

### NORTHERN CHEYENNE MITIGATION APPENDIX

BLM meets its trust responsibility to protect American Indian trust resources and assets (trust resources) by first considering the potential impact of the proposed activity on identified trust resources. BLM then consults with the appropriate tribal government to obtain their comments on potential impacts to trust resources, along with possible protective measures. BLM considers the tribal government's comments and then determines what measures would be required to protect trust resources. BLM's decision has to consider, but not necessarily defer to, the comments of the tribal government on measures adequate to protect trust resources.

The left hand column of the following table contains mitigating measures for coal bed methane (CBM) development that were proposed by the Northern

Chevenne Tribe in a letter to BLM dated August 13. 2002. A copy of the complete letter is available from the BLM. The column on the right contains the measures BLM would use to protect tribal trust resources, or to protect other area resource values of importance to the Tribe. These mitigating measures are part of Alternative E, the preferred alternative, and would be imposed on operators at the APD approval stage of development as needed on a case-by-case basis; or followed by BLM on a programmatic basis. The mitigation measures would only be applied on those lands/minerals where BLM has the authority. Some of the Tribe's mitigating measures do not have corresponding mitigation proposed by BLM due to limits in BLM authorities. Such instances are noted in the table and remain as mitigation options that may be undertaken by other agencies involved in the permitting process.

### **BLM Mitigation Measures Under Alternative E**

### Part I, Natural Resources:

### A. Protection of Reservation Groundwater

1. *Buffer Zone*. An initial buffer zone of 14 miles will be maintained around the Northern Cheyenne Reservation exterior boundaries. This is the minimum necessary to assure that Reservation groundwaters are not adversely affected by off-Reservation CBM development.

If proposed development of CBM resources is located in aquifers with hydrologic connectivity to groundwater resources of the Northern Cheyenne Reservation, the following measures would be required:

The operator<sup>1</sup> would be required to determine the potential for proposed field development<sup>2</sup> to affect Reservation groundwater when CBM production is proposed.

The 14-mile buffer zone proposed by the Northern Chevenne Tribe would not be applied. This buffer zone is based on a theoretical maximum drawdown radius assuming uniform geologic and hydrologic conditions in a 2D model. Groundwater modeling that accounts for geologic faults, irregularities, and vertical leakage was prepared for the Final EIS. The modeling predicts a drawdown radius of 4 to 5 miles (in the Hanging Woman Creek drainage). These results more accurately represent anticipated site conditions and are consistent with the Montana Department of Natural Resources (DNRC) and Conservation, Water Resources Division, Technical Advisory Committee (TAC) recommended minimum of 3-miles. This recommendation is in the TAC's guidance document for meeting the requirements of the Montana Board of Oil and Gas Conservation (MBOGC) Order No. 99-99 that requires an evaluation of pre-development ground water conditions, plus monitoring and evaluations, including procedures for monitoring and reporting the effects of CBM development on water users.

Protection of Reservation groundwater would not rely on a buffer zone. Instead, the operator would be required to conduct geologic and hydrologic evaluations for CBM production wells to be located in areas that may have hydrologic connectivity with Reservation groundwater. When the site-specific studies triggered by the aforementioned criteria determine there would be an effect to Reservation groundwater, the operator must develop and apply measures to prevent the impact of groundwater withdrawal and monitor the effectiveness of such measures.

### 2. Groundwater Monitoring. The BLM will not issue permits to drill within the 14-mile buffer zone until sufficient hydrological information exists to clearly and convincingly demonstrate that CBM production closer to the Reservation will not cause drawdown of Reservation groundwater resources. Prior to and in the first years of CBM development outside the 14-mile buffer zone, BLM will conduct intensive monitoring within the 14-mile buffer zone to generate site-specific information regarding local aquifer drawdown. Monitoring wells (nested piezometers) will be installed within the buffer zone on the order of at least one cluster per township. A cluster would include well screens in appropriate coal seams, overlying aquifers, and alluvial aquifers. More monitoring wells may be necessary as development increases in the basin and/or water-level declines are observed. The monitoring wells will be located on federal land or, if possible, on private or state land by negotiation. The wells will be installed as soon as possible before production begins to ensure that adequate baseline data is available (at least three years). Water-level measurements will be obtained from each cluster at least once a month. If declining water levels are observed through monthly data collection, a continuously recording data-logger will be installed in the monitoring well to more accurately determine changing water levels. The Tribe will be privy to the design and results of this groundwater monitoring program.

3a. Federal Development within Buffer Zone. Groundwater modeling based on the site-specific information generated by the above intensive monitoring program will be used by BLM in consultation with the Tribe to determine, in clear and convincing fashion, whether and to what extent federal CBM production can occur within the 14-mile buffer zone without causing drawdown of Reservation groundwater. At least five years of intensive monitoring of the effects of CBM production outside the buffer zone will be required before making any decision on whether to proceed with development within the buffer zone. Such decision will be made in consultation with the Tribe.

### **BLM Mitigation Measures Under Alternative E**

For CBM wells located in aquifers with hydrologic connectivity to Reservation groundwater, the operator would be required to conduct a geologic and hydrologic evaluation prior to field development that identifies the potential for CBM production to affect Reservation groundwater resources.

CBM project plans must include measures to prevent the impact of CBM production on Reservation groundwater.

When determined necessary by BLM, operators would be required to install monitoring wells to verify the effect of CBM production on Reservation groundwater resources.

Specific operator monitoring plans must include a hydrologic evaluation; describe the well location(s), aquifer(s) monitored, parameters monitored, baseline data acquisition, and response actions to adverse monitoring results. All groundwater monitoring data would become public information and made available to the Tribe.

BLM may approve CBM production upon completion of the geologic and hydrologic evaluation, and installation and equipping of any required monitoring wells.

Operators would be required to prepare site-specific analysis prior to field development to determine if federal CBM production would affect Reservation groundwater.

Where this analysis shows a potential to affect Reservation groundwater, the Tribe would be consulted as to appropriate protection measures.

Operators would be required to monitor the impact of CBM production on groundwater throughout the well life and after closure, if necessary.

