Environmental Policy Act
NHD	National Hydrology Database
NHPA	National Historic Preservation Office
NOI	Notice of Intent
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OZM	Ozone Limiting Method
PAPA	Pinedale Anticline Project Area
PET	Potential to Emit
POD	Plan of Development
ppm	Parts per million
PRG	Powder River Gas
PSD	Prevention of Significant Deterioration
BPIP	Building Profile Input Program
psi	Pounds per square inch
RM	River Miles
RMP	Resource Management Plan
ROW	Right-of-way
RTI	Renewable Technologies Incorporated
S	Storativity (unitless)
SAR	Sodium Adsorption Ratio
SCC	Spring Creek Coal Company
SEIS	Supplement to Montana Statewide Oil and Gas Final Environmental Impact Statement and Amendment of the Powder River and Billings RMPs
SHPO	State Historic Preservation Office
SOB	Statement of Basis
SSS	Special Status Species
SWPPP	Storm Water Pollution Prevention Plan
t/ac/yr	tons per acre per year
T/E	Threatened/Endangered
TAC	Technical Advisory Committee for the Powder River Basin Controlled Groundwater Area
TD	Total Depth
THPO	Tribal Historic Preservation Officer
TMDL	Total Maximum Daily Load
TRRC	Tongue River Railroad Company
uS/cm	Microseamens per centimeters (a measure of EC)
USGS	United States Geological Survey
WMP	Water Management Plan

WMPP	Wildlife Monitoring and Protection Plan
WNV	West Nile Virus
WOGCC	Wyoming Oil and Gas Conservation Commission
WQA	Water Quality Act
WY FEIS	Wyoming Environmental Impact Statement (2003)
yrs	Years