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## EXECUTIVE SUMMARY

On September 20, 2001, CMC<sup>1</sup> filed an application with the BLM for federal coal reserves adjacent to CMC's Cordero Rojo Mine in a tract located to the west and south of the existing mine in Campbell County, Wyoming (Figures ES-1 and ES-2). This coal lease application was assigned case number WYW154432, and is referred to as the Maysdorf LBA Tract. CMC subsequently submitted modifications to their coal lease application to the BLM on May 21, 2002; July 1, 2004; and November 8, 2004. In the application submitted in November, 2004, the Maysdorf LBA Tract as modified by the applicant includes approximately 2,219.39 acres and an estimated 230.3 million tons of mineable federal coal reserves. The lands applied for in this application are located approximately 15 miles south-southeast of the city of Gillette, Wyoming.

This lease application was reviewed by the BLM, Wyoming State Office, Division of Mineral and Lands Authorization, who determined that the application and the lands involved met the requirements of the regulations governing coal leasing on application at 43 CFR 3425.1. The PRRCT reviewed this lease application at public meetings held on May 30, 2002, in Casper, Wyoming and on April 27, 2005, in Gillette, Wyoming. At those meetings, the PRRCT recommended that the BLM continue to process the lease application.

In order to process an LBA, the BLM must evaluate the quantity, quality, maximum economic recovery, and fair market value of the federal coal and fulfill the requirements of the NEPA by evaluating the environmental consequences of leasing the federal coal.

To evaluate the environmental impacts of leasing and mining the coal, the BLM must prepare an EA or an EIS to evaluate the site-specific and cumulative environmental and socioeconomic impacts of leasing and developing the federal coal in the application area. The BLM made a decision to prepare an EIS for this lease application.

The Draft EIS was mailed to the public in May, 2006. The EPA published a notice announcing the availability of the Draft EIS in the *Federal Register* on May 26, 2006. The BLM published a Notice of Availability and Notice of Public Hearing in the *Federal Register* on May 26, 2006. A 60-day comment period on the Draft EIS commenced with publication of the EPA's Notice of Availability and ended on July 25, 2006. A formal public hearing was held on June 13, 2006. BLM received written comments from five entities, which are included, with responses, in Appendix H of the Final EIS. Parties on the distribution list will be sent copies of the Final EIS when it is completed, and the EPA and BLM will each publish a Notice of Availability for the Final EIS. After a 30-day availability period, BLM will make a decision to hold or not to hold a competitive lease sale for the federal

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<sup>1</sup> Refer to page xv for a list of abbreviations and acronyms used in this document.

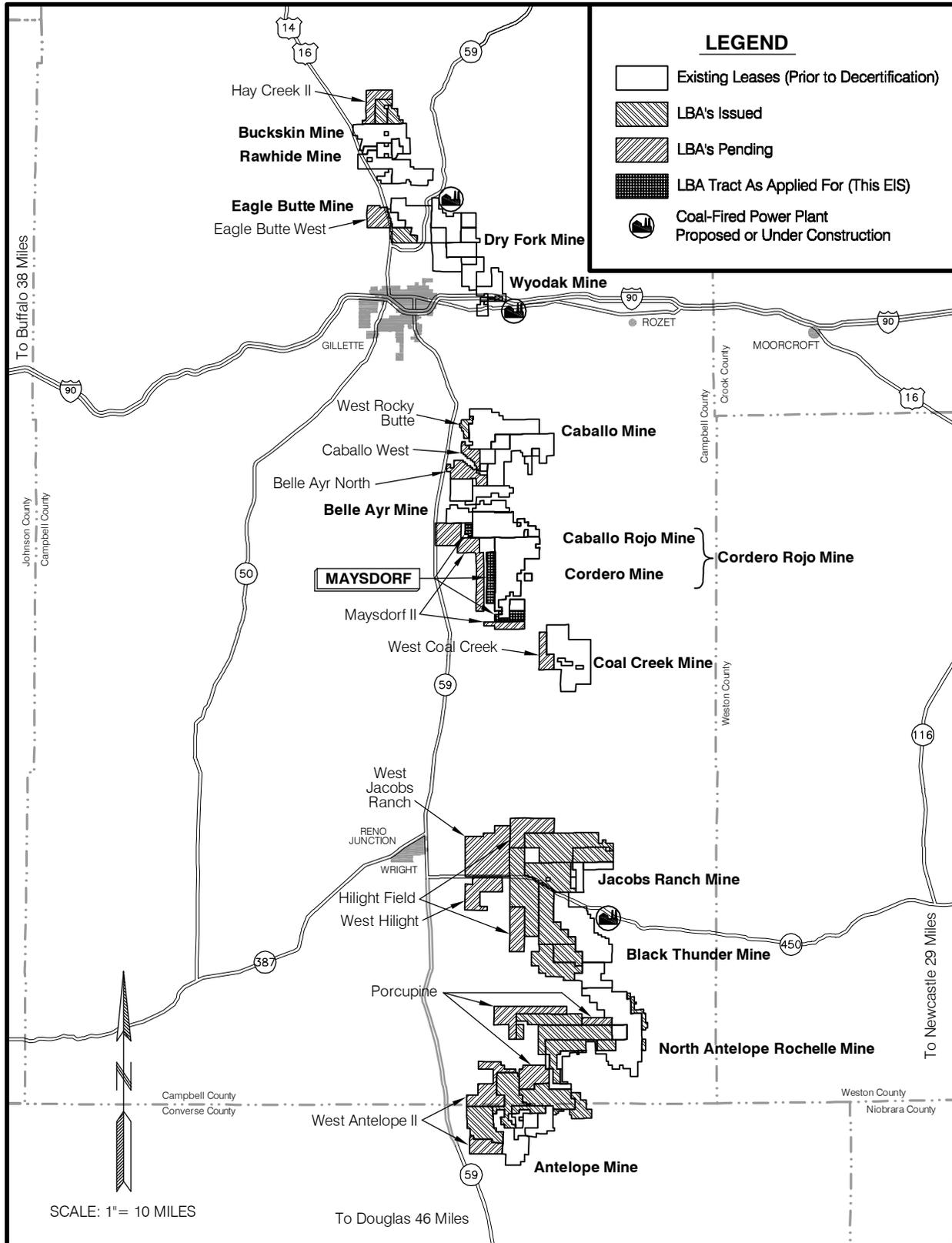


Figure ES-1. General Location Map with Federal Coal Leases and LBA Tracts.

