Decision Record and Finding of No Significant Impact

Environmental Assessment Oil and Gas Leasing Buffalo Field Office 070–05–064

Introduction

The U.S. Bureau of Land Management prepared an Environmental Assessment (EA) entitled, Environmental Assessment of Oil and Gas Leasing, Buffalo Field Office (070–05–064). The purpose of this EA was to examine particular environmental effects of the oil and gas lease issuance decisions made between February 2000 and August 2004 and to reconsider all relevant factors and issues that were known during the time of issuance to decide anew whether, after considering such information, these leases should have been issued at all, and if so, what stipulations should have been imposed to protect other resource programs. The EA responded to rulings of the Interior Board of Land Appeals (IBLA) and the Tenth Circuit Court of Appeals (the Court), which held that certain effects of the development of coal bed natural gas (CBNG) were not analyzed or contemplated in the 1985 BLM Buffalo Resource Management Plan (RMP) Final Environmental Impact Statement (EIS). *See Pennaco Energy v. DOI, 377 F.3d 1147 (10th Cir., filed August 10, 2004)*.

In the course of its opinion, the Court stated that the NEPA analysis upon which the BLM relied in issuing three leases "did not consider pre-leasing options, such as not issuing leases at all." The BLM evaluated with the EA whether to affirm, modify, or cancel the leases, which include the right to develop CBNG. Along with the three leases that were the subject of the Court and IBLA's decisions, BLM also included in the scope of the EA 418 additional oil and gas leases that were issued since February 2000 within the Buffalo Field Office (BFO). The alternatives considered in the EA were analyzed with the environmental issues foreseeable at the time the leases were offered for sale. The focus of the analysis and EA is solely on the effects of CBNG development on these leases.

The rationale of the Court ruling requires that BLM consider those environmental issues found to have been inadequately considered in the 1985 Buffalo RMP EIS. The EA, however, examines a broader array of environmental issues associated with CBNG leasing decisions that were reasonably foreseeable prior to the issuance of these leases. An array of environmental issues was subject to in-depth reexamination in the Powder River Basin Oil and Gas Project (PRB O&G) EIS and RMP Amendment Record of Decision (ROD) that was signed April 30, 2003. The ROD amended the 1985 Buffalo RMP to raise the anticipated level of use of the resource area for oil and gas and to develop appropriate resource use restrictions to mitigate impacts to other resources.

In conducting this analysis, BLM also needed to consider the protection of the financial interest of the United States by preventing drainage of federal minerals by surrounding state and private (fee) wells. The potential for drainage of CBNG of federal leases contained in the scope of this analysis was more acute than in the PRB O&G Final EIS due to their limited areal extent and scattered distribution. Development (both federal and state/fee) already has occurred or is occurring around the leases. Consequently, the potential for drainage is considerably higher if CBNG wells are drilled around the individual lease parcels and no CBNG wells are drilled on the leases.

As noted above, BLM included in the scope of the EA 421 oil and gas leases within the BFO that were issued between February 2000 and August 2004. After publication of the Notice of Intent (NOI), BLM determined that 136 of these leases do not overlie the coal beds that are the sources of CBNG in the PRB (Figure 1–1 in the EA). Because CBNG cannot be developed on these 136 leases and the Court's decision concerns the development of CBNG only, the EA only considered the 285 leases where CBNG can be developed because they at least partially overlie one or more of the coal beds. Thus, the 136 leases that do not overlie the coal bed are not discussed in any detail in the EA.

The 285 leases are distributed across 10 sub-watersheds in the PRB (Table 1–1 in the EA). These leases encompass almost 171,000 acres. Operators have already drilled 114 wells on 30 of the leases, half of which are in the Middle Powder River sub-watershed.

Summary of the Alternatives

Five alternatives were considered in detail: (1) No Action, (2) Standard Lease Terms and Lease Notice, (3) Modified Lease Terms, (4) No Surface Disposal of Produced Water, and (5) No CBNG Leasing.

