

ATTACHMENT 2

ANTELOPE MINE CBNG PROJECT ENVIRONMENTAL ASSESSMENT

**Bowers Oil & Gas, Inc.
Antelope Coal Mine POD
Coalbed Natural Gas Project
Biological Assessment
Casper and Buffalo Field Offices**

INTRODUCTION

This biological assessment was prepared to display the possible effects to Endangered, Threatened, Experimental, Proposed, or Candidate species known to occur, or that may occur within the area influenced by the proposed action. It was prepared in accordance with Section 7 of the Endangered Species Act.

Biological Assessment objectives are:

1. To comply with the requirements of the Endangered Species Act such that actions of Federal agencies should not jeopardize or adversely modify critical habitat of federally-listed species.
2. To provide a process and standard by which to ensure that threatened, endangered, proposed, and candidate species receive full consideration in the decision-making process.

In addition, the USDI Bureau of Land Management (BLM) Wyoming has prepared a list of sensitive species to focus species management efforts towards maintaining habitats under a multiple use mandate. The authority for this policy and guidance comes from the Endangered Species Act of 1973, as amended; Title II of the Sikes Act, as amended; the Federal Land Policy and Management Act (FLPMA) of 1976; and the Department Manual 235.1.1A.

The goals of sensitive species management are to:

- ∞ Maintain vulnerable species and habitat components in functional BLM ecosystems.
- ∞ Ensure sensitive species are considered in land management decisions.
- ∞ Prevent a need for species listing under the Endangered Species Act.
- ∞ Prioritize needed conservation work with an emphasis on habitat.

Proposed Action and Location

Bowers Oil & Gas Co., Inc. has applied for a permit to drill and operate 9 coalbed natural gas wells, located in Township 41N, Range 71 W, Sections 28-29; Converse and Campbell Counties, Wyoming. The Plan of Development (POD) is for the Antelope Coal Mine Unit. The existing facilities within the lease area include 2.61 miles of 2-track and 1.31 miles of gas pipeline, which is a third party line passing through the area. The project proposes one gathering/metering facility, one compressor, 1.25 miles of improved (graveled) 2-track without utilities, 0.53 mile of proposed 2-track with buried utility corridor, 0.75 mile of proposed 2-track without utility corridor, 2.61 miles of existing 2-track without utility corridor, 2.17 miles of buried utilities not associated with a road, 3.0 miles of overhead electricity, and 2 discharge points (Table 1). Utilities consist of natural gas pipelines and water pipelines. The project summary was derived from the November 25, 2003 Master Surface Use Plan as supplemented by November 18, December 18 2003, and February 11 letters.

More description of design features, construction practices, and water management strategies associated with the Antelope Coal Mine POD are included in the Master Surface Use Plan (MSUP), Drilling Plan, and Water Management Plan (WMP). More information on CBNG well drilling, production and standard practices is also available in the Powder River Basin Final Environmental Impact Statement (BLM 2003: Volume 1, pages 2-9 through 2-40).

This biological assessment is being prepared early in the permitting process. Several well and road locations are likely to change due to resource concerns. It is expected that project modifications should decrease the overall acreage of direct disturbances; final figures shall be supplied upon project approval or construction completion.

Habitat Description

The project is located within the Powder River Basin at the Converse/Campbell County line, approximately one mile east of Wyoming Highway 59. A description of the project area is found in the enclosed report by Thunderbird Wildlife Consulting, Inc. (TWC 2004) at pages 1-3.

Field Visits

Surveys for Ute ladies'-tresses were conducted on September 12, 2003 by BKS Environmental Associates, Inc. (BKS). Earlier Ute ladies'-tresses surveys had been conducted for Antelope Coal Mine in 2001 or 2000 (BKS 2003). TWC's field surveys were conducted December 12, 2003, January 28, 2004 and February 6, 2004 for bald eagles. TWC's report discusses other wildlife surveys, which were conducted during the past 10-to-20 years. BLM conducted field visits on September 10, 2003 and December 2003.

Table 1. Proposed Facilities and Summary of Disturbance: Bowers Oil and Gas, Inc
Antelope Coal Mine Coalbed Natural Gas Plan of Development.