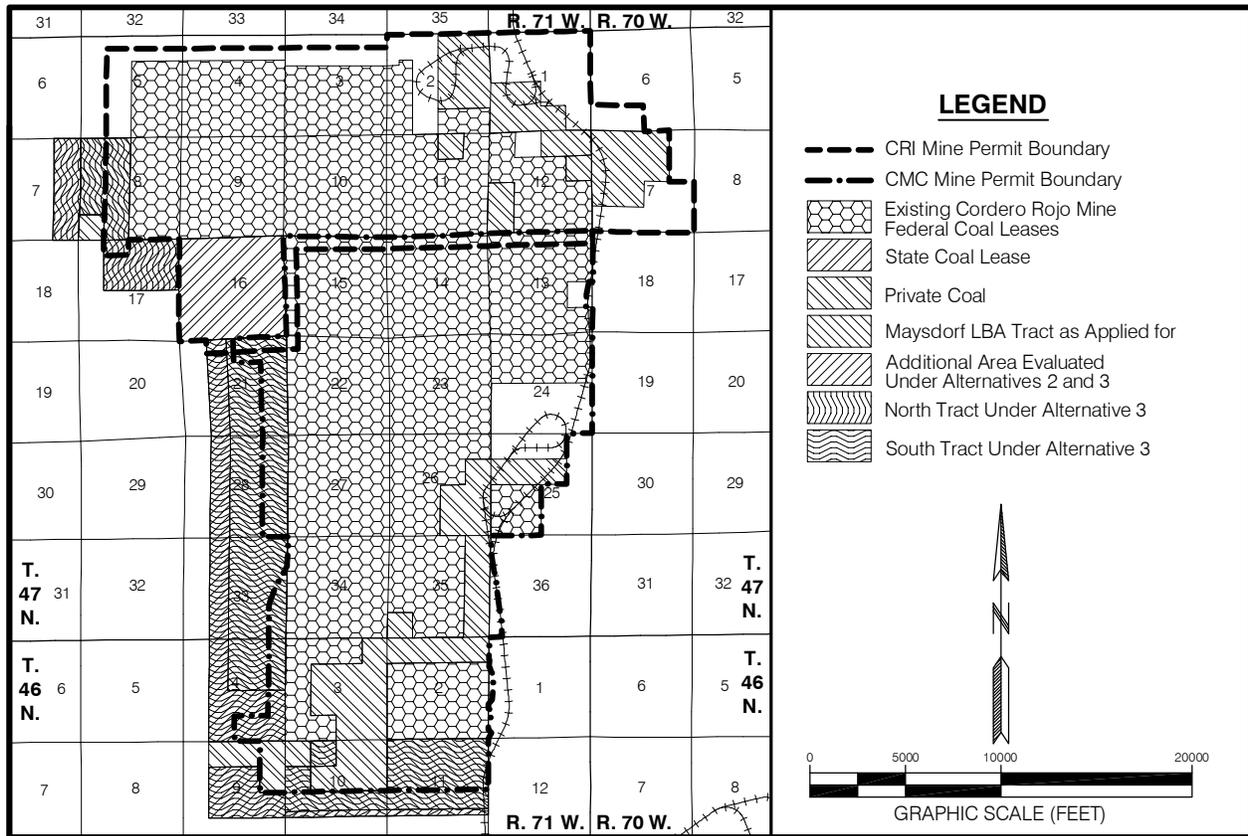


Figure ES-2a. Maysdorf LBA Alternative Tract Configurations.

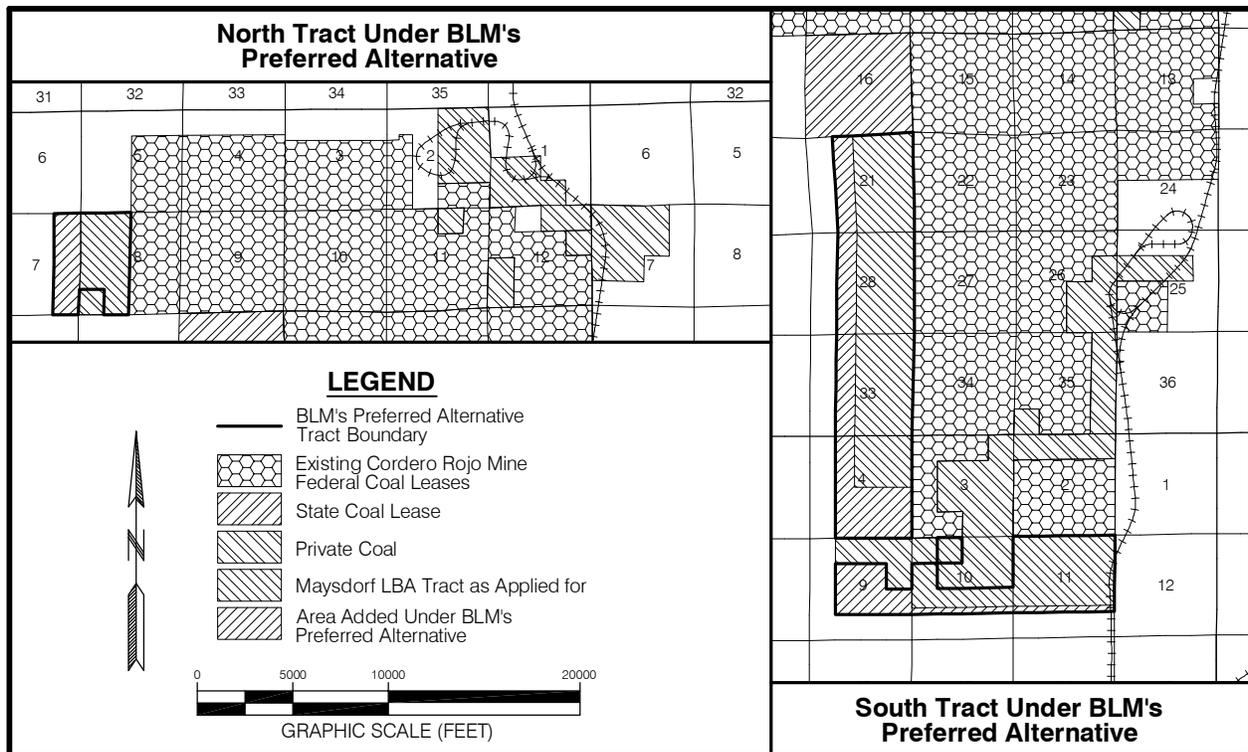


Figure ES-2b. Maysdorf LBA Preferred Alternative Tract Configuration.

coal in this LBA tract and a ROD will be signed.

BLM will use the analysis in this EIS to decide whether or not to hold a coal lease sale for the federal coal included in the Maysdorf tract and issue a federal coal lease. The LBA sale process is, by law and regulation, an open, public, competitive sealed-bid process. Bidding at a potential sale would be open to any qualified bidder. If a lease sale is held for this LBA tract, the applicant (CMC) may not be the successful high bidder. If a lease sale is held, a federal coal lease would be issued to the highest bidder at the sale if a federal sale panel determined that the high bid at that sale meets or exceeds the fair market value of the coal as determined by BLM's economic evaluation, and if the U.S. Department of Justice determines that there are no antitrust violations if a lease is issued to the high bidder at the sale.

Cooperating agencies in the preparation of this EIS include OSM, WDEQ/LQD, and the Wyoming State Planning Office.

A decision to lease the federal coal lands in this application would be in conformance with the BLM Resource Management Plan for the Buffalo Field Office. The Maysdorf LBA Tract is contiguous with the Cordero Rojo Mine. The analysis in this EIS assumes that CMC would be the successful bidder on the Maysdorf LBA Tract if a sale were held, and that it would be mined as a maintenance tract for the Cordero Rojo Mine.

A Proposed Action and three alternatives to that action are analyzed in detail in this EIS.

