

2.0 PROPOSED ACTION AND ALTERNATIVES

This chapter describes the Proposed Action and alternatives to this action for each of the five LBA¹ tracts being evaluated in this EIS. The five LBA tracts are the NARO North and NARO South LBA Tracts as applied for by PRCC, the Little Thunder LBA Tract as applied for by ALC, the West Roundup LBA Tract as applied for by TCC, and the West Antelope LBA Tract as applied for by ACC. For each tract, the Proposed Action is to hold a separate competitive lease sale and issue a separate lease for the federal coal lands included in the tract. The No Action Alternative (Alternative 1) for each tract is to reject the lease application for that tract and not offer that tract for competitive sale at this time. Alternatives 2 and 3 evaluate alternate tract configurations considered by BLM. Under Alternatives 2 and 3, separate competitive sales would be held and leases issued for federal coal lands included in one or more of the five LBA tracts as modified by the BLM.

Other alternatives considered but not analyzed in detail include :

- holding a competitive lease sale and issuing a lease for federal coal lands included in one or more of the five LBA tracts (as applied for or as modified by BLM), with the assumption that one or more of the tracts would be developed as a new mine (Alternative 4); and

- delaying the sale of one or more of the five LBA tracts as applied for to wait for possible higher coal prices and/or to allow recovery of the CBM resources in the tract prior to mining (Alternative 5). Under this alternative, it is assumed that one or more of the five LBA tracts could be developed later as a maintenance tract or a new start mine, depending on how long the sale was delayed.

Under each Proposed Action, a tract would be offered for lease as applied for at a separate, sealed-bid, competitive lease sale, subject to standard and special lease stipulations developed for the PRB and that tract. The boundaries of each tract would be consistent with the tract configuration proposed by each applicant. For each tract, the Proposed Action assumes that the applicant for that tract would be the successful bidder on that tract and that each tract would be mined as a maintenance lease for an existing mine.

The No Action Alternative for each tract assumes that the application for that tract would be rejected, the tract would not be offered for competitive sale, and the coal contained within the tract would not be mined as proposed. The No Action Alternative assumes that rejection of an application would not affect currently permitted mining activities on existing leases at any of the existing mines and would not preclude an application to lease any rejected tract in the future. Portions of the surface of each of the LBA tracts would

¹ Refer to page xii for a list of abbreviations and acronyms used in this document.

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probably be disturbed due to overstripping to allow coal to be removed from the adjacent, existing leases.

Under Alternatives 2 and 3, BLM has evaluated the unleased federal coal included in and adjacent to each LBA tract and is considering offering a larger or smaller tract for competitive sale, based on that evaluation. The alternate tract configurations analyzed vary for each tract. No alternate tract configurations were identified for the NARO North LBA Tract. For each of the other four LBA Tracts, BLM identified two additional tract configurations to analyze.

LBA tracts are nominated for leasing by companies with an interest in acquiring them but, as discussed in Chapter 1, the LBA process is, by law and regulation, an open, public, competitive sealed-bid process. If a tract is offered for lease, the applicant for that tract may or may not be the high bidder when the lease sale is held.

For each tract, if a decision is made to hold a separate competitive lease sale and there is a successful bidder, a detailed mining and reclamation plan must be developed by the successful bidder and approved before mining can begin on that tract. As discussed in Section 1.2, each mining and reclamation plan would undergo detailed review by state and federal agencies as part of the approval process. Those plans could potentially differ from the plans used to analyze the impacts of the Proposed Action and Alternatives 2 and 3 in this EIS, but the differences

would not be expected to significantly change the impacts described here. These differences would typically be related to the details of mining and reclaiming the tracts but major factors like tons of coal mined, yards of overburden removed, acres disturbed, etc. would not be significantly different from the plans used in this analysis.

An estimate of the coal included in each tract provided by the applicant is given in the following descriptions of the Proposed Action and alternatives for each tract. BLM will independently evaluate the volume and average quality of the coal resources included in each tract offered for sale as part of the fair market value determination process. BLM's estimate of the recoverable federal coal reserves and average quality of the coal included in each tract will be published in the sale notice for each tract that is offered for sale. Some general coal quality information in the area of the LBA Tracts considered in this EIS is included in Section 3.3 of this document.