Facility	Number or Miles	Factor	Acreage of Disturbance	Duration of Disturbance
Wells	9	0.1ac/well	0.9	Short Term
Compressor Stations	1	2 ac/Facility	2.0	Long Term
Gathering/Metering Facilities	1	2 ac/facility	2.0	Long Term
Monitor Wells	0	0.1ac/well	0	Long Term
Impoundments				Long Term
Existing	1	Site Specific	0	
Proposed	0	Site Specific	0	
Water Discharge Points	2	Site Specific or 0.01 ac/WDP	0.02	
*Wetlands Filled	----	Site Specific	0.0	
Channel Disturbance				
Headcut Mitigation		Site Specific	0.0	
Channel Modification		Site Specific	0.0	
Pipeline Crossing*		Site Spec or 0.01 acres	0.0	
Road Crossing*		Site Spec or 0.01 acres	0.0	
Exist. Improved Rds w new utilities	0.0	24' Corridor	0.0	Long Term
Improved Roads With utilities	0.0		0.0	
Without utilities	0.0		0.0	
Existing 2-track Roads w new utilities	0.0	14' Corridor	0.0	Long Term
Proposed 2-Track Roads w utilities	0.53	14' Corridor	0.89	
Proposed 2-track Roads w/o utilities	2.00	14' Corridor	3.39	
Pipelines and Buried Electrical lines (not corridorred)	2.17	14' Corridor	3.68	Short Term
Overhead Electrical Lines	3.00	12' Corridor	4.36	Short Term
Total Long Term Disturbance			8.30	
Total Short Term Disturbance			8.94	
Total Disturbance			17.24	

Consultation History

Informal consultation with the Service was conducted during Brad Roger's visit to the BLM office on September 9, 2003.

Determinations

Threatened and Endangered Species

The proposed Antelope Mine CBNG Plan of Development **may affect and is likely to adversely affect** bald eagles.

Several trees are available for roosting or nesting, but neither activity has been documented. Wildlife surveys of various kinds have been conducted in the specific and general area for 20 years. Also, the BLM contract bald eagle survey (Patterson and Anderson 1985) documented the Antelope Creek roost, which is about 8 miles east of the project area, but no roost nor nest was documented here. Nests of other raptor species have been documented here, but not of bald eagles. There are no concentrations of food bases, including big game or livestock or fisheries/waterfowl.

Bald eagles forage opportunistically throughout the Powder River Basin including the project area. The presence of overhead power lines may adversely affect foraging bald eagles. Additional overhead electricity is proposed with this project, which may increase the risk to foraging eagles. Measures have been included within the project design to minimize the risk, such as building overhead electric lines to raptor safe standards, and access roads are proposed to remain as 2-tracks. A 25-mph maximum design criterion for all roads will be included as a COA for possible future development/improvement of roads. Despite these measures, some risk of harm remains.

There would be **no affect** to black-footed ferrets and their habitat from implementation of the proposed CBNG development.

One small (14 acres) prairie dog colony is located within the project area, and an existing 2-track is about 200 feet south of this colony (TWC 2004). The 2-track would remain unimproved, but vehicle traffic would increase on the 2-track. Two other small colonies (3 acres and 5 acres) are within the one-mile inventory zone of the project area (TWC 2004). No development is proposed within any prairie dog habitat.

The proposed CBNG development may affect, but is not likely to adversely affect Ute ladies'-tresses and their habitat.

The orchid prefers periodically disturbed sites with non-clay soils which remain wet into late summer. A population in northern Converse County within the Antelope Creek drainage is the nearest known population, approximately 20 miles upstream of the project area. BKS evaluated this established population and the habitat on September 5, 2003 (BKS 2003).

Spring Creek and an unnamed tributary to Spring Creek flow through the proposed project area. Lack of supporting hydrology was described as limiting the potential Ute's habitat to pockets along Spring Creek (BKS 2003). BKS's survey of this habitat resulted in not finding any orchid plants within the survey area. Earlier Ute ladies'-tresses surveys, which had been conducted for Antelope Coal Mine in 2001 or 2000, also resulted in negative findings (BKS 2003).

Although multiple surveys have been conducted in the area with negative results, the plant is fickle in being observable. That is, above-ground growth or flowering is not consistently available where plants are known to be present. Therefore, it is still possible that the plant may be present, but not observed. Proposed development includes use of one existing 2-track and two proposed new pipeline crossings of Spring Creek. The existing 2-track crosses the creek just about at BKS point # 26, which is a dry portion of the creek. A corridor containing 3"-4" gas and water pipelines with overhead electricity would cross the creek downstream of BKS point # 26. A single gas suction (4"-8") line would cross the creek upstream of BKS point # 25, which is also a dry portion of the creek. In summary, none of the development would cross at portions of the stream which hold water (personal conversation with Ken McMurrrough, BLM Surface Protection Specialist). These crossings should cause a low level of impact to the stream, and the impacts should be for a short term of time.