- **Proposed Action** - The Proposed Action is to hold a competitive coal lease sale and issue a maintenance lease to the successful bidder for the Maysdorf LBA Tract as applied for (Figure ES-2). The tract includes 2,219.39 acres as applied for, and CMC estimates that it includes about 230.3 million tons of mineable federal coal. Under the Proposed Action, CMC estimates that the average annual production would be about 40 million tons per year, the life of the existing mine would be extended by approximately six years, and employment would be about 463 persons.
- **Alternative 1** (No Action Alternative) - Under this alternative, the LBA tract would not be leased, but the existing leases at the adjacent Cordero Rojo Mine would be developed according to the existing approved mining and reclamation plan (Figure ES-2). Under the No Action Alternative, the Cordero Rojo Mine would mine its remaining leased coal reserves in approximately nine years at an average annual production rate of 40 million tons per year and average employment would be 443 persons. Rejection of the lease application would not preclude an application to

lease the federal coal in the future.

- **Alternative 2** - Under Alternative 2, BLM would reconfigure the tract, hold a competitive lease sale, and issue a maintenance lease for the reconfigured tract. BLM identified a study area consisting of the tract as applied for and 1,368.01 acres to the west and south of the tract as applied for (Figure ES-2a). BLM then evaluated the study area to determine if reconfiguring the tract would maximize economic recovery, maintain or increase the potential for competition, or avoid bypassing potentially recoverable federal coal. After evaluating the study area, BLM has made a decision to add 1,126.74 acres to the 2,219.39 acres included in the tract as applied for, if the tract is offered for lease under Alternative 2. Under this alternative, the tract would include 3,346.13 acres and CMC estimates that the tract would include approximately 337.9 million tons of mineable federal coal. Estimated average annual coal production would be similar to the Proposed Action, mine life would be extended by up to nine years, and average employment would increase to as much as 495 persons.
- **Alternative 3** - This alternative considers dividing the tract as applied for into a north tract and a south tract and offering one or both of

those tracts for sale at separate, competitive sealed bid sales (Figure ES-2). As discussed above under Alternative 2, BLM has identified and evaluated a study area consisting of the tract as applied for and 1,368.01 acres to the west and south of the tract as applied for and made a decision to add a total 1,126.74 acres to the area applied for. Alternative 3, leasing two tracts consisting of the area applied for and 1,126.74 additional acres, is the Preferred Alternative of the BLM (Figure ES-2b). The North Maysdorf Tract would include approximately 445.89 acres and CMC estimates it would include about 52.8 million tons of mineable federal coal. The South Maysdorf Tract would include 2,900.24 acres and CMC estimates it would include about 285.0 million tons of mineable federal coal. Under Alternative 3, average annual production would be similar to Alternative 2, mine life would be extended by up to nine years, and average employment would increase to as much as 495 persons. The amount that mine life would be extended and the employment level would be increased would depend on whether CMC acquired one or both tracts.

Table ES-1 summarizes coal production, surface disturbance, and mine life for the Cordero Rojo Mine under each alternative. The

*Executive Summary*

Table ES-1. Summary Comparison of Coal Production, Surface Disturbance, Mine Life, and Revenues for Maysdorf LBA Tract and Cordero Rojo Mine.

Item	No Action Alternative (Existing Cordero Rojo Mine)	Proposed Action	Added by Alternative 2	Added by Alternative 3	
				North Tract	South Tract
In-Place Coal (as of 1/1/06)	388.1 mmt	234.8 mmt	342.3 mmt	52.8 mmt	289.5 mmt
Mineable Coal (as of 1/1/06)	388.1 mmt	230.3 mmt	337.9 mmt	52.8 mmt	285.0 mmt
Recoverable Coal (as of 1/1/06) <sup>1</sup>	364.8 mmt	216.5 mmt	317.6 mmt	49.6 mmt	268.0 mmt
Coal Mined Through 2005	650.3 mmt	—	—	—	—
Lease Area <sup>2</sup>	10,629.1 ac	2,219.4 ac	3,346.1 ac	445.9 ac	2,900.2 ac
Total Area To Be Disturbed <sup>2</sup>	14,694.0 ac	2,558.2 ac	4,024.7 ac	825.8 ac	3,198.9 ac
Permit Area <sup>2</sup>	16,804.4 ac	7,858.9 ac	7,858.9 ac	857.8 ac	7001.1 ac
Average Annual Post-2005 Coal Production	40.0 mmt	0 mmt	0 mmt	0 mmt	0 mmt
Remaining Life of Mine (post-2005)	9 yrs	6 yr	9 yr	3 yr	9 yr
Average Number of Employees	443	20	52	5	2
Total Projected State Revenues (post-2005) <sup>3</sup>	\$412.5 million	\$279.4 - \$356.5 million	\$409.8 - \$523.0 million	\$64.0 - \$81.7 million	\$345.8 - \$441.3 million
Total Projected Federal Revenues (post-2005) <sup>4</sup>	\$280.7 million	\$201.2 - \$278.3 million	\$295.1 - \$408.3 million	\$46.1 - \$63.8 million	\$249.0 - \$344.5 million

<sup>1</sup> Assumes 94 percent recovery of mineable coal. This figure excludes all coal that would not be mined beneath BNSF & UP railroad ROW and all mining losses that occur during normal mining operations.

<sup>2</sup> The lease area includes federal coal leases only and does not include state and private coal within the permit boundary. The disturbed area exceeds the leased area (total federal, state and private) because of the need for highwall reduction, topsoil removal, and other mine support activities outside the lease boundaries. The permit area is larger than the leased or disturbed area to assure that all disturbed lands are within the permit boundary and to allow an easily defined legal land description.

<sup>3</sup> Revenues to the State of Wyoming include severance taxes, property and production (Ad Valorum) taxes, sales and use taxes, and Wyoming's share of federal royalty payments, AML fees, and bonus bids. State revenues are based on \$0.31 per ton estimate for severance taxes × amount of recoverable coal, plus \$0.26 per ton estimate for Ad Valorum taxes × amount of recoverable coal, plus \$0.023 per ton estimate for sales and use taxes × amount of recoverable coal, plus \$5.80 per ton (projected for 8,400-Btu coal) price × amount of recoverable coal × federal royalty of 12.5 percent minus federal's 50 percent share, plus \$0.35 per ton for AML fees × amount of recoverable coal minus federal's 50 percent share, plus bonus payment on LBA leased coal of \$0.30 to \$0.97 per ton (based on the range of bonus payments made for the last 6 LBAs sold in 2004 and 2005) × amount of mineable coal minus federal's 50 percent share.

<sup>4</sup> Federal revenues include black lung taxes and the federal government's share of federal royalty payments, AML fees, and bonus bids. Federal revenues are based on \$5.80 per ton (projected for 8,400-Btu coal) price × amount of recoverable coal × black lung tax of 4.0 percent, plus \$5.80 per ton (for 8,400-Btu coal) price × amount of recoverable coal × federal royalty of 12.5 percent minus state's 50 percent share, plus \$0.35 per ton for AML fees × amount of recoverable coal minus state's 50 percent share, plus bonus payment on LBA leased coal of \$0.30 to \$0.97 per ton (based on the range of bonus payments made for the last 6 LBAs sold in 2004 and 2005) × amount of mineable coal minus state's 50 percent share.

environmental impacts of mining the LBA tract would be similar under the Proposed Action and Alternatives 2 and 3.