Under the Proposed Action and the alternatives for each tract it is assumed that an area larger than the tract would have to be disturbed in order to recover all of the coal in that tract. The disturbances outside the coal removal area would be due to activities like overstripping, matching undisturbed topography, and construction of flood control and sediment control structures.

Hazardous and Solid Waste

Under all of the Proposed Actions and alternatives, the procedures and requirements for handling of hazardous and solid wastes would be the same as the procedures and requirements for the existing mining operations. Solid waste that is produced at the existing North Antelope/Rochelle Complex, Black Thunder, North Rochelle, and Antelope Mines consists of floor sweepings, shop rags, lubricant containers, welding rod ends, metal shavings, worn tires, packing material, used filters, and office and food wastes. North Antelope/Rochelle Complex, Black Thunder, North Rochelle, and Antelope Mines dispose of a portion of their solid wastes within their permit boundaries in accordance with WDEQ-approved solid waste disposal plans. Solid waste is also disposed of at the Campbell County landfill. Sewage is handled by WDEQ-permitted sewage systems present on the existing mine facilities. Maintenance and lubrication of most of the equipment takes place at existing shop facilities at all four mines.

Major lubrication, oil changes, etc., of most equipment are performed inside the service building lube bays at the North Antelope/Rochelle Complex, Black Thunder, North Rochelle, and Antelope Mines, where used oil is currently contained and deposited in storage tanks. All of the collected used oils are then recycled off site. These practices would not change if the applicants acquire these LBA tracts.

PRCC, TBCC, TCC, and ACC have reviewed the EPA's *Consolidated List*

of Chemicals Subject to Reporting Under Title III of the Superfund Amendments and Re-authorization Act (SARA) of 1986 (as amended) and EPA's List of Extremely Hazardous Substances as defined in 40 CFR 355 (as amended) for hazardous substances used at their mining operations. PRCC, TBCC, TCC, and ACC maintain files containing Material Safety Data Sheets for all chemicals, compounds and/or substances which are or would be used during the course of mining.

PRCC, TBCC, TCC, and ACC are responsible for ensuring that all production, use, storage, transport, and disposal of hazardous and extremely hazardous materials as a result of mining are in accordance with all applicable existing or hereafter promulgated federal, state, and local government rules, regulations, and guidelines. All mining activities involving the production, use, and/or disposal of hazardous or extremely hazardous materials are and would continue to be conducted so as to minimize potential environmental impacts.

PRCC, TBCC, TCC, and ACC must comply with emergency reporting requirements for releases of hazardous materials. Any release of hazardous or extremely hazardous substances in excess of the reportable quantity, as established in 40 CFR 117, is reported as required by the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)*, as amended. The materials for which such notification must be given are the extremely hazardous substances

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listed in Section 302 of the *Emergency Planning and Community Right to Know Act* and the hazardous substances designated under Section 102 of CERCLA, as amended. If a reportable quantity of a hazardous or extremely hazardous substance is released, immediate notice must be given to the WDEQ Solid and Hazardous Waste Division, WDEQ Water Quality Division, and all other appropriate federal and state agencies.

Each mining company is expected to prepare and implement several plans and/or policies to ensure environmental protection from hazardous and extremely hazardous materials. These plans/policies include:

- Spill Prevention Control and Countermeasure Plans;
- Spill Response Plans;
- Stormwater Pollution Prevention Plans;
- Inventories of Hazardous Chemical Categories Pursuant to Section 313 of SARA, as Amended; and
- Emergency Response Plans.

All mining operations are also required to be in compliance with regulations promulgated under the Resource Conservation and Recovery Act, Federal Water Pollution Control Act (Clean Water Act), Safe Drinking Water Act, Toxic Substances Control Act, Mine Safety and Health Act, Department of Transportation, and

the Federal Clean Air Act. In addition, mining operations must comply with all attendant state rules and regulations relating to hazardous material reporting, transportation, management, and disposal.

Compliance with these rules is the current practice at the North Antelope/Rochelle Complex, Black Thunder, North Rochelle, and Antelope Mines. Acquisition of the LBA tracts by the applicants would not change these current practices nor the type of any wastes generated or disposed at the mines, although quantities of some wastes would increase in proportion to anticipated increases in coal production (e.g., fuel, lubricants, and shop and office wastes).