### 3b. Federal Development within Buffer Zone. BLM will not issue permits to drill within the buffer zone until sufficient information exists to clearly and convincingly demonstrate that such production will have no adverse effect on Reservation aquifers. Any decision to proceed with drilling within the buffer zone will be made in consultation with the Tribe and consider the likely cumulative impacts from State-authorized production of CBM resources associated with State and private lands. Authorization of federal CBM production within the buffer zone will begin with those tracts farthest from the Reservation that have the least potential to affect Reservation groundwater.

3c. Federal Development within Buffer Zone. After commencement of production, monitoring of groundwater will be expanded to verify that CBM production does not result in any drawdown of Reservation groundwater, all in consultation with the Tribe. Prior to production, monitoring wells (nested piezometers) will be installed along the northern and eastern boundaries of the Reservation on the order of at least one cluster (see # 2, above) per adjacent township. More wells may be necessary as development increases in the basin and/or water-level declines are observed. The wells will be installed as soon as possible before development to ensure that adequate baseline data is available (at least three years). Water-level measurements will be obtained from each cluster at least once a month. If declining water levels are observed through monthly data collection, a continuously recording data logger will be installed in the monitoring well to more accurately determine changing water levels.

### **BLM Mitigation Measures Under Alternative E**

Operators would be required to provide an analysis of the hydrologic impact of CBM production wells and identify any potential effect to Reservation groundwater resources.

The Powder River Basin Controlled Groundwater Area standards would be applied by the state, to state and private leases, and would be enforced by BLM on federal leases.

Where there is a potential for affecting Reservation groundwater, monitoring plans would be developed by the operator and approved by BLM in consultation with the Tribe.

Site-specific analysis would determine the timing of CBM production adjacent to the Reservation.

Operators may be required to expand their monitoring plans as production continues if a decline in Reservation groundwater levels occurs that is attributable to their operations.

Operators may be required to fund or install monitoring wells on Reservation lands in order to document impacts to Tribal resources. Monitoring wells placed on the Reservation would be subject to approval by the Tribal government. All results of groundwater monitoring would become public information.

Regional monitoring wells, independent of specific operators, are currently being installed by the BLM and USGS. The USGS is installing 6 well clusters along the southern boundary of the Northern Cheyenne Reservation. The BLM is installing 9 well clusters throughout the PRB study area. These regional wells would assist in identifying groundwater drawdown impacts from CBM development. The BLM plans to install additional monitoring wells in 2003 and 2004.

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Northern Cheyenne Tribe—Proposed Mitigation	BLM Mitigation Measures Under Alternative E
4a. State-Authorized Development within Buffer Zone. If, prior to the decision to proceed with Federal development of CBM resources within the 14-mile buffer, the State authorizes CBM development within the buffer, the Federal government will act to protect the Tribe's groundwater resources by funding the on-Reservation groundwater monitoring outlined above.	BLM would continue to participate in programs to collect data from existing monitoring wells and install additional monitoring wells to provide for monitoring of impacts to Reservation groundwater levels.
4b. State-Authorized Development within Buffer Zone. Prior to any state-authorized CBM development, the BLM and other federal agencies will assist the Tribe in negotiating and obtaining agreements with the State of Montana and private landowners to protect Tribal resources from such development. Such agreements may well require: (a) installation of a hydrologic barrier consisting of a series of wells between the Reservation and developing fields that inject water into the coal seam(s) to maintain the hydrostatic pressure in the formation and prevent the depletion of groundwater; (b) provision of alternative water supplies by drilling deeper wells or conveyance of water from locations not affected by CBM development; and (c) compensation to the Tribe and its members for any accrued	The BLM recognizes its responsibility to protect tribal trust resources and would take the appropriate action(s) on a case-by-case basis.  The BLM would use all reasonable means to assure that Reservation groundwater is not adversely affected by off-Reservation CBM development and that impacts to groundwater can be prevented.
damage.	
5a. Remedies for Damage to Reservation Groundwater Resources. If monitoring wells located along the Reservation boundary detect measurable water level declines from the baseline, BLM will immediately halt any federally authorized production within the buffer zone.	BLM would require operators to modify federal CBM production if monitoring shows production is resulting in an effect to groundwater on the Reservation. BLM requirements could include reducing production rates, shutting in the well, or requiring the operator to provide compensation to the Tribe.
	The operator must mitigate the impact of groundwater withdrawal prior to resuming full production.
5b. Remedies for Damage to Reservation Groundwater Resources. The United States will also take legal action on behalf of the Tribe (or fund legal action by the Tribe) to halt any State-authorized production that is causing such water level declines on the Reservation and to obtain compensation for all accrued damage to the Tribe and its members.	The BLM recognizes its responsibility to protect tribal trust resources and would take the appropriate action(s) on a case-by-case basis.
<b>B. Protection of Reservation CBM Resources</b>	
1. <i>CBM Monitoring</i> . The groundwater monitoring described in Section I.A. will also include close monitoring of hydrostatic pressure and analysis of CBM drainage within the buffer zone.	BLM would use its existing regulations (43 CFR 3160) to require that operators provide the production data and analysis needed for BLM to determine if drainage of Reservation CBM is occurring.

Northern Cheyenne Tribe—Proposed Mitigation	BLM Mitigation Measures Under Alternative E
2a. Federal Development within Buffer Zone. BLM will not issue permits to drill within the 14-mile buffer zone until sufficient information exists to clearly and convincingly demonstrate that CBM production will not drain Reservation methane resources. Any decision to proceed with production within the buffer zone will be made in consultation with the Tribe and consider the likely cumulative impacts on Reservation CBM reserves from state-authorized production of state and private CBM resources.	The BLM has a responsibility to use reasonable means to prevent drainage of Reservation CBM from extraction on federal lands.  Operators would be required to provide an analysis prior to field development in areas of potential drainage of Reservation CBM resources. In this analysis, operators must demonstrate that CBM production would not be likely to drain Reservation CBM resources.
2b. Federal Development within Buffer Zone. At least five years intensive monitoring of CBM drainage from CBM production outside the buffer zone will be required before any decision to proceed with development within the buffer zone.	Specific evaluations would be required for CBM wells drilled in areas that could potentially drain Reservation CBM. Such evaluations would include modeling of CBM reservoirs to calculate the potential for drainage of Reservation CBM. All evaluations would be made available to the Tribe.
2c. Federal Development within Buffer Zone. Authorization of federal CBM production within the buffer zone will begin with those tracts farthest from the Reservation that have the least potential to drain Reservation CBM resources.	Operators would be required to provide analysis prior to field development to determine whether and to what extent federal CBM production would drain Reservation CBM.
	The analysis would be used by BLM to determine the timing of CBM production adjacent to the Reservation boundary in order to protect Reservation CBM resources from drainage.
2d. Federal Development within Buffer Zone. After commencement of production, CBM drainage monitoring will be implemented along the Reservation boundary as provided in Section I.A. above to verify that CBM production does not result in any drainage of Reservation methane resources.	Operators may be required to provide updated information for reservoir modeling during production in order to monitor the potential for drainage of CBM resources from the Reservation.