Under all three alternatives, some of the coal included in the Maysdorf LBA Tract is not currently considered to be recoverable due to presence of the BNSF & UP railroad tracks and associated ROW; the tract also includes an area where no coal is present due to erosion or non-deposition (a “no-coal” zone). Although these lands would not be mined, they are included in the tract to:

- allow maximum recovery of all the mineable coal that is adjacent to but outside of the railroad ROW and its associated buffer zone;
- allow maximum recovery of all of the mineable coal that surrounds the “no-coal” zone; and
- comply with the coal leasing regulations that do not allow leasing of less than 10-acre aliquot parts.

Surface ownership within the Maysdorf LBA Tract as applied for under the Proposed Action and the additional lands evaluated under Alternatives 2 and 3 consists primarily of private lands intermingled with some federal lands. The federal lands are administered by the BLM.

The BLM has determined that one owner of surface lands included in the Maysdorf LBA Tract meets the requirements listed under 43 CFR

3400.0-5gg and is therefore considered to be a qualified surface owner. In the event that surface owner does not consent to leasing their land, which is located in the north half of Section 33, T.47N., R.71W., it would be removed from the tract prior to holding a lease sale (Figure ES-2b).

Two Native American tribes have indicated they have concerns with disturbance of the cultural sites in this area, but no specific sites have been identified as traditional cultural properties by either tribe at this time. If one or both of these tribes identifies concerns related to sites significant to the history, culture, or religion of their tribes or sites that are sacred, those concerns must be addressed prior to leasing.

Other alternatives that were considered but not analyzed in detail include holding a competitive coal lease sale and issuing a lease to the successful bidder (not the applicant) for the purpose of developing a new stand-alone mine, and delaying the sale of the Maysdorf LBA Tract as applied for to increase the benefit to the public afforded by higher coal prices and/or to allow more complete recovery of the potential CBNG resources in the tract prior to mining.

Critical elements of the human environment (BLM 1988) that could be affected by the proposed project include air quality, cultural resources, Native American religious concerns, T&E plant and animal species, hazardous or solid wastes, water quality, wetlands/riparian zones, floodplains, environmental

justice, and invasive nonnative species. Four critical elements (areas of critical environmental concern, prime and unique farmland, wild and scenic rivers, and wilderness) are not present in the project area and are not addressed further. In addition to the critical elements that are potentially present in the project area, the EIS discusses the status and potential effects of the project on topography and physiography, geology and mineral resources, soils, water availability and quality, AVFs, vegetation, wildlife, land use and recreation, paleontological resources, visual resources, noise, transportation resources, and socioeconomics.

The project area is located in the PRB, a part of the Northern Great Plains that includes most of northeastern Wyoming. The tract is located in the eastern part of the PRB, in an area consisting primarily of a dissected rolling upland plain with low relief, broken by low red-capped buttes, mesas, hills, and ridges. Elevations range from about 4,510 ft to 4,770 ft above sea level and slopes range from flat to around 40 percent. There is one mineable coal seam at the Cordero Rojo Mine and within the Maysdorf LBA Tract. Locally, this coal zone is referred to as either the Wyodak or the Wyodak-Anderson. Mining would remove an average of 222 ft of overburden and 62 ft of coal on about 2,076 acres under the Proposed Action. Mining would remove an average of 238.5 ft of overburden and 62 ft of coal on about 3,160 acres under Alternatives 2 and 3. Up to five noncoal splits or partings occur

within the main coal seam, but they are typically local, discontinuous lenses of carbonaceous clay or shale that are less than one ft thick.

The existing topography on the LBA tract would be substantially changed during mining. A highwall with a vertical height equal to overburden plus coal thickness would exist in the active pits. Following reclamation, the average surface elevation would be lower due to removal of the coal. The reclaimed land surface would approximate premining contours and the basic drainage network would be retained; however, the reclaimed surface would contain fewer and gentler topographic features. This could contribute to reduced habitat diversity and wildlife carrying capacity on the LBA tract after reclamation. These topographic changes would not conflict with regional land use, and the postmining topography would adequately support anticipated postmining land use.

The geology from the base of the coal to the land surface would be subject to considerable long-term change on the LBA tract under any of the action alternatives. After removal of the coal, the replaced overburden would be a relatively homogeneous mixture compared to the premining layered overburden.

There are currently four conventional oil wells that are capable of producing on the tract as applied for and 24 CBNG wells have been completed and are (or have been) capable of producing from the Wyodak-Anderson coal zone in the sections that include the Maysdorf

LBA Tract under the Proposed Action. CBNG production has been occurring in this area for almost 10 years, but there are still undrilled 40-acre spacing units in and around the Maysdorf LBA Tract and there has been little recent interest in drilling additional wells in this area. CBNG resources that are not recovered prior to mining would be vented to the atmosphere and irretrievably lost when the coal is removed. BLM's policy is to optimize recovery of both resources, ensure the public receives a reasonable return, and encourage agreements between lessees or use BLM authority to minimize loss of publicly owned resources. Conventional oil and gas wells would have to be plugged and abandoned during mining but could be recompleted after mining if the remaining reserves justify the expense of the recompletion.

No significant or unique paleontological resources have been recorded in the general analysis area.

Moderately adverse short-term impacts to air quality would be extended onto the Maysdorf LBA Tract during the time it is mined if a lease is issued. Modeling for the current Cordero Rojo Mine permit predicted no exceedances of the annual PM<sub>10</sub> NAAQS at a 65-mmtpy production rate and no violations of the 24-hour or annual particulate standards (TSP or PM<sub>10</sub>) have been issued by WDEQ/AQD at the Cordero Rojo Mine. Figure ES-3 shows the maximum modeled PM<sub>10</sub> and NO<sub>x</sub> concentrations at the Cordero Rojo Mine for 2007. If the Cordero Rojo Mine acquires and

mines the Maysdorf LBA Tract, the mine would produce at an average annual rate of 40 mmtpy for an additional six to nine years. There would be an increase in overburden thickness but fugitive dust emissions would be expected to remain within daily and annual NAAQS limits.

Low-lying, gaseous orange clouds containing NO<sub>x</sub> that can be transported by wind can sometimes form from overburden blasting prior to coal removal. Exposure to NO<sub>x</sub> can cause adverse health effects. EPA has expressed concerns that NO<sub>x</sub> levels in some blasting clouds may be sufficiently high at times to cause human health effects. As a result of these incidents, WDEQ/LQD has directed some mines to take steps designed to mitigate the effects of NO<sub>2</sub> emissions occurring from overburden blasting. There have been no reported events of public exposure to NO<sub>2</sub> from blasting activities at the Cordero Rojo Mine through 2005. The mine has employed measures to control/limit public exposure to intermittent, short-term (blasting) releases.