2.1 Proposed Action and Alternatives for the NARO North LBA Tract

2.1.1 NARO North LBA Tract Proposed Action

PRCC has applied for two separate LBA tracts (NARO North and NARO South). Each tract will be evaluated separately and if a decision is made to lease both of these tracts, a separate competitive lease sale will be held for each tract.

Under the Proposed Action for the NARO North LBA Tract, the tract as applied for by PRCC would be offered for lease at a separate, sealed-bid, competitive lease sale, subject to standard and special lease stipulations developed for the PRB (Appendix D). The boundaries of the tract would be consistent with the tract configuration proposed in the

NARO North LBA Tract lease application (Figure 2-1). The Proposed Action assumes that PRCC will be the successful bidder on the NARO North LBA Tract if it is offered for sale.

The legal description of the proposed NARO North LBA Tract coal lease lands as applied for by PRCC under the Proposed Action is as follows:

T.42N., R.70W., 6th P.M., Campbell County, Wyoming

Section 28: Lots 5 through 16;
495.59 acres
Section 29: Lots 5 through 16;
495.89 acres
Section 30: Lots 9 through 20;
443.67 acres

T.42N., R.71W., 6th P.M., Campbell County, Wyoming

Section 25: Lots 5 through 15;
447.19 acres
Section 26: Lots 7 through 10;
162.22 acres
Section 35: Lots 1, 2, 7 through 10,
15 and 16;
324.82 acres

Total surface area applied for:
2,369.38 acres

Land descriptions and acreage are based on the BLM Status of Public Domain Land and Mineral Titles approved Coal Plats as of July 26, 2000, May 9, 2001 and September 6, 2001.

As indicated in Chapter 1, Section 1.4, no lands in the NARO North LBA Tract were found to be unsuitable for mining. The NARO North Tract as

applied for includes approximately 2,369.38 mineable acres. PRCC estimates that the NARO North Tract includes approximately 323 million tons of in-place coal reserves. Assuming a recovery factor of 95 percent, PRCC estimates that about 306.9 million tons of coal would be recovered from the NARO North LBA Tract as applied for.

BLM will independently evaluate the volume and average quality of the coal resources included in the NARO North LBA Tract as part of the fair market value determination process. BLM's estimate of the mineable reserves and average quality of the coal included in the tracts will be published in the sale notice if the tract is offered for sale. Some coal quality information in the area of the NARO North LBA Tract is included in Section 3.3 of this document.

The approved North Antelope/Rochelle Complex Permit 569 Term T5 includes monitoring and mitigation measures for the North Antelope/Rochelle Complex that are required by SMCRA and Wyoming State Law. If the NARO North LBA Tract is acquired by PRCC, these monitoring and mitigation measures

Figure 2-1

would be extended to cover operations on the NARO North LBA Tract when the coal mining permit is revised to include the tract. This permit would have to be approved before mining operations could take place on the tract. These monitoring and mitigation measures are considered to be part of the Proposed Action and other action alternatives during the leasing process because they are regulatory requirements.

The NARO North LBA Tract would be mined as an integral part of the North Antelope/Rochelle Complex under the Proposed Action. The North Antelope/Rochelle Complex is already operating under both an approved state mining permit and MLA mining plan. Both the approved state mining permit and MLA mining plan would require amendment to include the LBA tract. Since the NARO North LBA Tract would be an extension of the existing North Antelope/Rochelle Complex, the facilities and infrastructure would be the same as those identified in the WDEQ/LQD Mine Permit 569 Term T5 approved December 1, 1999 and the BLM Resource Recovery and Protection Plan approved July 23, 2001 for the North Antelope/Rochelle Complex.

PRCC's currently approved air quality permit from the WDEQ/AQD allows up to 105 million tons of coal per year to be mined in years 2004 through 2006. The North Antelope/Rochelle Complex produced 68.9 million tons of coal in 1999, 70.8 million tons of coal in 2000, and 74.8 million tons of coal in 2001 (Wyoming State Inspector of Mines 1999, 2000, and 2001). Under the No Action

Alternative, the North Antelope/Rochelle Complex would mine its remaining 952 million tons of in-place coal reserves in approximately 12 years at an average production rate of 75 mmtpy (the production rate ranges between 8.7 mmtpy to 105 mmtpy). Under the Proposed Action, PRCC estimates that average annual coal production would be 90 million tons (the production rate ranges between 26 mmtpy to 105 mmtpy), and the life of the mine would be extended by approximately four years.