Alternative 1. — Under this alternative, BLM would affirm the issuance of the 285 leases with the stipulations prescribed in the 1985 RMP. Mitigation from the ROD for the PRB O&G Final EIS (Appendix A) would be applied post leasing as Conditions of Approval (COAs) when Applications for Permit to Drill (APDs) are approved.

Alternative 2. — Under this alternative, BLM also would affirm the issuance of the 285 leases. However, BLM would modify the lease terms so that only the standard lease terms (SLT) and Lease Notice No. 1 are applied. No other measures, which include stipulations from the 1985 RMP, would be applied during leasing.

Although BLM may apply protective measures during post leasing as COAs when APDs, Sundry Notices (SNs), or Plans of Development (PODs) are approved, they are not considered part of this alternative. Water handling procedures would be the same as for Alternative 2A in the PRB O&G Final EIS. The RMP would be amended to reflect the changes in procedures for leasing and COAs.

The RMP would be amended to reflect the changes in leasing stipulations.

Alternative 3. — Under this alternative, BLM would affirm the issuance of the affected leases with the following exception: leases or portions of leases located within proposed Areas of Critical Environmental Concern (ACECs) would be modified to prohibit development of CBNG. Conventional oil and gas operations could still be permitted. Lease terms of the affirmed leases would be modified to add the following stipulations:

- No Surface Occupancy (NSO) within 500 feet of surface water and riparian areas;
- NSO within 0.25 mile of greater sage grouse strutting and dancing grounds known as leks;
- Timing Limitation Stipulation (TLS) that precludes new surface-disturbing activities in greater sage-grouse nesting habitats within a radius of 3 miles from a lek from March 1 through June 15 (this 3-mile radius includes an inner radius of 0.25 miles where NSO is allowed and an outer radius of 2.75 miles that is subject to the TLS).

The RMP would be amended to reflect the changes in leasing stipulations.

Alternative 4 — Under this alternative, BLM would affirm the issuance of the affected leases, but would modify the lease terms of the affirmed leases to add the following special stipulation that minimizes CBNG-specific impacts to water resources.

- Surface disposal of water produced by CBNG wells would not be approved. Produced CBNG water may be injected only if the injection zone is capable of accepting the anticipated volume without adverse impacts to ground water resources.

The RMP would be amended to reflect the changes in leasing guidance.

While developing this alternative, BLM considered the limitations of injection discussed in the PRB O&G Final EIS, the extent of injection already developed in the PRB and the extent of injection likely to be developed by operators in the near future. After evaluating these limitations and considerations, BLM estimated development of CBNG would be limited to about 15 percent of development that would occur with the injection stipulation. Thus, development under this alternative was projected at 381 CBNG wells instead of 2,537 wells.

Alternative 5 — Under this alternative, BLM would not affirm the issuance of the affected leases. Instead, BLM would rescind the leasing decision for the 285 leases for CBNG. This alternative would affirm issuance of the leases for conventional oil and gas operations and would prohibit development of CBNG.

The RMP would be amended to reflect no CBNG development on the leases.

The five alternatives considered in detail vary in the potential number of new wells, potential number of new pads, and projections of short-term and long-term disturbances. Alternatives 1 and 2 would have the greatest potential numbers of

new wells and pads (Table 1). Implementation of Alternative 5 would result in no new CBNG wells or pads being constructed.

Implementation of all alternatives evaluated in the EA except Alternative 5 would cause both short-term and long-term disturbances. Alternative 5 would result in no new short- or long-term disturbances from CBNG. Short-term disturbances would be highest under Alternatives 1 and 2. Short-term disturbances for Alternatives 1 and 2 and Alternative 4 would vary by 11,563 acres (Table 2). Estimates of long-term disturbances resulting from the alternatives would vary similarly (Table 2). Short-term and long-term disturbances were estimated using the same methods used in the PRB O&G Final EIS.