Public exposure to emissions caused by surface mining operations is most likely to occur along publicly accessible roads and highways that pass through the area of the mining operations. State Highway 59 is several miles west of the LBA tract (Figure ES-1) and several county roads provide public and private access within and near the proposed lease area. Occupants of dwellings in the area could also be affected. There are occupied dwellings located approximately one to 3.5 miles west,

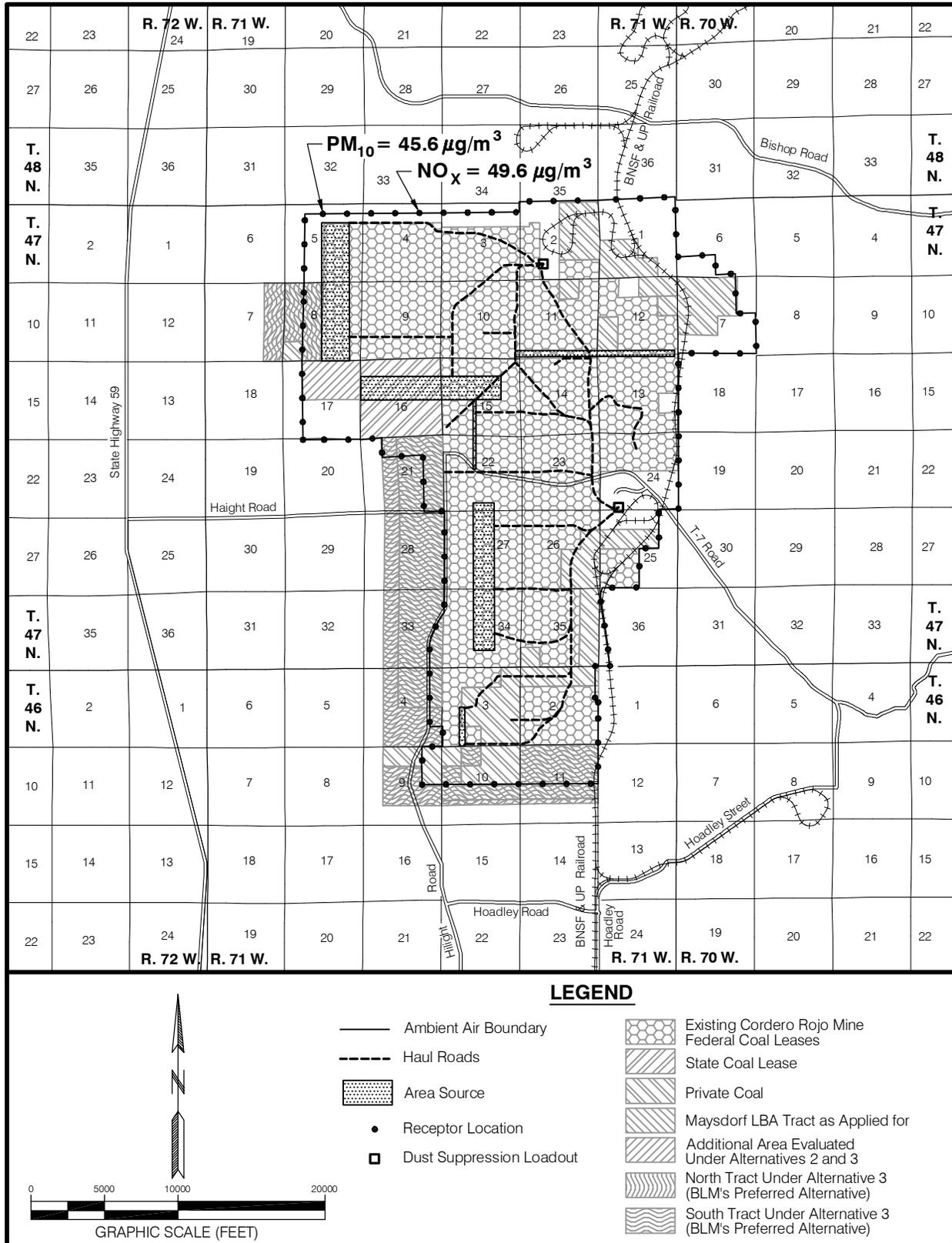


Figure ES-3. Maximum Modeled PM<sub>10</sub> and NO<sub>x</sub> Concentrations at the Cordero Rojo Mine Ambient Air Boundary for the Year 2007.

two miles south-southeast, and 3.5 miles east of the Maysdorf LBA Tract. A school bus stop is located on Highway 59 approximately 2.5 miles west of the LBA tract.

Mining would disturb the coal aquifer and the aquifers in the overburden above the coal within the Maysdorf LBA Tract. The coal aquifer and any water-bearing strata in the overburden would be removed and replaced with unconsolidated backfill. The area of drawdown in the areally-continuous coal aquifer related to mining operations at the Cordero Rojo Mine would be expected to increase roughly in proportion to the increase in area affected by mining. Figure ES-4 shows the projected life-of-mine drawdown that would result from currently approved mining on the existing leases with the addition of the Maysdorf LBA Tract. The area of drawdown in the discontinuous overburden aquifers would be smaller. The data available indicate that, after reclamation, the hydraulic properties of the backfill would be comparable to the properties of the premining overburden and coal aquifers. TDS levels in groundwater from the backfill could initially be expected to be higher than in the premining overburden and coal aquifers, but would be expected to meet Wyoming Class III standards for use as livestock water.

Mining would not directly disturb aquifers below the coal. CMC has five water supply wells completed in aquifers below the coal and these wells would be used to supply water for a longer period of time if the Maysdorf LBA Tract is leased.

The Belle Fourche River and its tributaries drain the existing Cordero Rojo Mine permit area and the Maysdorf LBA Tract. The river is currently diverted from its natural channel as a result of mining within the existing mine permit area. The river would also be diverted during mining of the LBA tract, but would be restored during reclamation. After mining and reclamation are complete, surface water flow, quality, and sediment discharge would approximate premining conditions.

Surface water quality varies with flow and/or season. Changes in runoff characteristics and sediment discharges would occur during mining of the LBA tract, and erosion rates could reach high values on the disturbed areas as a result of vegetation removal. However, state and federal regulations require that surface runoff from mined lands be treated to meet effluent standards, so sediment would be deposited in ponds or other sediment-control devices.

Under SMCRA, mining on AVFs is prohibited unless the affected AVF is undeveloped rangeland, which is not significant to farming, or if the affected AVF is of such small acreage that it would have a negligible impact on a farm's agricultural production. The determination of significance to farming is made by WDEQ/LQD. The Maysdorf LBA Tract has not yet been formally evaluated for the presence of AVFs, but the general absence of flood irrigation activity in this area indicates that it is unlikely that the Maysdorf LBA Tract includes AVFs that meet the criteria