If PRCC acquires both the NARO North and NARO South LBA Tracts as applied for, they estimate that a total of 1,411.3 million tons of coal would be mined after January 1, 2002, with an estimated 506.9 million tons coming from the two LBA tracts. As of December 31, 2001, 643 million tons of coal had been mined from within the current permitted area of the mine.

Topsoil removal with heavy equipment would proceed ahead of overburden removal. Whenever possible, direct haulage to a reclamation area would be done, but due to scheduling, some topsoil would be temporarily stockpiled. As required by the reclamation plan, heavy equipment again would be used to haul and distribute the stockpiled topsoil.

The North Antelope/Rochelle Complex is one of several mines currently operating in the PRB where the coal seams are notably thick and the overburden is relatively thin. Mining would be conducted in semi-

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independent pits. Overburden removal has been and would continue to be conducted using trucks and shovels, draglines, and/or direct cast blasting. Most overburden and all coal would be drilled and blasted to facilitate efficient excavation. The design of the North Antelope/Rochelle Complex seeks to confine disturbance to the active mine blocks. As overburden is removed, most would be directly placed into areas where coal has already been removed. Once the overburden has been replaced it is sampled and verified to be suitable overburden material, then graded to approximate final contour, ripped and finally topsoiled. If necessary, material that is found to be unsuitable would be adequately covered with suitable overburden material prior to grading and topsoiling. Elevations consistent with an approved PMT plan would be established as quickly as possible. Under certain conditions, the PMT may not be immediately achievable. This occurs when there is an excess of material that may require temporary stockpiling, when there is insufficient material available from current overburden removal operations, or when future mining could redisturb an area already mined. Once a seedbed has been formed, vegetation would be reestablished that is consistent with the postmining land use.

Coal would be produced from two seams (Wyodak-Anderson 1 and Wyodak-Anderson 2) that total 60 to 80 ft thick at several working faces to enable blending of the coal to meet customer quality requirements, to comply with BLM lease requirements

for maximum economic recovery of the coal resource, and to optimize coal removal efficiency with available equipment. Coal would be loaded with electric-powered shovels into off-highway haul trucks for transport to crushing facilities. Coal haul roads would be temporary structures built within the mine areas. Mining efficiency and air quality protection are and would continue to be facilitated by extensive use of near-pit crushers and overland conveyors. There are three existing crushing facilities within the existing permit area. All transfer points on conveyor belts and the truck dump hopper at the processing plant are controlled by baghouse-type dust collectors, PECs, fogger/spray systems, or stilling sheds. There are five existing storage silos, each with a covered storage slot. While sufficient capacity exists, future changes in facilities may be constructed to improve operating efficiency and air quality protection. An additional near-pit crusher/conveyor, railroad loop, and two silos are planned whether or not PRCC acquires the NARO North or NARO South LBA Tracts. PRCC's recently approved (August 14, 2001) air quality permit from the WDEQ/AQD allows a maximum of 105 million tons of coal per year to be mined provided additional coal handling and processing facilities are constructed. The fourth crushing facility and two additional storage silos have been permitted for construction.

Current full-time employment at the North Antelope/Rochelle Complex is 877 but PRCC anticipates that employment will increase to 1,175

under the No Action Alternative. If both the NARO North and NARO South LBA tracts are acquired, PRCC anticipates that the average annual coal production would be approximately 90 million tons, the maximum annual coal production would be 105 million tons, and employment would be 1,185 persons at the maximum annual production rate of 105 million tons.

2.1.2 NARO North LBA Tract Alternative 1

Under the NARO North LBA Tract Alternative 1, the No-Action Alternative, the application to lease the coal included in the NARO North LBA Tract would be rejected, the tract would not be offered for competitive sale, and the coal included in the tract would not be mined. This would not affect permitted mining activities and employment on the existing leases at the North Antelope/Rochelle Complex and would not preclude an application to lease the coal included in the NARO North LBA Tract in the future. Portions of the surface of the NARO North LBA Tract could be disturbed due to overstripping to allow coal to be removed from the adjacent existing leases.