Table 1 Distribution of CBNG Wells and Pads for the 285 Leases by Sub-watershed — Alternatives 1, 2, 3, and 4

	Potential Number of New Facilities by Alternative					
	1 and 2		3		4	
Sub-watershed	Wells	Pads	Wells	Pads	Wells	Pads
Antelope Creek	20	20	20	20	18	18
Clear Creek	564	294	564	294	72	39
Crazy Woman Creek	378	356	378	356	0	0
Little Powder River	160	156	160	156	37	37
Middle Powder River	163	81	163	81	49	24
Salt Creek	23	23	23	23	0	0
Upper Belle Fourche River	86	81	86	81	22	19
Upper Cheyenne River	15	15	15	15	0	0
Upper Powder River	405	258	345	239	132	95
Upper Tongue River	723	373	723	373	51	31
Total[1]	2,537	1,657	2,477	1,638	381	263

Note:
1. Total may not match precisely with the value obtained by adding unit numbers because of rounding conventions.

Table 2 Summary of Estimated CBNG Disturbances Associated with Alternatives, 1, 2, 3, and 4

	Disturbance by Alternative (acres)					
	Alternatives 1 and 2		Alternative 3		Alternative 4	
Sub-watershed	Short Term	Long Term	Short Term	Long Term	Short Term	Long Term
Antelope Creek	540	198	540	198	478	170
Clear Creek	2,008	1,134	2,008	1,134	191	75
Crazy Woman Creek	2,570	1,179	2,570	1,179	0	0
Little Powder River	1,661	670	1,661	670	369	134
Middle Powder River	659	336	659	336	159	64
Salt Creek	713	263	713	263	0	0
Upper Belle Fourche River	442	192	442	192	94	36
Upper Cheyenne River	96	42	96	42	0	0
Upper Powder River	1,562	784	1,419	698	465	178
Upper Tongue River	3,276	1,716	3,276	1,716	209	79
Total[1]	13,528	6,516	13,385	6,430	1,965	736

Note:
1. Total may not match precisely with the value obtained by adding unit numbers because of rounding conventions.

Decision

The analysis documented in the EA addresses one of the primary deficiencies identified in the Court's ruling. The range of alternatives BLM evaluated in this analysis is reasonable for a leasing decision and includes a no CBNG leasing alternative. Also, the alternatives comprise a leasing analysis rather than a project-level analysis.

Based on the information contained in the EA and the record, the decision is hereby made to select Alternative 1 — No Action. Overall, Alternative 1 best meets the purpose and need while maintaining appropriate protection for the resources of the PRB. The analysis of this alternative remedies the shortcomings identified in the Court's ruling 1) That BLM could not rely on the 1985 EIS to issues leases where CBNG development is likely because such development involves a magnitude of water production from CBNG extraction and critical air quality issues that were not considered in that EIS; 2) BLM couldn't rely upon the Wyodak EIS because it was a project-level EIS rather than a leasing EIS that did not consider reasonable alternatives available in a leasing decision, including whether specific parcels should be leased, appropriate lease stipulations, and NSO and Non-NSO areas.

The analysis documented in the EA demonstrates that Alternative 1 came to the same conclusion that the PRB EIS did that the lease stipulations and Conditions of Approval (COA) identified in the 1985 RMP EIS, as amended in the PRB EIS ROD, would ensure protection of the natural resources. This satisfies the courts first deficiency. The extensive water and air analysis conducted for the PRB EIS has been incorporated by reference into the EA.

Alternative 1 also protects the financial interest of the United States by preventing drainage of federal minerals. Development of CBNG from these leases would occur in concert with development on adjoining private and public leases. Federal and State royalties would be maximized.

Alternative 1 would contribute CBNG toward meeting the nation's future needs for energy. The level of contribution of this alternative would be the same as Alternative 2 and slightly higher than Alternative 3. However, the level of contribution would be substantially higher than for Alternatives 4 or 5.