The proposed project area is not within the expected range of **Preble's Meadow Jumping Mouse** or **Colorado Butterfly Plant**, and does not contain sand dunes, which is the expected habitat for **blowout penstemon**.

Candidate Species

Development of the proposed Antelope Coal Mine POD may adversely affect **black-tailed prairie dogs**. One small (14 acres) prairie dog colony is located within the project area, and an existing 2-track is about 200 feet south of this colony (TWC 2004). The 2-track would remain unimproved, but vehicle traffic would increase on the 2-track, and may result in collisions with prairie dogs.

Protective/Minimization Measures for Threatened, Endangered, Proposed, or Candidate Species (See Powder River Oil and Gas Project Biological Opinion)

1. If any dead or injured threatened, endangered, proposed, or candidate species is located during construction or operation, the U.S. Fish and Wildlife Service's Wyoming Field Office (307-772-2374) and law enforcement office (307-261-6365) and BLM Casper Field Office (307-261-7600) shall be notified within 24 hours (T&C1)
2. Operator constructed roads will be designed for a maximum travel speed of 25 mph to minimize road related wildlife mortality (CM11). Maximum travel speeds on operator maintained roads shall not exceed 25 mph.
3. Native seed mixes will be used to re-establish short grass prairie vegetation during reclamation (T&C19).

Table 2. Habitat descriptions and projected effects on Threatened, Endangered, and Candidate species.

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
Endangered Black-footed ferret (<i>Mustela nigripes</i>)	Black-tailed prairie dog colonies or complexes > 80 acres.	NS	NE	Project facilities will not occur within the prairie dog colony.
Threatened Bald eagle (<i>Haliaeetus leucocephalus</i>) Utes ladies' -tresses orchid (<i>Spiranthes diluvialis</i>)	Mature forest cover often within one mile of large water body. Riparian areas with water present into late summer.	S NS	LAA NLAA	Potential habitat; overhead power lines are proposed. Some pools along the stream; no orchids were found; no disturbance at the pools.
Candidate Black-tailed prairie dog (<i>Cynomys ludovicianus</i>)	Prairie habitats with deep, firm soils on slopes < 10%.	K	LAA	No development is proposed within the prairie dog colony.

Presence

- K** Known, documented observation within project area.
- S** Habitat suitable and species suspected, to occur within the project area.
- NS** Habitat suitable but species is not suspected to occur within the project area.
- NP** Habitat not present and species unlikely to occur within the project area.

Effect Determinations for Listed Species

- LAA** Likely to adversely affect
- NE** No Effect.
- NLAA** May Affect, not likely to adversely effect individuals or habitat.

Effect Determinations for Candidate Species

- J** Is likely to jeopardize candidate species.
- NJ** Is not likely to jeopardize candidate species.

Sensitive Species (Determinations are included in Table 3.)

Greater Sage Grouse

There are no sage grouse leks in or near the proposed project area. Sage grouse occur occasionally in the area, but there are no special habitats within the proposed project area. See the Thunderbird Wildlife Consulting, Inc. report (TWC 2004).

Mountain Plover

Mountain plover nesting has been documented within the prairie dog colony. No development is proposed within the colony, but increased traffic would use 2-track, which is located 200 feet south of the colony. See the Thunderbird Wildlife Consulting, Inc. report (TWC 2004).

Raptors

Surveys for raptor nests were conducted throughout the project area and a one-mile buffer during 2003, and much of the project area has a 20-year history of raptor nest surveys (TWC 2004). Thirteen intact raptor nests or nest sites were described by TWC (2004). See the Thunderbird Wildlife Consulting, Inc. report (TWC 2004) for details of raptor species, nest locations, and nest history.

No surface disturbing activity will be allowed within ½ mile of all documented raptor nest from February 1 through July 31, annually, prior to a raptor nest occupancy survey for the current breeding season. This timing stipulation affects the entire project area.