Approximately 14,895.5 acres of federal coal are currently leased at the North Antelope/Rochelle Complex and a total of about 20,410 acres of land will be affected in mining the current leases. If the NARO North and NARO South LBA Tracts are not leased, PRCC estimates that the average annual production at the North Antelope/Rochelle Complex after 2001 will be 75 million tons,

annual production will range from 8.7 million tons to 105 million tons, and employment will be approximately 1,175 persons at the maximum production rate.

In order to compare the economic and environmental consequences of mining these lands versus not mining them, this EIS was prepared under the assumption that an LBA tract would not be mined in the foreseeable future if the No Action Alternative for that tract is selected. However, selection of this alternative would not preclude leasing and mining of a rejected tract in the future, either as a maintenance tract for existing operations or as a new start mine.

2.2 Proposed Action and Alternatives for the NARO South LBA Tract

2.2.1 NARO South LBA Tract Proposed Action

PRCC has applied for two separate LBA tracts (NARO North and NARO South). Each tract will be evaluated separately and, if a decision is made to lease both of these tracts, a separate competitive lease sale will be held for each tract.

Under the Proposed Action for the NARO South LBA Tract, the tract as applied for by PRCC would be offered for lease at a separate, sealed-bid, competitive lease sale, subject to standard and special lease stipulations developed for the PRB (Appendix D). The boundaries of the tract would be consistent with the tract configuration proposed in the NARO South LBA Tract lease

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application (Figure 2-1). The Proposed Action assumes that PRCC will be the successful bidder on the NARO South LBA Tract if it is offered for sale.

The legal description of the proposed NARO South LBA Tract coal lease lands as applied for by PRCC under the Proposed Action is as follows:

T.41N., R.70W., 6th P.M., Campbell and Converse Counties, Wyoming

Section 19: Lots 6 through 11, 12(S½), 13 through 20;

584.555 acres

Section 20: Lots 5(S½), 6(S½), 7(S½), 8(S½), 9 through 16;

402.645 acres

Section 21: Lots 5(S½), 12, and 13;

99.695 acres

Section 28: Lots 3 through 6, 11, and NE¼ SW¼;

238.62 acres

Section 29: Lots 1 through 12;

484.08 acres

Section 30: Lots 5 through 12;

324.04 acres

Total surface area applied for:

2,133.635 acres

Land descriptions and acreage are based on the BLM Status of Public Domain Land and Mineral Titles approved Coal Plats as of July 26, 2000, May 9, 2001 and September 6, 2001.

As indicated in Chapter 1, Section 1.4, some of the above-described lands in the NARO South LBA Tract are unsuitable for mining due to the presence of the BNSF & UP railroad ROW and partially burned areas

where the coal is not recoverable. Although these lands would not be mined, they are included in the tract to allow maximum recovery of all the mineable coal outside of the railroad ROW and associated buffer zones and the partially burned areas, and to comply with the coal leasing regulations, which do not allow leasing of less than 10-acre aliquot parts. The NARO South Tract as applied for includes approximately 2,133.635 mineable acres. PRCC estimates that it includes approximately 241 million tons of in-place coal and that about 200 million tons of that coal would be recoverable. An average recovery factor of approximately 83 percent is therefore assumed, based largely upon PRCC's estimate of the unmineable reserves within the ROW and unrecoverable coal in partially burned areas.

BLM will independently evaluate the volume and average quality of the coal resources included in the NARO South LBA Tract as part of the fair market value determination process. The fact that the coal within the ROW and partially burned area cannot all be recovered would be considered by BLM in the fair market value determination for the LBA tract. BLM's estimate of the recoverable reserves and average quality of the coal included in the tracts will be published in the sale notice if the tract is offered for sale. Some coal quality information in the area of the NARO South LBA Tract is included in Section 3.3 of this document.

The approved North Antelope/Rochelle Complex Permit 569 Term

T5 includes monitoring and mitigation measures for the North Antelope/Rochelle Complex that are required by SMCRA and Wyoming State Law. If the NARO South LBA Tract is acquired by PRCC, these monitoring and mitigation measures would be extended to cover operations on the NARO South LBA Tract when the coal mining permit is revised to include the tract. This permit would have to be approved before mining operations could take place on the tract. These monitoring and mitigation measures are considered to be part of the Proposed Action and other action alternatives during the leasing process because they are regulatory requirements.