Finally, Alternative 1 and this decision are in conformance with the RMP as amended by the ROD for the PRB O&G Final EIS. Therefore, no amendment to the plan is necessary.

Although Alternative 2 also would protect the financial interest of the United States by preventing drainage of federal minerals, it would not provide appropriate protection for the resources of the PRB. The mitigation measures and COAs identified in the Record of Decision for the PRB O&G Final EIS are not part of this alternative. Without these measures, the effects on the resources of the PRB would be unacceptable, such as substantially affecting the leks and nests of sage-grouse by allowing the construction of CBNG facilities to remove habitat within 2 to 3 miles of leks, allowing the construction of power lines near leks and nests of sage-grouse (raptors would perch on and hunt from the poles), and allowing

disruptive construction activities to occur during the critical breeding period. Federal and State royalties would be maximized.

Implementing Alternative 3 would provide additional protection for the resources of the PRB (relative to Alternative 1). Expanding the TLS for sage-grouse would place an additional 2,018 acres of sage-grouse nesting habitats (relative to Alternatives 1, 2, and 4) under this stipulation which would protect this additional acreage from disturbance during the breeding season. The NSO stipulation for within 500 feet of surface water and riparian areas also would provide some limited additional protection from disturbance for these resources (depending on where the well pads and other facilities would actually be placed during the APD stage). However, canceling the portions of the 285 leases in proposed ACECs to the development of CBNG would not protect these ACECs. Development within the ACECs would continue for conventional oil and gas and for CBNG on other leases that are not included in this analysis. This alternative also would not protect the financial interest of the United States as well as Alternative 1 because minerals (CBNG) could be drained from the portions of the 285 leases in the proposed ACECs where development of CBNG would not occur. This could occur where development proceeded immediately adjacent to those portions of federal leases within ACEC's that would not be available for development. Federal and State royalties would be less than Alternatives 1 and 2.

Implementing Alternative 4 may provide some additional protection for the resources of the PRB, but would not protect the financial interest of the United States by preventing drainage of federal minerals because only 381 wells would be drilled compared to 2,537 in Alternatives 1 and 2. However, the increase in protection would be minimal because disposal of water produced by the development of CBNG from leases that adjoin the 285 leases included in this analysis would still involve surface disposal. Because the 285 leases are scattered throughout the PRB, and are surrounded by other leases, restricting the disposal of produced water to injection would not materially reduce the cumulative surface discharge of produced water to the various drainages. In other words, the reduction in effects associated with surface discharges of produced water probably would not be distinguishable. Finally, as discussed in the PRB O&G Final EIS, the aquifers may not be able to accommodate the injection of the produced water. Federal and State royalties would be much less than Alternatives 1, 2, and 3.

Implementation of Alternative 5 would protect the resources from the effects of the development of CBNG directly associated with the 285 leases. However, this protection would be masked and diluted by the development of CBNG from fee, state, and federal leases that surround the 285 leases. The 285 leases involve individually small parcels of land that are distributed throughout the PRB and surrounded by other federal, state, and fee leases. Consequently, the benefits of not developing CBNG on these parcels would be limited, especially for resources that are widely distributed in the PRB, such as wildlife, water, and air.

In addition, this alternative would not protect the financial interest of the United States because it would allow the drainage of federal minerals from the 171,000 acres of federal mineral ownership. These leases encompass a small portion of the overall area leased in the BFO for CBNG (less than 4 percent) and they are

surrounded by other federal, state, and fee estates that are leased or may be leased. Without development of the CBNG portion of the federal minerals on the 285 leases, federal and state royalties would not be collected. However, at least some ad valorem and severance taxes would be collected on production from adjoining federal leases, which could include some CBNG drained from the 285 leases.