### 3a. State-Authorized CBM Development within Buffer Zone. If prior to the decision to proceed with federal development CBM resources within the 14-mile buffer, the state authorizes CBM development within the buffer, BLM and other federal agencies will protect the Tribe's CBM resource by funding a full characterization of Reservation CBM resources and on-Reservation monitoring of CBM drainage.

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The BLM recognizes its responsibility to protect tribal trust resources and would take the appropriate action(s) on a case-by-case basis.

The BLM and the Technical Advisory Committee (TAC) are developing a regional monitoring program. Part of BLM's program during the first year of groundwater monitoring includes drilling, equipping, and testing monitoring wells adjacent to the Crow and Northern Chevenne Reservations. The intent of the monitoring is to establish baseline data in advance of development and to determine if there are CBM impacts to Tribal resources. The Tribe, through its efforts with the USGS, would also have baseline data through its current drilling efforts. The USGS is installing 6 monitoring well clusters along the southern Reservation boundary. The Tribe could participate as a member of the TAC in order to be involved in the process and provide recommendations for mitigation measures. The guidance document developed by the TAC within the Powder River Basin Controlled Ground Water Area (PRBCGA) would assist CBM operators in complying with the technical requirements described in the PRBCGA Final Order and Montana Board of Oil and Gas Conservation Order No. 99-99. The PRBCGA Final Order identifies essential elements necessary for detecting and mitigating impacts from CBM development that needs to be addressed for groundwater characterization and monitoring plans.

The BLM monitoring wells are being installed in nine clusters distributed throughout the PRB, with well clusters near the southern boundary of the Northern Cheyenne Reservation in the Bull Creek and Dale Creek drainages. The BLM plans to install additional monitoring wells in 2003 and 2004.

3b. State-Authorized CBM Development within Buffer Zone. Prior to any state-authorized CBM development within the 14-mile buffer zone, the BLM and other federal agencies will assist the Tribe in negotiating and obtaining agreements with the State of Montana and private landowners to protect Reservation CBM resources. Such agreements may well require: (a) installation of a hydrologic barrier consisting of a series of wells between the Reservation and developing fields that inject water into the coal seam(s) to maintain the hydrostatic pressure in the formation and prevent the drainage of CBM, and (b) financial compensation to the Tribe or Tribal allottees for any CBM drained from Reservation lands and any other associated damage.

The BLM recognizes its responsibility to protect tribal trust resources and would take the appropriate action(s) on a case-by-case basis.

In order to protect the correlative rights of the Tribe, the BLM would represent the Tribe at Montana Board of Oil and Gas Conservation (MBOGC) hearings that set spacing units for the production of CBM resources, including state and private lands. The BLM would work with the MBOGC under its existing Memorandum of Understanding to protect Tribal resources that may be affected by state or private permits or establishment of CBM spacing units adjacent to Tribal resources. In addition, the BLM, as a member of the technical advisory committee administered by the DNRC Water Management Division, would make recommendations to the MBOGC on the Tribe's behalf regarding monitoring requirements and mitigation of impacts.

Northern Cheyenne Tribe—Proposed Mitigation	BLM Mitigation Measures Under Alternative E
4a. Remedies for Damage to CBM Resource. If monitoring wells located along the Reservation boundary detect CBM drainage, BLM will immediately halt any federally authorized production within the 14-mile buffer zone.	The interests of the Tribe would be considered prior to authorization of Federal production that may potentially drain Reservation CBM resources. In establishing well spacing on Federal lands, protection against drainage of Reservation CBM resources would be a priority. If monitoring or reservoir modeling indicates drainage of CBM resources is occurring, the BLM would enter negotiations with the operator and the Tribe to protect the correlative rights of the Tribe. BLM requirements could include reducing production rates, shutting in the well, establishment of communitization agreements, or requiring the operator to pay compensatory royalty.
4b. Remedies for Damage to CBM Resource. The United States will take legal action on the Tribe's behalf (or fund legal action by the Tribe) to halt any state-authorized production that is found to be draining CBM resources from the Northern Cheyenne Reservation and to obtain compensation for all accrued damage to the Tribe and its members.	The BLM recognizes its responsibility to protect tribal trust resources and would take the appropriate action(s) on a case-by-case basis.  To protect the correlative rights of the Tribe, the BLM would represent the Tribe at the MBOGC hearings that set well spacing for production of CBM resources on state and private lands. The BLM will work with the
	MBOGC under its existing MOU to protect Tribal resources that may be affected by approval of state or private permits or establishment of CBM well spacing units adjacent to Tribal resources.
5. Northern Cheyenne Involvement in Monitoring and Analysis. Training and employment will be provided to qualified and available Tribal members to involve them, to the fullest extent feasible, in all programs set forth in this Mitigation Plan to monitor and analyze effects on Reservation groundwater, CBM resources, surface water, air quality and subsistence and cultural sites and values.	The monitoring programs sponsored by BLM are open to contracting by qualified Tribal members or companies.
C. Reservation Surface Water	
1. Reinjection or Treatment. All produced water from development of federal CBM resources upstream of the Reservation in both Montana and Wyoming will either be reinjected (as provided for in DEIS Alternative B) or treated prior to discharge to meet the Northern Cheyenne Tribe's surface water quality standards (as provided in DEIS Alternative D). A special emphasis is placed on the Sodium Adsorption Ratio (SAR) and Electrical Conductivity (EC) parameters, especially during the irrigation season. Surface water flow and quality will be monitored to ensure that illegal discharges are not occurring. BLM or other federal agencies will provide the Tribe with funding to cover the costs of surface water monitoring on the Reservation.	Management of all federal produced water would be required to comply with Onshore Oil and Gas Order #7. Operators would be required to submit and receive approval of produced water management plans as part of their drilling and production plans. The water management plans would have to specify water treatment, disposal, and monitoring methods that would be followed in order to meet the state and EPA or Tribal water quality standards at the point of compliance. BLM would not approve any produced water permit applications until any necessary State, EPA, or Tribal permits required for water management actions were obtained.