The NARO South LBA Tract would be mined as an integral part of the North Antelope/Rochelle Complex under the Proposed Action. The North Antelope/Rochelle Complex is already operating under both an approved state mining permit and MLA mining plan. Both the approved state mining permit and MLA mining plan would require amendment to include the LBA tract. Since the NARO South LBA Tract would be an extension of the existing North Antelope/Rochelle Complex, the facilities and infrastructure would be the same as those identified in the WDEQ/LQD Mine Permit 569 Term T5 approved December 1, 1999 and the BLM Resource Recovery and Protection Plan approved July 23, 2001 for the North Antelope/Rochelle Complex.

PRCC's currently approved air quality permit from the WDEQ/AQD allows up to 105 million tons of coal per year to be mined in years 2004 through

2006. The North Antelope/Rochelle Complex produced 68.9 million tons of coal in 1999, 70.8 million tons of coal in 2000, and 74.8 million tons of coal in 2001 (Wyoming State Inspector of Mines 1999, 2000, and 2001). Under the No Action Alternative, the North Antelope/Rochelle Complex would mine its remaining 952 million tons of in-place coal reserves in approximately 12 years at an average production rate of 75 mmtpy (the production rate ranges between 8.7 mmtpy to 105 mmtpy). Under the Proposed Action, PRCC estimates that average annual coal production would be 90 million tons (the production rate ranges between 26 mmtpy to 105 mmtpy), and the life of the mine would be extended by approximately four years.

If PRCC acquires both the NARO North and NARO South LBA Tracts as applied for, they estimate that a total of 1,411.3 million tons of coal would be mined after January 1, 2002, with an estimated 506.9 million tons coming from the two LBA tracts. As of December 31, 2001, 643 million tons of coal had been mined from within the current permitted area of the mine.

Topsoil removal with heavy equipment would proceed ahead of overburden removal. Whenever possible, direct haulage to a reclamation area would be done, but due to scheduling, some topsoil would be temporarily stockpiled. As required by the reclamation plan, heavy equipment again would be used to haul and distribute the stockpiled topsoil.

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The North Antelope/Rochelle Complex is one of several mines currently operating in the PRB where the coal seams are notably thick and the overburden is relatively thin. Mining would be conducted in semi-independent pits. Overburden removal has been and would continue to be conducted using trucks and shovels, draglines, and/or direct cast blasting. Most overburden and all coal would be drilled and blasted to facilitate efficient excavation. The design of the North Antelope/Rochelle Complex seeks to confine disturbance to the active mine blocks. As overburden is removed, most would be directly placed into areas where coal has already been removed. Once the overburden has been replaced it is sampled and verified to be suitable overburden material, then graded to approximate final contour, ripped and finally topsoiled. If necessary, material that is found to be unsuitable would be adequately covered with suitable overburden material prior to grading and topsoiling. Elevations consistent with an approved PMT plan would be established as quickly as possible. Under certain conditions, the PMT may not be immediately achievable. This occurs when there is an excess of material that may require temporary stockpiling, when there is insufficient material available from current overburden removal operations, or when future mining could redisturb an area already mined. Once a seedbed has been formed, vegetation would be reestablished that is consistent with the postmining land use.

Coal would be produced from two seams (Wyodak-Anderson 1 and Wyodak-Anderson 2) that total 60 to 80 ft thick at several working faces to enable blending of the coal to meet customer quality requirements, to comply with BLM lease requirements for maximum economic recovery of the coal resource, and to optimize coal removal efficiency with available equipment. Coal would be loaded with electric-powered shovels into off-highway haul trucks for transport to crushing facilities. Coal haul roads would be temporary structures built within the mine areas. Mining efficiency and air quality protection are and would continue to be facilitated by extensive use of near-pit crushers and overland conveyors. There are three existing crushing facilities within the existing permit area. All transfer points on conveyor belts and the truck dump hopper at the processing plant are controlled by baghouse-type dust collectors, PECs, fogger/spray systems, or stilling sheds. There are five existing storage silos, each with a covered storage slot. While sufficient capacity exists, future changes in facilities may be constructed to improve operating efficiency and air quality protection. An additional near-pit crusher/conveyor, railroad loop, and two silos are planned whether or not PRCC acquires the NARO North or NARO South LBA Tracts. PRCC's recently approved (August 14, 2001) air quality permit from the WDEQ/AQD allows a maximum of 105 million tons of coal per year to be mined provided additional coal handling and processing facilities are constructed. The fourth crushing facility and two additional storage

silos have been permitted for construction.