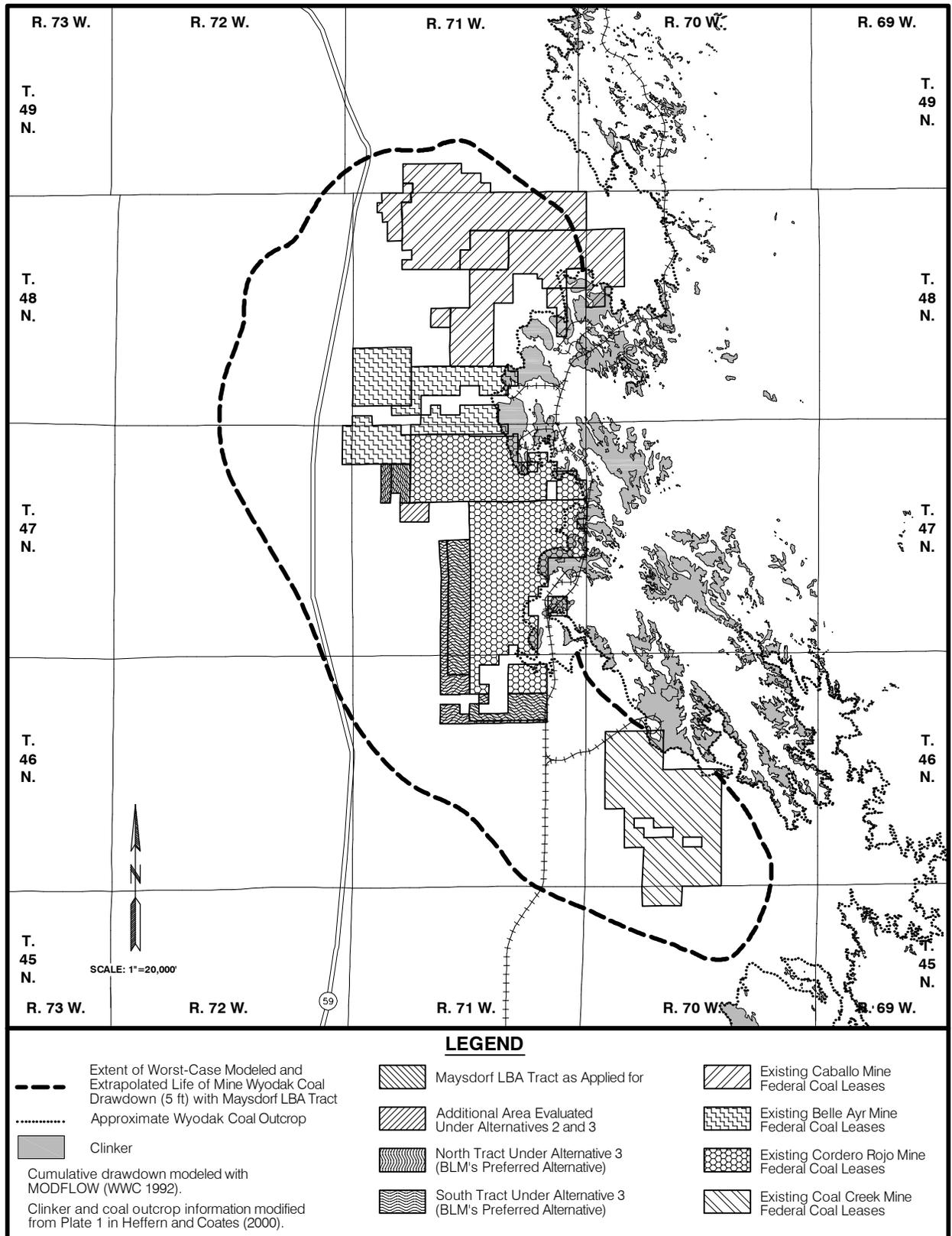


Figure ES-4. Life of Mine Drawdown Map, Resulting from Currently Approved Mining With Addition of the Maysdorf LBA Tract.

to be considered significant to agriculture. AVFs that are not significant to agriculture can be disturbed during mining but must be restored as part of the reclamation process.

Existing wetlands located in the LBA tract would be destroyed by mining operations. Wetland inventories have been completed on the Maysdorf LBA Tract under all the alternatives and an adjacent disturbance buffer. A total of 30 acres of jurisdictional wetlands, located along the banks of the Belle Fourche River channel and at intermittent locations in upland swale drainages adjacent to the river, have been identified. Jurisdictional wetlands are defined as those wetlands that are within the extent of COE regulatory review. Restoration of at least equal types and number of any jurisdictional wetlands that are disturbed by mining is required during the reclamation process.

There would be changes in the physical, biological, and chemical properties of the soils that are removed and stockpiled prior to coal removal and replaced during reclamation. Following reclamation, the soils would be unlike premining soils in texture, structure, color, accumulation of clays, organic matter, microbial populations, and chemical composition. The replaced topsoil would be more uniform in type, thickness, and texture. It would be adequate in quantity and quality to support planned postmining land uses (i.e., wildlife habitat and rangeland).

The predominant vegetation types on the LBA tract, in terms of total acres of occurrence in the vegetation analysis area, are the sagebrush grassland (54.94 percent) and sandy grassland (32.40 percent). Mining would progressively remove this native vegetation. Reclamation and revegetation of mined areas would occur contemporaneously with mining on adjacent lands. Reestablished vegetation would be dominated by species mandated in the reclamation seed mixtures, which are approved by the WDEQ/LQD. The majority of these species would be native to the LBA tract. Initially, the reclaimed land would be dominated by grassland vegetation, which would be less diverse than the premining vegetation. Estimates for the time it would take to restore sagebrush to premining density levels range from 20 to 100 years. An indirect long-term impact associated with this vegetative change would potentially be a decrease in available habitat for shrub dependent species. However, a diverse, productive, and permanent vegetative cover would be established on the LBA tract within about 10 years following reclamation, prior to release of the final reclamation bond. The decrease in plant diversity would not seriously affect the potential productivity of the reclaimed areas, and the proposed postmining land uses (wildlife habitat and rangeland) should be achieved even with the changes in vegetation composition and diversity. The reclamation plans for the LBA tract would also include steps to control invasion by weedy (invasive, nonnative) plant species.

Direct impacts of surface coal mining on wildlife occur during mining and are short term. They include road kills by mine-related traffic, direct losses of less mobile wildlife species, restrictions on wildlife movement created by fences, spoil piles and pits, displacement of wildlife from existing habitat in areas of active mining (including abandonment of nests or nesting and breeding habitat for birds), increased competition between animals in areas adjacent to mining operations, and increased noise, dust, and human presence. Habitat for aquatic species would also be lost during mining operations. Indirect impacts are longer term and include alterations in topography and vegetative cover following reclamation, which may decrease wildlife carrying capacity and habitat diversity. The Maysdorf LBA Tract does not include any unique or crucial big game habitat, and habitat disturbance would be incremental, with reclamation progressing as new disturbance occurs. In the long term, following reclamation, carrying capacity and habitat diversity may be reduced due to flatter topography, less diverse vegetative cover, and reduction in sagebrush density.

T&E plant and animal species that could be present on the tract include the Ute ladies'-tresses orchid, bald eagle, and black-footed ferret. Areas of suitable habitat for the Ute ladies'-tresses orchid within the Maysdorf LBA Tract and adjacent study area were surveyed in August of 2005 and again in August of 2006, and no individuals were located. Bald eagles are relatively common winter residents

and migrants in northeastern Wyoming's PRB. In the winters of 2004-2005 and 2005-2006, the bald eagle was far more common and abundant in the area than in previous years and frequently used a large windbreak within the existing Cordero Rojo Mine permit area. When the eagles began congregating, mining operations were taking place less than ¼-mile away on an existing federal coal lease. T-7 and Hilight Roads are located within 200 yards north and east of the windbreak, respectively. The Maysdorf LBA Tract adjoins Hilight Road to the west of the windbreak, but there are no trees on the tract. The windbreak used by the eagles is located in an area that is permitted to be mined. Mining operations are scheduled to begin in 2010, but topsoil removal would take place prior to 2010. No known nest sites, or consistent yearly concentrated prey or carrion sources for bald eagles are present in the area of the Cordero Rojo Mine, including the Maysdorf LBA Tract and adjacent study area. Bald eagle foraging habitat would be lost on the tract during mining and before final reclamation. The black-footed ferret is a nocturnally active mammal that depends almost entirely upon the prairie dog for its survival. No prairie dog colonies are currently present on or within two miles of the Maysdorf LBA Tract as proposed and the area added by Alternatives 2 or 3.