Required Mitigation Measures (See Powder River Oil and Gas Project Final EIS)

4. If any dead or injured sensitive species is located during construction or operation, the BLM Casper Field Office (307-261-7600) shall be notified within 24 hours.
5. The Record of Decision for the Powder River Basin EIS includes a programmatic mitigation measure that states, “The companies will conduct clearance surveys for threatened and endangered or other special-concern species at the optimum time” (M32). The measure requires companies to coordinate with the BLM before November 1 annually to review the potential for disturbance and to agree on inventory parameters. Should this project not be completed by January 15, 2005, Bowers Oil & Gas, Inc. will coordinate with the BLM to determine if additional resurvey will be required.
6. The contract biologist shall contact the BLM prior to initiating any wildlife surveys.
7. No surface disturbing activity will be allowed within ½ mile of all documented raptor nest from February 1 through July 31, annually, prior to a raptor nest occupancy survey for the current breeding season. This timing stipulation affects the entire project area.
8. Surveys to document raptor nest activity in the area shall be conducted between April 15 and June 30. Surveys outside this window may not depict nesting activity. If a survey identifies active raptor nests, a ½ mile timing buffer will be implemented. The timing buffer restricts any surface disturbing activities within ½ mile of occupied raptor nests from February 1 to July 31.

9. Well metering and other site visits within 0.5 miles of occupied raptor nests shall be minimized as much as possible during the breeding season (February 1 – July 31), and restricted to between 0900 and 1500 hours.
10. If an undocumented raptor nest is located during project construction or operation, the Casper Field Office (307-261-7600) shall be notified within 24 hours.
11. If a raptor nest within 0.5 miles of the project is determined to be occupied, nest occupancy checks shall be completed for the first five years following project completion. The occupancy check shall be conducted no earlier than June 1 or later than June 30 and any evidence of nesting success/production shall be recorded. Survey results will be submitted to a Casper BLM biologist in writing no later than July 31 of each survey year.
12. If a mountain plover is located during project construction or operation, the Casper Field Office (307-261-7600) shall be notified within 24 hours.
13. Proposed well BOG Fed 4-29 may be constructed outside the mountain plover nesting season (after August 1 and before March 15). A mountain plover nesting survey shall be conducted by a Bureau approved biologist following the most current version of the Service's Mountain Plover Survey Guidelines (USFWS 2002 or most current version) in the 2004 survey period. The survey period is from May 1 to June 15.
14. If a mountain plover nest is documented, the following conditions shall apply:
 - A. A seasonal disturbance-free buffer zone of 0.25 mile will be maintained around all active mountain plover nest sites outside of black-tailed prairie dog towns between March 15 and July 31 (T&C13).
 - B. Documented nesting areas will be surveyed for five years following project completion. Surveys will be conducted by a Bureau approved biologist and follow the most current version of the Service's Mountain Plover Survey Guidelines (USFWS 2002 or most current version).
 - C. Maximum allowed travel speed on roads within 0.5 mile of identified mountain plover nesting areas shall not exceed 25 miles per hour from March 15 to July 31 (T&C17). Work schedules and shift changes should be set to avoid the periods from one-half hour before to one-half hour after sunrise and sunset during June and July, when mountain plovers and other wildlife are most active T&C22).
 - D. No dogs will be permitted at work sites to reduce the potential for harassment of plovers (T&C23).

Recommended Mitigation Measures

- #12. Remote technology (telemetry, central metering facility, etc.) should be utilized to reduce human activities which are potentially disturbing to wildlife.

Willie Fitzgerald
Wildlife Biologist

Date

Table 3. Habitat Descriptions and Project Effects on BLM Casper Field Office Sensitive Species.