# 2. Effluent Guidelines and Standards of Performance. To address discharges of CBM production water from state-authorized development in Montana and Wyoming, EPA will promulgate effluent limitation guidelines under Section 304(b) of the Clean Water Act and/or national standards of performance for CBM production wells under Section 306 of the Act. These standards and guidelines will require reinjection or treatment of produced water from new production wells. In addition, BLM and EPA, in conjunction with the Tribe, will encourage the states of Montana and Wyoming to negotiate a permanent agreement that includes the Tribe as a contracting party and that requires the State of Wyoming to prevent degradation of the Tongue River from Wyoming-authorized discharges.

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The EPA and the state would need to determine the utility of promulgating effluent limits. The BLM would require operators to adhere to final regulations promulgated by the proper entity.

The EPA and the states of Wyoming and Montana would need to determine the utility of an agreement on degradation of the Tongue River.

### D. Reservation Air Quality

1. Increment Analysis and Prevention of Significant Deterioration. The FEIS will include a regulatory "PSD Increment Consumption Analysis" for all relevant parameters and analyze the impact of such consumption on the potential for future economic development on the Reservation. It is not acceptable to the Tribe that this analysis be done in a piecemeal fashion as CBM wells and compressor stations are permitted. On the basis of this increment consumption analysis, BLM's record of decision must provide for a development plan that is not likely to result in significant consumption of the Reservation's PSD Class I increment for any relevant parameter.

The BLM requires permitted actions on public lands (including oil and gas development) to comply with all applicable local, state, tribal, and federal air quality laws, regulations, standards, and implementation plans.

BLM does not have the responsibility or authority to conduct a regulatory PSD Increment Consumption Analysis. However, the EIS predicts the potential for certain impacts and provides that a regulatory PSD Increment Consumption Analysis be conducted by the appropriate air quality regulatory agency (i.e., the Montana DEQ or the EPA) during permitting of specific CBM development. This analysis would assess the likelihood of an exceedance and could be used to develop conditions to prevent a significant consumption of a Class I increment if an exceedance is determined likely.

Operators would be required to provide the information necessary for BLM to conduct an analysis of air quality impacts for all relevant parameters when submitting their exploration APDs or field development project plans. BLM would use the information to determine the individual and cumulative impact on the Reservation's air quality; disclose the analysis results in the appropriate NEPA document; and consult with the Tribe when the analysis shows impacts from a specific drilling or development proposal.

2. Mitigation. The BLM should implement all measures to minimize air quality degradation suggested in Alternative B of the PFEIS. These include: appropriately surfacing roads and well locations to reduce fugitive dust generated by traffic; applying dust suppressors; enforcing speed limits on all project roads; minimizing construction of roads; air quality; requiring use of natural gas-fired and electric compressors; and optimizing the number of wells connected to one compressor.

Approval of exploration APDs and field development plans would include an analysis of the individual and cumulative impacts to air quality and be conditioned to prevent violations of applicable air quality laws, regulations, and standards. Mitigating measures may include surfacing roads and well locations; applying dust suppressants; requiring operators to develop and enforce speed limits on project roads; minimizing construction of roads; requiring use of natural gas-fired and electric compressors; and optimizing the number of wells connected to one compressor.

Northern Cheyenne Tribe—Proposed Mitigation	BLM Mitigation Measures Under Alternative E	
3. Monitoring. The BLM and other federal agencies will assist the Tribe in carefully monitoring impacts to the Reservation's air quality, including consumption of the Class I increment. Air quality monitoring should be conducted on the southern and eastern boundaries of the Reservation by continuous real time monitoring systems to ensure that Class I standards are not exceeded and that substantial consumption of Class I increment is not being consumed. Areawide monitoring will also occur within the 14-mile buffer zone. The location and frequency of air-quality monitoring will be determined based on the level of production in particular areas and climatic conditions.	Operators would conduct air quality monitoring, if required, as part of their individual air quality permits issued by the applicable air quality regulatory agency. This could require monitoring of air quality on the Reservation where there is a potential for impacts.  Other federal agencies, primarily EPA, should be contacted to request assistance with general monitoring of Reservation air quality.	
4. <i>Modeling</i> . BLM should regularly update the air quality model developed as part of the NEPA process as new data is collected within the basin. If the updated model forecasts unanticipated impacts on Reservation air quality, BLM will take corrective action to limit further CBM development in the vicinity of the Reservation.	Operators must provide information necessary for BLM to conduct an analysis of potential air quality impacts for all relevant parameters when submitting their exploration APDs and field development plans. BLM would periodically review these air quality modeling analyses in consultation with the Tribe.	
5. Remedies. If monitoring and modeling finds that off-Reservation CBM development is causing or threatening to cause significant consumption (to be precisely defined for each relevant air quality parameter in consultation with the Tribe) of the Reservation's Class I increment for any relevant parameter, BLM will take measures to restrict the timing or location of CBM development in the vicinity of the Reservation so that consumption of the air quality increment will be reduced to less than significant levels.	Operators in the vicinity of the Reservation may be required to restrict the timing or location of CBM development if monitoring or modeling by the air quality regulatory authority finds their CBM development is causing or threatening to cause non-compliance with applicable local, state, tribal, and federal air quality laws, regulations, standards, and implementation plans.	
E. Reservation Wildlife Resources		
1. Prior to further CBM development in the Powder River RMP area, BLM will fund a wildlife study by a contractor chosen in consultation with the Tribe that: (a) fully assesses the likely impact of off-Reservation CBM development on the wildlife resources of the Northern Cheyenne Reservation; and (b) evaluates measures, such as establishing buffer zones and wildlife refuges to protect critical habitat, that will prevent and avoid significant impacts to Reservation wildlife resources.	The mitigating measures for wildlife are part of the standard APD review and approval process. In addition, impacts on wildlife, including those species on and adjacent to the Reservation, would be monitored and addressed per the <i>Wildlife Monitoring and Protection Plan</i> (see Wildlife Appendix).  The Tribe would be invited to participate in the "steering group" that would evaluate information gathered during the inventory and monitoring phases of the <i>Wildlife Monitoring and Protection Plan</i> .	
2. Based on the findings of the wildlife study and in consultation with the Tribe, BLM will implement, in the form of additional RMP amendments, leasing stipulations, or operating plan conditions, all measures found necessary to fully protect Reservation wildlife resources from the impacts of off-Reservation CBM development.	The results of the <i>Wildlife Monitoring and Protection Plan</i> would be used to adjust conditions of approval at the APD stage. This includes measures needed to protect Reservation wildlife from the impacts of CBM development.	