Active mining would preclude other land uses. Recreational and grazing use of the LBA tract would be severely limited during mining. Oil and gas development would be curtailed and CBNG that is not

recovered prior to mining would be vented and irretrievably lost as the coal is removed. There are approximately 132 acres of BLM-administered public surface lands included in the Maysdorf LBA Tract as applied for and approximately 408 acres of BLM-administered public surface under Alternatives 2 and 3, but only about 164 acres of the public surface are currently accessible to the public under any of the alternatives. Within 10 years after initiation of each reclamation phase, rangeland and wildlife use would return to near premining levels. The cumulative impacts of energy development (coal mining, oil and gas) in the PRB are and will continue to contribute to a reduction in hunting opportunities for some animals (pronghorn, mule deer, and sage grouse).

The Maysdorf LBA Tract has been surveyed for cultural resources at the Class III level. A total of 39 archeological sites were identified in the Maysdorf LBA Tract cultural survey area. Three historic trails and one prehistoric open camp are the only sites that were considered eligible for the NRHP by the cultural site recorder. Until consultation with SHPO has occurred and agreement regarding NRHP eligibility has been reached, all sites would be protected from disturbance.

No sites of Native American religious or cultural importance have been identified on the LBA tract. Two tribes have expressed concerns or requested additional information, but have not identified specific sites that are of concern to their tribes at this time. If such sites or localities are identified at a later date,

appropriate action must be taken to address concerns related to those sites.

Mining activities on the Maysdorf LBA Tract would be visible from Wyoming Highway 59 and several county roads. Mining would affect landscapes classified by BLM as VRM Class V, and the landscape character would not be significantly changed following reclamation. No unique visual resources have been identified on or near the LBA tract.

Impacts from noise generated by mining activities on the Maysdorf LBA Tract are not expected to be significant due to the remote nature of the site. The nearest occupied dwelling is located more than one mile from the western edge of the tract and no major noise impacts are expected for this dwelling.

Leasing the Maysdorf LBA Tract would extend the length of time that coal is shipped from the permitted Cordero Rojo Mine, which would extend the length of time that coal transportation facilities would be required under the Proposed Action or Alternatives 2 or 3. Vehicular traffic to and from the mine would continue for up to nine additional years. The mine is currently evaluating options to relocate several county roads in order to recover the coal in existing leases. Active pipelines and utility lines would have to be relocated in accordance with previous agreements, or agreements would have to be negotiated for their removal or relocation.

Royalty and bonus payments for the coal in the LBA tract would be

collected by the federal government and split with the state. Assuming an average coal price of \$5.80 per ton recovered and a potential range of bonus payments of 30 to 97 cents per ton, the potential additional federal revenues would range from approximately \$201 to \$408 million, depending on the alternative selected and the bonus price at the time the coal is leased. Potential additional revenue to the state would range from approximately \$279 to \$523 million. Mine life, and thus employment, would be extended from six to nine years at the Cordero Rojo Mine.

With regard to Environmental Justice issues, it was determined that potentially adverse impacts do not disproportionately affect minorities, low-income groups or Native American tribes or groups. No tribal lands or Native American communities are included in this area, and no Native American treaty rights or Native American trust resources are known to exist for this area.

Under the No Action Alternative, the coal lease application would be rejected and the area contained in the application would not be offered for lease at this time. The tract could be nominated for lease again in the future. Under the No Action Alternative, the impacts described in the preceding paragraphs to topography and physiology, geology and minerals, soils, air quality, water resources, AVFs, wetlands, vegetation, wildlife, T&E species, land use and recreation, cultural resources, Native American concerns, paleontological resources, visual resources, noise,

transportation, and socioeconomics would occur on the existing Cordero Rojo Mine coal leases, but these impacts would not be extended onto the Maysdorf LBA Tract. Portions of the LBA tract adjacent to the existing Cordero Rojo or Belle Ayr Mines would be disturbed to recover the coal in the existing leases.

If impacts are identified during the leasing process that are not mitigated by existing required mitigation measures, BLM can include additional mitigation measures, in the form of stipulations on the new lease, within the limits of its regulatory authority. BLM has not identified additional special stipulations that should be added to the BLM lease or areas where additional or increased monitoring measures are recommended.

Cumulative impacts result from the incremental impacts of an action added to other past, present, and reasonably foreseeable future actions, regardless of who is responsible for such actions. Cumulative impacts can result from individually minor, but collectively significant, actions occurring over time.

Since decertification of the Powder River Federal Coal Region in 1990, 17 coal leases containing more than five billion tons of federal coal have been issued following competitive sealed-bid sales. Three exchanges of federal coal in the Wyoming portion of the Powder River Federal Coal Region have also been completed. Twelve additional coal lease applications, including the Maysdorf application, are currently

pending. The pending LBA applications contain approximately 4.4 billion tons of coal.

BLM is completing a regional technical study, called the PRB Coal Review, to help evaluate the cumulative impacts of coal and other mineral development in the PRB. The PRB Coal Review evaluates current conditions as of a baseline year (2003) and potential cumulative impacts related to projected coal and coal-related development, oil and gas and oil-and gas-related development, and other development for 2010, 2015, and 2020. Due to variables associated with future coal production, two projected coal production scenarios (representing an upper and a lower production level) were developed. The projected development levels are based on projected demand and coal market forecasts and include production at the Cordero Rojo Mine during the baseline year and projected production for the mine for 2010, 2015, and 2020.

The Wyoming portion of the PRB is the primary focus of the PRB Coal Review, but the Montana portion of the PRB is included in some studies. A series of reports has been prepared or are being prepared to present the result of the PRB Coal Review studies. The results of the PRB Coal Review studies that have been completed are summarized in Section 4.0 of this EIS.

Cumulative impacts vary by resource, with potential impacts to air quality, groundwater quantity, wildlife habitat, and socioeconomics

generally being the greatest concerns.

The PRB Coal Review air quality study documents the modeled air quality impact of existing operations and projected development activities. The model was used to evaluate impacts of operations during a baseline year (2002) and projected (year 2010) source emissions on several source groups, including near-field receptors in Wyoming and Montana, receptors in nearby federally designated "Class I" areas, and receptors at "Class II" sensitive areas. The EPA guideline CALPUFF model system was used for the modeling analysis.

The existing regional air quality conditions are generally very good. There are limited air pollution emissions sources (few industrial facilities, including the surface coal mines, and few residential emissions in relatively small communities and isolated ranches) and good atmospheric dispersion conditions. The modeling for 2002 and 2010 showed some substantial impacts at several receptors. Table ES-2 presents the maximum modeled impacts on ambient air quality at the near-field receptors in Wyoming and Montana for 2002 and for the 2010 upper and lower coal development scenarios. Table ES-3 lists the projected modeled visibility impacts for 2002 for all analyzed Class I and sensitive Class II areas. For the upper and lower coal production scenarios, it shows the number of additional days that the projected impacts were greater than 1.0 dv (10 percent in extinction) for each site in 2010.

Executive Summary

Table ES-2. Projected Maximum Potential Near-field Impacts ( $\mu\text{g}/\text{m}^3$ ).