Current full-time employment at the North Antelope/Rochelle Complex is 877, but PRCC anticipates that employment will increase to 1,175 under the No Action Alternative. If both the NARO North and NARO South LBA Tracts are acquired, PRCC anticipates that the average annual coal production would be approximately 90 million tons, the maximum annual coal production would be 105 million tons, and employment would be 1,185 persons at the maximum annual production rate of 105 million tons.

The NARO South LBA Tract was applied for by PRCC, but it is also located adjacent to the Antelope Mine, operated by ACC. ACC may also be in a position to mine the NARO South LBA Tract under the Proposed Action or Alternative 2 as a maintenance lease. If ACC acquires the tract, the rate of coal production, mining sequence, equipment, and facilities would be different than if PRCC acquired the tract as a maintenance lease, as described above. However, the area of disturbance and the impacts of removing the coal would not be substantially different from the area of disturbance and the impacts of PRCC mining the tract.

2.2.2 NARO South LBA Tract Alternative 1

Under the NARO South LBA Tract Alternative 1, the No-Action Alternative, the application to lease the coal included in the NARO South LBA Tract would be rejected, the tract

would not be offered for competitive sale, and the coal included in the tract would not be mined. This would not affect permitted mining activities and employment on the existing leases at the North Antelope/Rochelle Complex and would not preclude an application to lease the coal included in the NARO South LBA Tract in the future. Portions of the surface of the NARO South LBA Tract could be disturbed due to overstripping to allow coal to be removed from the adjacent existing leases.

Approximately 14,895.5 acres of federal coal are currently leased at the North Antelope/Rochelle Complex and a total of about 20,410 acres of land will be affected in mining the current leases. If the NARO North and NARO South LBA Tracts are not leased, PRCC estimates that the average annual production at the North Antelope/Rochelle Complex after 2001 will be 75 million tons, annual production will range from 8.7 million tons to 105 million tons, and employment will be approximately 1,175 persons at the maximum production rate.

In order to compare the economic and environmental consequences of mining these lands versus not mining them, this EIS was prepared under the assumption that an LBA tract would not be mined in the foreseeable future if the No Action Alternative for that tract is selected. However, selection of this alternative would not preclude leasing and mining of a rejected tract in the future, either as a maintenance tract for existing operations or as a new start mine.

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2.2.3 NARO South LBA Tract Alternative 2

Under Alternative 2 for the NARO South LBA Tract, BLM would reconfigure the tract and hold a competitive coal sale for the lands included in the reconfigured tract and issue a lease to the successful bidder. The modified tract would be subject to standard and special lease stipulations developed for the PRB and this tract if it is offered for sale (Appendix D). Alternative 2 for the NARO South LBA Tract assumes that PRCC would be the successful bidder on the tract if a lease sale is held and that the tract would be mined as a maintenance lease for the North Antelope/Rochelle Complex. Other assumptions are the same as for the Proposed Action.

BLM is considering an alternate tract configuration for the NARO South LBA Tract to potentially increase competitive interest in the tract and to maintain the fair market value of the remaining unleased federal coal in this area. Under this alternative, the BLM is considering adding additional lands to the NARO South LBA Tract as applied for. The lands that BLM is considering adding lie between the western edge of the tract as applied for and the BNSF & UP railroad ROW (Figure 2-1). Under Alternative 2 for the NARO South LBA Tract, BLM is considering adding all or part of the following lands to the NARO South LBA Tract:

T.41N., R.71W., 6th P.M., Campbell County, Wyoming

Section 23: Lots 1, 8, and 9;

120.88 acres
Section 24: Lots 1 through 16;
678.65 acres
Section 25: Lots 1 through 4, 9, 10,
and 12(N½)
268.64 acres
Total: 1,068.17 acres