Finding of No Significant Impact

A determination of significance under NEPA requires considerations of both context and intensity. The significance of an action must be analyzed in several contexts. These include society as a whole in terms of the affected region, the affected interests, and the locality (PRB). Intensity refers to the severity of impact.

Impacts that may be both Beneficial and Adverse

Implementation of Alternative 1 would result in both beneficial and adverse effects. Effects to socioeconomic resources, particularly employment, royalties, and taxes, would benefit the communities in the analysis area. Natural resources would experience adverse direct and indirect effects from the disturbances that would occur once development of CBNG begins. However, Alternative 1 best meets the purpose of and need for the project while maintaining appropriate protection for the resources of the PRB through mitigation in the form of stipulations and COAs.

The Degree the Proposed Action Affects Public Health and Safety

Alternative 1 would have minimal effects on the health and safety of the public in the analysis area. Moreover, implementation of the selected alternative would not increase any risks to the public's health and safety. Activities associated with the development of CBNG are well developed, well known, standardized, and distributed throughout the PRB. Thousands of wells, compressors, pipelines, power lines and other facilities have been constructed in the PRB with little risk to the public's health and safety.

Unique Characteristics of the Geographic Area

Several of the leases involve areas with unique characteristics, such as proposed ACECs, wetlands, riparian areas, visual resources, and cultural resources. Mitigation measures and COAs were developed during past analyses, especially the PRB O&G Final EIS, to ensure development of CBNG would occur in a manner that minimizes any effects to the unique characteristics of the PRB. The mitigation measures and COAs selected in the ROD for the PRB O&G Final EIS also would apply to the development of CBNG on the 285 leases included in this analysis. Consequently, subsequent development of CBNG on the 285 leases also would occur in a manner that would minimize effects to unique characteristics of the analysis area.

Effects on the Quality of the Human Environment with Potential to be Controversial

Overall, implementation of the selected alternative would result in positive short- and long-term socioeconomic effects. Selection of Alternative 1 would allow for development of 285 leases which would contribute to the Nation's supply of natural gas and would contribute to the economic development of the PRB overall. Protection measures have been developed and implemented for development activities on other leases in the PRB EIS project area which would also be applied to these 285 leases, minimizing adverse effects to the human environment, including cultural resources, visual resources, transportation, and recreation.

Effects on the Human Environment that could be Uncertain or Involve Unknown Risks

No uncertain or unknown risks are expected to occur. CBNG wells have been developed on leases throughout the analysis area and the PRB. The direct, indirect, and cumulative effects of this development have been extensively evaluated and are documented in various EISs, including the PRB O&G Final EIS, and numerous EAs prepared for APDs. The development that would follow implementation of the selected alternative would involve the same methods and techniques presently in use in the PRB. Thus, no uncertain or unknown risks are expected.

The Degree to which the Action Establishes a Precedent for Future Actions

The actions considered in this decision would not establish a precedent for future actions. Development of CBNG already has occurred on some of the 285 leases and on many leases that adjoin these leases. Additionally, development of CBNG has been occurring in the PRB for more than 10 years and the 285 leases evaluated in the EA comprise a very small portion of the leases already issued in the PRB. Thus, the actions contemplated in this decision would not establish a precedent for future actions.

Whether the Action is Related to Other Actions with Individually Insignificant but Cumulatively Significant Impacts

The cumulative effects of actions of the development of CBNG in the PRB were fully evaluated in the PRB O&G Final EIS. That cumulative analysis included development of the 285 leases that were considered in the present analysis. The alternative selected in this decision incorporates the mitigation measures and COAs identified in the ROD for the PRB O&G Final EIS. Thus, the cumulative effects of the development of CBNG on the 285 leases have already been addressed in an EIS.

Adverse Effects on Highways or other Structures, Scientific, Cultural, or Historical Resources

Implementation of the selected alternative is unlikely to result in adverse effects to historic properties or cultural resources. Mitigation measures and COAs developed during past analyses, such as the PRB O&G Final EIS, would ensure development of CBNG on the 285 leases would occur in a manner that minimizes any effects to historic properties or cultural resources.