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F. Noxious Weeds	
1. Operating plans will provide that vehicles and equipment associated with CBM exploration or development must be thoroughly washed to remove seeds before passing through the Reservation. This requirement should include all personnel including operators, construction workers, contractors, and researchers.	Operators are responsible for noxious weed control on all drill pads, roads, pipelines, and other production related sites for the life of the facility. Operators would be required to include plans to prevent the spread of noxious weeds as part of their development plans. The noxious weed prevention plans must include measures to prevent the spread of weed seeds from any vehicles and equipment prior to mobilizing it to the project area (this would include contractors and researchers).
2. Operating plans will provide for mandatory training of all employees and contractors in noxious weed awareness and prevention.	The Operator would be responsible for the training of employees in noxious weed awareness and prevention. Training would be one required component of the operator's noxious weed prevention plans.
3. Operating plans and permits to drill will require use of common corridors and minimization of roads within the development area as provided in Alternative B to the DEIS to reduce the spread of noxious weeds in the region. All development roads will be restored to the original contours and re-vegetated with the appropriate native and/or hearty vegetation. At least two years of monitoring at the abandoned production field is required to ensure that noxious weeds have not invaded the area.	Operator reclamation plans for access roads and drill sites would include recontouring to near original contour and seeding the area with a certified weed-free seed mix. Upon abandonment, revegetated areas would require at least two growing seasons before bond release in order to ensure that a self-sustaining stand of weed free vegetation had been established.
Part II, Socio	peconomic:
A. Specific Socioeconomic Mitigation Measures	
The following <i>Employment Preference</i> [1a and 1b] will apply to all federal and state CBM leases that include lands within 25 miles of the Reservation boundary.	The BLM has a responsibility to examine the socioeconomic impacts on the Northern Cheyenne Tribe from off reservation CBM development (see Chapter 4).
	The BLM does not have the authority to require operators outside the Reservation boundary to preferentially hire Native Americans.
la. <i>Employment Preference</i> . Indians who live on or near the Northern Cheyenne Reservation and are qualified and available ("Qualified Indians") will be given preference in recruitment, training, hiring, promotion, and reductions in work force, in all categories of employment in operations on or near the lease.	The proposed employment preferences can only be required for tribal lease operations on the Reservation.
	The BLM does not have the authority to require operators outside the Reservation boundary to preferentially hire Native Americans.

# 1b. Employment Preference. The employment preference will be implemented under the terms of a separate written agreement between the Tribe and the lessee. Negotiation of this agreement will commence as promptly as possible and be conducted with diligence and good faith. To expedite the negotiation, the United States, State of Montana, and Tribe will diligently and in good faith promptly concur on a Model Employment Agreement as a guide. Without limitation, the Model Employment Agreement and each Tribe-lessee agreement will include the terms and conditions set forth in i through iv below. Each Tribe-lessee agreement must be approved by the United States as to leases of federally-owned CBM, and the state as to leases of state or privately-owned CBM:

- i. Special programs for the recruitment of qualified Indians.
- ii. Special programs for the training of qualified Indians, including on-the-job training and training for advancement into supervisory positions.
- iii. Special workshops for other project work force to develop an awareness of Indian culture and concerns and an understanding of the need for and requirements of the employment preference.
- iv. Preservation of the lessee's authority to establish reasonable, even-handed, and job-validated training programs, employment criteria, and work rules for all employees, including qualified Indians.
- v. Notification to all involved labor unions of the existence of the employment preference and of the lessee's duty and intent to abide by its terms.
- vi. A requirement that project contractors and subcontractors assume and comply with all terms and conditions of the employment preference in connection with their own project employment practices.
- 2. The following *Contracting Preference* (2a and 2b) will apply to all federal and state CBM leases that include lands within 25 miles of the Reservation boundary.

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The proposed employment preferences agreement can only be required for tribal lease operations on the Reservation.

The BLM does not have the authority to require operators outside the Reservation boundary to enter into the employee preference agreement.

The BLM has a responsibility to examine the socioeconomic impacts on the Northern Cheyenne Tribe from off-Reservation CBM development (see Chapter 4).

The BLM does not have the authority to require operators outside the Reservation boundary to preferentially contract with Northern Cheyenne Contractors.