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
Amphibians				
Northern leopard frog (<i>Rana pipiens</i>)	Beaver ponds, permanent water in plains and foothills	S	MIH	Additional water will affect existing waterways.
Birds				
Baird's sparrow (<i>Ammodramus bairdii</i>)	Grasslands, weedy fields	S	MIH	Sagebrush cover will be affected.
Brewer's sparrow (<i>Spizella breweri</i>)	Basin-prairie shrub	S	MIH	Sagebrush cover will be affected.
Burrowing owl (<i>Athene cucularia</i>)	Grasslands, basin-prairie shrub	S	MIH	No disturbance within the prairie dog colony.
Ferruginous hawk (<i>Buteo regalis</i>)	Basin-prairie shrub, grasslands, rock outcrops	S	MIH	Grassland and shrubland habitats will be affected.
Greater sage-grouse (<i>Centrocercus urophasianus</i>)	Basin-prairie shrub, mountain-foothill shrub	S	MIH	Sagebrush cover will be affected.
Loggerhead shrike (<i>Lanius ludovicianus</i>)	Basin-prairie shrub, mountain-foothill shrub	S	MIH	Sagebrush cover will be affected.
Long-billed curlew (<i>Numenius americanus</i>)	Grasslands, plains, foothills, wet meadows	S	MIH	Grasslands and floodplains will be affected.
Mountain plover (<i>Charadrius montanus</i>)	Sparse shrub and grasslands with vegetation < 4 inches and slopes < 5%	S	MIH	Suitable nesting habitat present.
Northern goshawk (<i>Accipiter gentilis</i>)	Conifer and deciduous forests	NP	NI	No forest habitat present.
Peregrine falcon (<i>Falco peregrinus</i>)	cliffs	NP	NI	No nesting habitat.
Sage sparrow (<i>Amphispiza bilineata</i>)	Basin-prairie shrub, mountain-foothill shrub	S	MIH	Sagebrush cover will be affected.
Sage thrasher (<i>Oreoscoptes montanus</i>)	Basin-prairie shrub, mountain-foothill shrub	S	MIH	Sagebrush cover will be affected.
Trumpeter swan (<i>Cygnus buccinator</i>)	Lakes, ponds, rivers	NP	NI	Suitable habitat is not present.

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
White-faced ibis (<i>Plegadis chihi</i>)	Marshes, wet meadows	NP	NI	Permanently wet meadows are not present.
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	Riparian cottonwood forest with a dense shrub understory.	NP	NI	Cottonwood riparian is present, but not with dense understory.
Mammals				
Fringed myotis (<i>Myotis thysanodes</i>)	Conifer forests, woodland chaparral, caves and mines	NP	NI	Habitat is not present.
Long-eared myotis (<i>Myotis evotis</i>)	Conifer and deciduous forest, caves and mines	NP	NI	Habitat is not present.
Spotted bat (<i>Euderma maculatum</i>)	Cliffs over perennial water, basin-prairie shrub	NP	NI	Habitat is not present.
White-tailed prairie dog (<i>Cynomys leucurus</i>)	Basin-prairie shrublands and grasslands	NP	NI	Habitat is not present.
Swift fox (<i>Vulpes velox</i>)	Grasslands	S	MIH	Grassland habitat will be affected.
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	Forests, basin-prairie shrub, caves and mines	NP	NI	Habitat is not present.
Plants				
Porter's sagebrush (<i>Artemisia porteri</i>)	Sparsely vegetated badlands of ashy or tuffaceous mudstone and clay slopes 5300-6500 ft.	NP	NI	Habitat is not present.
Nelson's milkvetch (<i>Astragalus nelsonianus</i>)	Alkaline clay flats, shale bluffs and gullies, in sparsely vegetated sagebrush, juniper, & cushion plant communities at 5200-7600 ft.	NP	NI	Habitat is not present.
Many-stemmed spider-flower (<i>Cleome multicaulis</i>)	Semi-moist, open saline banks of shall ponds & lakes with baltic rush & bulrush 5900 ft.	NP	NI	Habitat is not present.
William's wafer-parsnip (<i>Cymopterus williamsii</i>)	Open ridgetops and upper slopes with exposed limestone outcrops or rockslides, 6000-8300 ft.	NP	NI	Habitat is not present.
Laramie false sagebrush (<i>Sphaeromeria simplex</i>)	Cushion plant communities on rocky limestone ridges & gentle slopes 7500-8600 ft.	NP	NI	Habitat is not present.

Presence

K Known, documented observation within project area.

S Habitat suitable and species suspected, to occur within the project area.

NS Habitat suitable but species is not suspected to occur within the project area.

NP Habitat not present and species unlikely to occur within the project area.

Project Effects

NI No Impact.

MIIH May Impact Individuals or Habitat, but will not likely contribute to a trend towards federal listing or a loss of viability to the population or species.

WIFV Will Impact Individuals or Habitat with a consequence that the action may contribute to a trend towards Federal listing or cause a loss of viability to the population or species. (Trigger for a Significant Action as defined in NEPA)

BI Beneficial Impact

Literature Cited

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