Degree of Adverse Effect on Threatened or Endangered Species

Implementation of the selected alternative is unlikely to result in unacceptable effects to species listed as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS). Mitigation measures and COAs developed during past analyses, especially the PRB O&G Final EIS, would ensure development of CBNG on the 285 leases would occur in a manner that minimizes any effects to these species. The Biological Opinion issued by the USFWS for the PRB O&G Final EIS was based on the direct, indirect, and cumulative effects of the CBNG development that included the development of the 285 leases. The terms and conditions identified in the BO become required conditions for the project as approved by the ROD. The mitigation measures and COAs developed for that ROD also would apply to the development of CBNG on the 285 leases included in this analysis.

Whether the Action Threatens Violation of Federal, State, or Local Law or Requirements for Protection of the Environment

The selected alternative would not violate federal, state, or local laws or other requirements for protection of the environment. The CBNG associated with the 285 leases would be available for development, reducing the potential for drainage of federal oil and gas resource. The mitigation measures and COAs also would ensure development of CBNG from the 285 leases would meet the requirements of federal, state, and local laws and regulations.

Conclusion

Based on a review of the EA, supporting record, context, and the elements of intensity discussed above, the determination was made that this decision does not constitute a major Federal action that would significantly affect the quality of the human environment, as defined in the Code of Federal Regulations Title 40, Part 1508, Section 27 (40 CFR 1508.27). Therefore, an EIS is not necessary and will not be prepared.

Public Involvement

The public was provided an opportunity for involvement in the process. Scoping began on December 16, 2004 with publication in the *Federal Register* of a Notice of Intent (NOI) to prepare an EA. The NOI was published to inform the public of BLM's intent to conduct an environmental analysis in response to the Court's rulings. The notice also solicited comments to assist BLM in identifying specific issues and concerns that it should address in the analysis. The comment period ran from December 16, 2004 through January 18, 2005.

BLM reviewed and analyzed the comments that were received in response to the NOI. BLM received 18 letters and e-mails and identified several issues that would drive the analysis and development of alternatives. These issues are:

- ground water drawdown from CBNG production activities and effects on water well users;
- effects of surface discharge of water produced from CBNG wells (both its quality and quantity), including direct discharges of treated or untreated water to drainages, discharges to impoundments, and land application disposal (LAD);
- effects on important wildlife habitats, such as fragmentation of riparian corridors (bald eagle nesting and winter roost habitats) and sage grouse habitats; and
- the relationship between human health and the potential for water produced from CBNG wells to contribute to the spread of West Nile virus (WNV) by providing breeding habitats for the mosquitoes that carry the virus.

Additional issues were identified from the scoping comments, including considering a basin-wide analysis of leasing, phased development, interactions between WNV and sage-grouse, changes in the thermal regimes of streams, and contamination of ground water resulting from hydro-fracturing. The basin-wide analysis of leasing and phased development issues were used to develop alternatives that were ultimately not evaluated in detail or were not used in the analysis. The other issues were not considered in detail because they were not issues that were known during the time of issuance of the 285 leases and therefore were considered to be outside the scope of this analysis.

Implementation Date and Appeal Opportunity

In accordance with 43 CFR 4, you have the right to appeal this decision to the Interior Board of Land Appeals. A person who wishes to appeal to the Board must file a Notice of Appeal in the Buffalo Field Office. A person must transmit the Notice of Appeal within 30 days after public notification of this decision.

Contact Person

For additional information concerning this decision, please contact Paul Beels at BLM's Buffalo Field Office (address: 1425 Fort Street, Buffalo, Wyoming 82834; telephone 307-684-1168).

Signature and Date

Approving Official:

Chris E. Hanson
Field Manager
Buffalo Field Office

Aug. 22, 2005
Date