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2a. Businesses that are majority-owned and controlled by the Northern Cheyenne Tribe and/or its members ("Northern Cheyenne Contractors") will be given preference in the awarding of all contracts and subcontracts for the conduct of operations on or near the lease, and for the procurement of material and equipment for such operations.	The proposed contracting preferences can only be required for tribal lease operations on the Reservation.  The BLM does not have the authority to require operators outside the Reservation boundary to preferentially contract with Northern Cheyenne Contractors.
2b. These preferences will be implemented under the terms of a separate written agreement between the Tribe and the lessee. Negotiation of this agreement will commence as promptly as possible and be conducted with diligence and good faith. To expedite the negotiation, the United States, State of Montana, and Tribe will diligently and in good faith promptly concur on a Model Contracting Agreement as a guide. Without limitation, the Model Contracting Agreement and each Tribe-lessee agreement will include the terms and conditions set forth in i through iii below. Each Tribe-lessee agreement must be approved by the United States as to leases of federally-owned CBM, and the state as to leases of state or privately-owned CBM:	The proposed contracting preferences agreement can only be required for tribal leases issued for operations on the Reservation.  The BLM does not have the authority to require operators outside the Reservation boundary to enter into the contracting preference agreement.
i. A fair and objective procedure under which a business entity applying for the status of Northern Cheyenne Contractor must be certified in the following two respects:	
(1) as an entity actually majority-owned and controlled by the Tribe and/or a Tribal member; and	
(2) as an entity capable of competently providing particular contract services or supplying particular material or equipment.	
ii. Advance notice to certified Northern Cheyenne Contractors of service or procurement contracts to be awarded for which they are qualified.	
iii. A requirement that project contractors and subcontractors assume and comply with all terms and conditions of these preferences in connection with their own project contracting and procurement practices.	
3. Law and Order; Traffic. The following (3a thru 3e) will apply to all federal and state CBM leases that include lands within Rosebud, Powder River and Bighorn Counties.	The BLM has a responsibility to examine the socioeconomic impacts on the Northern Cheyenne Tribe from off-Reservation CBM development (see Chapter 4).
	The BLM does not have the authority to require law and order adherence covenants from operators for off-Reservation CBM development.
	Compliance with applicable traffic laws is necessary for all individuals and companies when operating on public roads within the Reservation.

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3a. The lessee will obtain a covenant from each of its employees that while on the Reservation for any purpose, the employee will comply with all standards of conduct generally applicable to Tribal members.	The proposed covenant can only be required for tribal leases issued for operations on the Reservation.
	The BLM does not have the authority to require lessees outside the Reservation boundary to require their employees to sign the general conduct covenant.
3b. Each lessee will obtain a covenant from each of its truckers that while operating on the Reservation, the trucker	The proposed covenant can only be required for tribal leases issued for operations on the Reservation.
will comply with all laws, ordinances and rules applicable to the use of motor vehicles by Tribal members.	The BLM does not have the authority to require lessees outside the Reservation boundary to require their truckers to sign the traffic covenant.
3c. Each lessee will by contract require (i) each of its contractors and subcontractors to obtain like covenants	The proposed covenant can only be required for tribal leases issued for operations on the Reservation.
from their employees and truckers, and (ii) each of its suppliers to obtain a like covenant from their truckers.	The BLM does not have the authority to require lessees outside the Reservation boundary to require their contractors and subcontractors to sign a covenant.
3d. The above described duties imposed on employees and truckers will be enforced by each lessee, and its contractors, subcontractors, and suppliers, by taking appropriate employee-related disciplinary action in the event such duties are violated.	The BLM does not have the authority to require lessees outside the Reservation boundary to discipline individual employees.
3e. These provisions will be implemented under the terms of a separate written agreement between the Tribe and each lessee. Negotiation of this agreement will commence as promptly as possible and be conducted with diligence and good faith. To expedite the negotiation, the United States, State of Montana, and Tribe will diligently and in good faith promptly concur on a Model Law and Order/Traffic Agreement as a guide. Without limitation, the Model Law and Order/Traffic Agreement and each Tribe-lessee agreement will include the term and conditions set forth in i through v below. Each Tribe-lessee agreement must be approved by the United States as to leases of federallyowned CBM, and the state as to leases of state or privatelyowned CBM:	The proposed agreement can only be required for tribal leases issued for operations on the Reservation.  The BLM does not have the authority to require lessees outside the Reservation boundary to require their contractors and subcontractors to sign the written agreement.
i. Assumption in writing by each employee and trucker of the conditions set forth in a through d above.	
ii. Education of employees and truckers with respect to the standards of conduct they must observe while on the Reservation.	
iii. Appropriate employee-related disciplinary action for particular violations.	
iv. Resolution of disputes concerning the occurrence of violations.	
v. Notification to all involved labor unions of the existence of the written agreement and the lessee's duty and intent to abide by its terms.	

Northern Cheyenne Tribe—Proposed Mitigation	BLM Mitigation Measures Under Alternative E
4. <i>Impact Funding</i> . The Tribe proposes the following impact funding program described in 4a through 4e.	The BLM has a responsibility to examine the socioeconomic impacts on the Northern Cheyenne Tribe from off-reservation CBM development (see Chapter 4).
	The BLM does not have the authority to require impact funding.
4a. The Federal government returns 50% of all CBM lease bonuses, rentals and royalties to the state ("Off-Reservation Federal Impact Funds"). By federal statute, these funds are to be used to mitigate socioeconomic impacts of CBM development on local communities. In the region, these impacts can be expected to occur in Big Horn, Rosebud, and Powder River Counties (the "Three County Area"), both on and off the Reservation. No portion of the off-Reservation Federal Impact Funds will be made available to the Tribe.	Of the monies received from sales, bonuses, and royalties on federal public domain leases, 50% is returned to the state or its governmental subdivisions where the leases are located. The state legislature is the body that controls disposition of the monies received and determines the priority of fund distribution to those subdivisions economically impacted by development. BLM does not have the discretion or authority to redistribute federal royalties.
4b. The Tribe will be provided with a degree of proportionate funding.	Of the monies received from sales, bonuses, and royalties on federal public domain leases, 50% is returned to the state or its governmental subdivisions where the leases are located. The state legislature is the body that controls disposition of the monies received and determines the priority of fund distribution to those subdivisions economically impacted by development. BLM does not have the discretion or authority to redistribute federal royalties.
4c. The impact funding will be provided to the Tribe for the exclusive purpose of planning and providing public services and facilities on the Reservation.	Of the monies received from sales, bonuses, and royalties on federal public domain leases, 50% is returned to the state or its governmental subdivisions where the leases are located. The state legislature is the body that controls disposition of the monies received and determines the priority of fund distribution to those subdivisions economically impacted by development. BLM does not have the discretion or authority to redistribute federal royalties.
4d. The funding will be calculated by taking the amount of off-Reservation Federal Impact Funds generated by all federal CBM leases that lie in whole or in part in the Three County Area, dividing by the off-Reservation resident population of the Three County Area, and then multiplying by the resident population of the Reservation.	The BLM does not have the authority to redistribute the federal royalties.
4e. The funding will be provided to the Tribe at the same time that the off-Reservation Federal Impact Funds are provided to the state.	The BLM does not have the authority to redistribute the federal royalties.