Pollutant	Averaging Time	Base Year (2002) Impacts	2010 Lower Development Scenario Impacts	2010 Upper Development Scenario Impacts	Wyoming		Montana		PSD Class II Increments
					AAQS	NAAQS	AAQS	AAQS	
<b>Wyoming Near-field</b>									
NO <sub>2</sub>	Annual	37.3	42.4	49.0	100	100	100	--1	25
SO <sub>2</sub>	Annual	3.9	4.8	5.6	80	60	60	--1	20
		14.5	33.5	34.8	365	260	260	--1	91
PM <sub>10</sub>	Annual	37.9	148.0	154.2	1,300	1,300	1,300	--1	512
		42.7	49.0	<b>56.6</b>	--2	50	50	--1	17
		<b>335.5</b>	<b>378.8</b>	<b>439.9</b>	150	150	150	--1	30
<b>Montana Near-field</b>									
<b>24-hour</b>									
NO <sub>2</sub>	Annual	8.85	11.3	11.8	100	--1	100	100	25
		365.8	415.9	519.5	--	--1	564	--	--
SO <sub>2</sub>	Annual	1.3	2.3	2.7	80	--1	80	80	20
		18.9	19.5	20.4	365	--1	365	365	91
PM <sub>10</sub>	Annual	74.7	76.4	79.8	1,300	--1	1,300	1,300	512
		240.7	246.4	257.3	--	--1	1,300	--	--
<b>24-hour</b>									
PM <sub>10</sub>	Annual	19.6	22.5	27.7	--2	--1	50	50	17
		<b>175.8</b>	<b>200.0</b>	<b>247.7</b>	150	--1	150	150	30

1 No standard or increment.

2 On September 21, 2006, the EPA announced final revisions to the NAAQS for particulate matter, which took effect December 18, 2006. The revision revised the annual PM<sub>10</sub> standard of 50  $\mu\text{g}/\text{m}^3$ . The revisions retained the 24-hour PM<sub>10</sub> standard. The State of Wyoming will enter into rulemaking to revise the Wyoming Ambient Air Quality Standards. See additional discussion in Chapter 3, Section 3.4.2.1.

**Bold values** indicate exceedance of AAQS.

Source: PRB 2006 Review Task 3A Report (BLM 2006b)

Table ES-3. Modeled Change in Visibility Impacts at Class I and Sensitive Class II Areas.

<b>Location</b>	<b>2002</b>	<b>2010 Lower</b>	<b>2010 Upper</b>
	<b>No. of Days &gt;10%</b>	<b>Development Scenario Change in No. of Days &gt; 10%</b>	<b>Development Scenario Change in No. of Days &gt; 10%</b>
<b>Federally and Tribally Designated Class I Areas</b>			
Badlands National Park	238	19	26
Bob Marshall WA	12	2	4
Bridger WA	47	4	7
Fitzpatrick WA	42	3	5
Fort Peck Indian Reservation	69	8	9
Gates of the Mountain WA	14	6	7
Grand Teton National Park	26	2	5
North Absaroka WA	47	6	6
North Cheyenne Indian Reservation	305	5	10
Red Rock Lakes	16	3	5
Scapegoat WA	14	4	4
Teton WA	40	4	5
Theodore Roosevelt National Park	98	15	22
UL Bend WA	49	4	5
Washakie WA	53	2	3
Wind Cave National Park	261	11	15
Yellowstone National Park	42	7	8
<b>Sensitive Class II Areas</b>			
Absaroka Beartooth WA	53	3	5
Agate Fossil Beds National Monument	199	26	30
Big Horn Canyon National Rec. Area	108	7	8
Black Elk WA	263	16	22
Cloud Peak WA	137	8	8
Crow Indian Reservation	284	10	15
Devils Tower National Monument	279	15	21
Fort Belknap Indian Reservation	46	3	4
Fort Laramie National Historic Site	153	27	30
Jedediah Smith WA	23	1	2
Jewel Cave National Monument	267	14	18
Lee Metcalf WA	25	2	4
Mount Naomi WA	8	6	8
Mount Rushmore National Monument	248	19	25
Popo Agie WA	47	7	8
Soldier Creek WA	223	23	29
Wellsville Mountain WA	6	5	7
Wind River Indian Reservation	66	12	15

Source: PRB Coal Review Task 3A Report (BLM 2006b)

The PRB Coal Review groundwater study is in progress, but a number of modeling analyses have previously been conducted to help predict the impacts of surface coal mining on groundwater resources in the PRB. In addition, each mine must monitor groundwater levels in the coal and underlying and overlying aquifers and assess the probable hydrologic consequences of mining as part of the mine permitting process. The monitoring programs track the extent of groundwater drawdown propagation to the west and the extent of recharge and quality of the water in the backfill areas of the mines. The monitoring data indicate that recharge is occurring in the backfill and that water from the backfill will generally be acceptable for premining uses (primarily livestock watering). Modeling and monitoring indicate that the groundwater drawdown impacts of coal mining and CBNG development are overlapping.

The PRB Coal Review studies include an evaluation of the impacts to wildlife and aquatic species as of 2003 and an evaluation of the projected levels of disturbance in the PRB in 2010, 2015, and 2020, based on the projected development levels in those year. As discussed above, impacts to wildlife and fisheries can be classified as short-term and long-term. Short-term impacts are related to habitat disturbance during project development and operation. Long-term impacts result from changes in habitat after reclamation is completed. Habitat fragmentation can result from activities such as roads, well pads, mines, pipelines,

and electrical power lines, as well as increased noise, elevated human presence, dispersal of noxious and invasive weed species, and dust from unpaved road traffic.

The PRB Coal Review used the REMI Policy Insight regional economic model to project cumulative employment and population levels and associated impacts in the PRB for the upper and lower coal production scenarios in 2010, 2015, and 2020. Table ES-4 presents the recent and projected population levels for the counties included in the PRB Coal Review socioeconomic analysis.

This EIS presents the BLM's analysis of environmental impacts under authority of the NEPA and associated rules and guidelines.

The BLM will use this analysis to make a leasing decision. The decision to lease these lands is a necessary requisite for mining, but is not in itself the enabling action that will allow mining. The most detailed analysis prior to mine development would occur after the lease is issued, when the lessee files an application for a surface mining permit and mining plan approval, supported by extensive proposed mining and reclamation plans, to the WDEQ/LQD.

Table ES-4. Recent and Projected PRB Population.

<b>Year</b>	<b>Campbell County</b>	<b>Converse County</b>	<b>Crook County</b>	<b>Johnson County</b>	<b>Sheridan County</b>	<b>Weston County</b>	<b>Total Study Area</b>
<b>Census</b>							
<b>2000</b>	33,698	12,104	5,895	7,108	26,606	6,642	92,053
<b>2003</b>	36,438	12,314	5,986	7,554	27,115	6,671	96,078
<b>Lower Coal Production Scenario</b>							
<b>2010</b>	45,925	13,103	6,542	8,389	28,459	7,108	109,526
<b>2015</b>	48,905	13,671	6,759	8,867	30,016	7,174	115,392
<b>2020</b>	50,995	14,193	6,989	9,326	31,467	7,208	120,178
<b>Upper Coal Production Scenario</b>							
<b>2010</b>	47,662	13,160	6,570	8,424	28,579	7,137	111,532
<b>2015</b>	51,558	13,763	6,802	8,924	30,214	7,219	118,480
<b>2020</b>	54,943	14,313	7,045	9,403	31,733	7,266	124,703
Source: U.S. Census Bureau 2005 (2000 and 2003 data)							