## 4f. There are several possible sources for the impact funding, including without limitation the following and combinations thereof: (1) entirely from the lessees, via lease stipulations, permit conditions or operating plans; (2) from the lessees, but at no cost to the lessees, through exercise of the Secretary's existing authority under 30 USC §209 to grant royalty reductions to lessees, accompanied by a commitment from the lessees to pay to the Tribe an amount equal to the royalty reductions; (3) from the 50% share of the federal lease bonuses, rents, and royalties retained by the United States. Presumably, this will require federal legislation.

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The BLM does not have the authority to require impact funding.

A royalty rate reduction cannot be legally granted to the lessees to offset payments by the lessees for impact funding.

The BLM does not have the authority to redistribute the federal royalties.

### Part III, Cultural:

### A. Protection of Northern Cheyenne Homesteads

A buffer zone should be established around the Northern Cheyenne homestead sites in the Otter Creek and Hanging Woman drainages. Since current archaeological survey data is inadequate to identify all these sites, all sections where land records indicate Northern Cheyenne homesteading activity took place should be withheld from CBM exploration and development. These sections are identified in Appendix G to the Tribe's Narrative Report.

Operators would be required to include review of Northern Cheyenne homestead records and evaluation for homesteads in the cultural resource surveys where land records indicate Northern Cheyenne homesteading activity. Specific measures to mitigate impacts to these homesteads would be developed at the APD approval phase.

A review of land and mineral ownership maps indicate that one homestead location listed in Appendix C of the Ethnographic Report may be located on an area open to fluid mineral leasing. The location is on split estate with private surface and federal minerals. Prior to any land disturbing activity permitted by the BLM in this location, and with landowner permission, BLM would work with the Northern Cheyenne Tribe and the operator to develop the requirements for inventorying, recording, and evaluating the homestead site. BLM would provide technical assistance to the Tribe in inventorying, recording, and evaluating the homestead site.

### B. Protection of Significant Hunting, Fishing and Plant Gathering Areas in Tongue River Valley

The 14-mile buffer zone proposed by the Tribe to protect Reservation groundwater resources should be adequate to protect culturally significant plant gathering areas within the Tongue River valley. However, if CBM development is authorized within the buffer zone, the following protocols should be followed:

Development is presumed to occur at some future time within the 14-mile area.

Northern Cheyenne Tribe—Proposed Mitigation	BLM Mitigation Measures Under Alternative E
1. No development will be permitted up to five miles cast of the Tongue River between Ashland and Birney without mitigation measures designed to avoid disturbance of important hunting, fishing, and plant gathering sites.	In the area east of the Tongue River between Ashland and Birney, with important hunting, fishing, and plant gathering sites, operators would be required to inventory BLM lands for traditional plant gathering sites around the proposed drilling locations. APD approvals may include avoidance or timing restrictions to prevent impacts to identified important hunting, fishing and plant gathering sites.
2. BLM operating plans will require that prior to development in areas within five miles (east) of the Tongue River between Ashland and Birney, the project proponent and BLM will consult with the Northern Cheyenne Cultural Commission to determine the location of any important hunting, fishing, and plant gathering sites. The BLM, in consultation with the Tribes Cultural Commission, will design measures to avoid disturbance of these important areas.	In the area east of the Tongue River between Ashland and Birney, operators would be required to consult with the Northern Cheyenne Cultural Commission to determine the location of any important hunting, fishing, and plant gathering sites. APD approvals would include measures to avoid impacts to these resources using standard terms and conditions.
3. No permits to drill will be issued within three miles of Poker Jim Butte to protect an important medicinal and ceremonial plant gathering area in that location.	Operators would be required to conduct a plant inventory on BLM lands proposed for disturbance near Poker Jim Butte. Impacts on medicinal and ceremonial plant gathering areas could then be mitigated using standard terms and conditions. <b>Note</b> : The butte is within the Custer National Forest.
4. BLM will monitor the effects to the Northern Cheyenne subsistence economy from CBM development by funding annual updates to the Tribe's subsistence survey (Northern Cheyenne Tribe 2002). A Wildlife Technical Working Group, whose membership will include Northern Cheyenne and agency wildlife specialists, will routinely review the subsistence data of each year. On the basis of this data, they should recommend changes in leasing stipulations to curtail any noted deleterious effects to Northern Cheyenne subsistence hunting, fishing, and plant gathering. This group will also review all reclamation plans to ensure that habitat diversity around the Reservation is maintained and plants with traditional cultural uses are included in the revegetation seed mixes.	BLM would welcome the participation of the Northern Cheyenne in the "steering group" that would evaluate information gathered during the inventory mid monitoring phases of the Wildlife Monitoring and Protection Plan.
C. Protection of Culturally Important Springs	
1. The BLM will inventory springs off the Reservation within the 14-mile buffer zone. This will include locating springs by GPS, determining the source of the water, measuring the flow, monitoring water quality parameters, and documenting vegetation growth and condition with photos and video. A comprehensive spring inventory should be conducted at least twice per year.	Operators would be required to inventory all springs supplied by the coal seam producing CBM within the anticipated drawdown radius of their proposed operation.
2. If development is allowed within the 14-mile buffer, no permits to drill will be issued within three miles of an inventoried spring prior to consultation with the Northern Cheyenne Cultural Commission regarding the cultural significance of the spring to the Tribe.	The Northern Cheyenne Cultural Commission would be consulted about the appropriate mitigation if culturally significant springs were located within the anticipated drawdown radius of the operator's proposed development.

Northern Cheyenne Tribe—Proposed Mitigation	BLM Mitigation Measures Under Alternative E
3. Springs that are identified by the Cultural Commission as having special significance to the Northern Cheyenne will be protected by a buffer zone adequate to protect medicinal and ceremonial plants as well as the spiritual beings that inhabit the springs and maintain the current conditions that facilitate traditional cultural use of the springs for prayer, offerings, and ceremonies. The size and shape of the buffer zone will be determined by BLM, in consultation with the Tribe based on the best available hydrological data.	Operators may be required to avoid impacting culturally significant springs as part of the mitigation plan developed under Section 106 of the National Historic Preservation Act.
4. Where drilling is allowed within three miles of a culturally important spring, BLM will monitor the drawdown of aquifers related to the spring on a systematically scheduled basis and provide timely reports of the monitoring data to the Tribe. The Northern Cheyenne Tribe will be full participants in a Technical Working Group that oversees the monitoring. (It could be most cost efficient to have the Northern Cheyenne collect this data and distribute it to all interested parties).	Operators could be required to monitor the condition of culturally significant springs were there is the potential for production activities to impact the springs. This requirement would be triggered by the results of the site specific hydrologic evaluation associated with the APD approval.
5. In keeping with the best adaptive management practices, the BLM will halt pumping CBM production around culturally important springs if monitoring data indicates that dewatering of the spring is occurring or imminent.	Operators must modify federal CBM production if monitoring data shows production is affecting culturally important springs.  The operator must implement mitigating measures that would maintain the spring flow prior to resuming full production.
D. Protection of Grave Sites	production.
To protect grave sites, BLM should not issue permits to drill within a mile of all Tribal burials, graves, or cemeteries (regardless of temporal or Tribal affiliation).	Operators would be required to have a discovery plan as part of their plan of development. The discovery plan would include suspension of operations and notification requirements for state, private, and federal lands in the event human remains are discovered during project construction.
	Should human remains be discovered during construction, BLM would consult with the Northern Cheyenne on the appropriate distance between the project and gravesite.

Northern Cheyenne Tribe—Proposed Mitigation	BLM Mitigation Measures Under Alternative E
E. Prevention and Mitigation of Impacts to Northern Che	yenne Cultural Resources
1. BLM will support (by providing funding, training, and in kind services) the creation of a Tribal Historical Preservation Office (THPO). The THPO will focus on Tribal culture, history, geography, and related research, and on building a Northern Cheyenne Archive. The THPO will be a clearinghouse for cultural resource information and the development of a public outreach program and education program for all grade levels in local schools.	BLM supports the creation of a Northern Cheyenne Tribal Historic Preservation Office. This would need to be done through the National Park Service. BLM cannot commit to funding the office. BLM would share data with the THPO from cultural resource investigations associated with CBM development. This information could then be used for tribal educational and outreach efforts.
2. Mechanisms will be established to enable the Tribe to monitor all site-specific cultural resource work done for CBM development to ensure that all Tribally affiliated properties are recorded and evaluated in a culturally appropriate fashion. This should include, but not necessarily be limited to, the respectful treatment of human remains, items of cultural patrimony, and materials relating to ongoing traditional cultural uses of sites (e.g., offering cloths, etc.).	When tribally affiliated properties would be affected by CBM developments, BLM may require a tribal monitor. Under most normal circumstances, cultural resource work does not require a monitor.
3. All Tribally affiliated properties will be evaluated under the National Historic Preservation Act in accordance with NPS Bulletins 15, 16 and 38. Bulletin 38 evaluations must include face-to-face contacts with Northern Cheyenne cultural resource specialists, culture historians and/or culture committee members. Evaluations will include specific discussions of Cheyenne history and culture as well as scientific values.	All cultural properties recorded as a result of CBM related activities would be evaluated for listing on the National Register of Historic Places. BLM would consult with the Northern Cheyenne Tribe when properties were evaluated as Traditional Cultural Properties.
4. Cultural resource contractors hired by the BLM or project proponents and BLM archaeologists will demonstrate good faith consultation with the Tribe and make every attempt to include Cheyenne cultural resource specialists in all aspects of their work.	This is a current requirement by BLM for both themselves and BLM cultural resource permit holders.
5. Cultural resource technical reports approved by the BLM will follow current best practice standards and be accompanied by public narratives suitable for use in Northern Cheyenne schools.	BLM's report standards are found in the BLM's 8100 Manual and Handbooks and are augmented by current professional standards. When reports contain data that would be of interest to the Tribe or the public, BLM may require the operator's consulting archaeologist to prepare a public narrative of their work.
6. Treatment plans for historic properties (eligible sites) will always give the highest priority to avoidance when the property is eligible as a Traditional Cultural Property (under Bulletin 38). If a site is eligible, only for its scientific value, mitigation through data recovery may be considered if the site can not be avoided. Training opportunities for the Cheyenne in archaeological excavation techniques and/or public awareness programs for Northern Cheyenne students will accompany any excavation of tribally affiliated sites.	Avoidance is BLM's standard policy for not adversely affecting historic properties. BLM would consult with the Northern Cheyenne Tribe for sites that are found eligible as a Traditional Cultural Property.

Northern Cheyenne Tribe—Proposed Mitigation	BLM Mitigation Measures Under Alternative E
7. All well locations and ancillary facilities (roads, pipelines, etc.) that cause ground disturbance will be intensively inventoried for cultural resources. Cultural resources include archaeological sites, plant collecting areas, paint sources, baculite sources, and earthlodges (sacred hills), and bird habitats, e.g., nesting area of birds who participate in Northern Cheyenne ceremonial life. This will require Northern Cheyenne participation in the survey effort to identify paint, plant, and earthlodge sites.	Inventory of well locations and ancillary facilities is a current requirement prior to surface disturbance.  Inventory strategies would be discussed as part of the cultural resources section of plans of development.
8. Since CBM development, if permitted, could cause a cumulatively significant amount of ground disturbance, the various site-specific reports should be compiled and the data synthesized into an over-riding and undatable technical document at the end of each field season. In keeping with modern adaptive management strategies, this synthesis will be reviewed by a Cultural Resources Technical Working Group (CRTWG), which should include Northern Cheyenne culture historians/elders and/or Tribal Historical Preservation officers designated by the Tribe along with agency cultural resource specialists.	BLM would provide the Tribe a copy of BLM's annual cultural resources report, which would summarize CBM related cultural resource activities. BLM would participate in the Cultural Resources Working Group.
9. A \$300 filing fee will be included in the cultural resource contracts. This filing fee will be allocated to the Northern Cheyenne Tribe for the development and support of the THPO.	The authorities under which BLM currently issues cultural resource use permits and fieldwork authorizations do not provide for the collection of fees.

<sup>&</sup>lt;sup>1</sup> "Operator" refers to "oil and gas" operator.

<sup>2</sup> Field development refers to operator requests for approval of additional wells other than in accordance with current spacing (1 well per 640 acres/coal seam).