PRCC estimates that these 1,068.17 acres contain approximately 146 million tons of mineable coal. If all of these lands are added to the NARO South LBA Tract, it would include approximately 3,201.81 mineable acres. PRCC estimates that the reconfigured tract includes approximately 387 million tons of in-place coal. Using PRCC's projected recovery factor of 79 percent, the reconfigured tract would contain about 307 million tons of recoverable coal. PRCC estimates that the average recovery factor for this reconfigured tract would be 79 percent because the 1,068.17 acres added in this alternative include areas that lie within the BNSF & UP railroad ROW and are therefore unsuitable for mining according to the coal leasing unsuitability criteria (43 CFR 3461). Although the coal included in these lands could not be mined, these lands have been included in this alternative tract configuration to allow maximum recovery of all the mineable coal outside of the ROW and to comply with the coal leasing regulations, which do not allow leasing of less than 10-acre aliquot parts.

BLM will independently evaluate the volume and average quality of the coal resources included in each tract offered for sale as part of the fair

market value determination process. The fact that the coal within the ROW and partially burned area cannot all be recovered would be considered by BLM in the fair market value determination for the LBA tract. BLM's estimate of the recoverable federal coal reserves and average quality of the coal included in each tract will be published in the sale notice for each tract that is offered for sale. Some general coal quality information in the area of the LBA tracts considered in this EIS is included in Section 3.3 of this document.

2.2.4 NARO South LBA Tract Alternative 3

Under Alternative 3 for the NARO South LBA Tract, BLM is considering a different tract configuration. As under Alternative 2, if this tract configuration is selected BLM would hold a competitive coal sale and issue a lease to the successful bidder. The modified tract would be subject to standard and special lease stipulations developed for the PRB and this tract if it is offered for sale (Appendix D). Alternative 3 for the NARO South LBA Tract assumes that PRCC would be the successful bidder on the tract if a lease sale is held and that the tract would be mined as a maintenance lease for the North Antelope/Rochelle Complex. Other assumptions would be the same as for the Proposed Action.

Under this alternative for the NARO South LBA Tract, BLM is considering removing some of the lands applied for in the western portion of the NARO South LBA Tract from

consideration for leasing at this time and offering a smaller tract for competitive sale (Figure 2-1). The coal that BLM is considering removing from the tract as applied for could be combined with the unleased federal coal between the reconfigured NARO South LBA Tract and the BNSF & UP railroad ROW to create a tract which could potentially have more competitive interest and a higher fair market value if it is leased in the future. The lands that BLM is considering removing from the tract are:

T.41N., R.70W., 6th P.M., Campbell County, Wyoming

Section 19: Lots 6 through 11 and 14 through 19;

483.74 acres

Section 30: Lots 6 through 11;

243.01 acres

Total:

726.75 acres

PRCC estimates that these 726.75 acres contain approximately 99.7 million tons of mineable coal. The Alternative 3 reconfiguration of the NARO South LBA Tract, therefore, results in a tract comprising approximately 1,406.89 mineable acres. PRCC estimates that the reconfigured tract includes approximately 141.4 million tons of in-place coal and that about 128 million tons of that coal would be recoverable. PRCC estimates that the average recovery factor for this reconfigured tract would be 91 percent because these 726.75 acres include lands unsuitable for mining due to the presence of partially

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burned areas where the coal is not recoverable.

BLM will independently evaluate the volume and average quality of the coal resources included in each tract offered for sale as part of the fair market value determination process. The fact that the coal within the partially burned area cannot all be recovered would be considered by BLM in the fair market value determination for the LBA tract. BLM's estimate of the recoverable federal coal reserves and average quality of the coal included in each tract will be published in the sale notice for each tract that is offered for sale. Some general coal quality information in the area of the LBA tracts considered in this EIS is included in Section 3.3 of this document.

2.3 Proposed Action and Alternatives for the Little Thunder LBA Tract

2.3.1 Little Thunder LBA Tract Proposed Action

Under the Proposed Action for the Little Thunder LBA Tract, the tract as applied for by ALC would be offered for lease at a separate, sealed-bid, competitive lease sale, subject to standard and special lease stipulations developed for the PRB and this tract (Appendix D). The boundaries of the tract would be consistent with the tract configurations proposed in the Little Thunder LBA Tract lease application (Figure 2-2). The Proposed Action assumes that ALC will be the

successful bidder on the Little Thunder LBA Tract if it is offered for sale.

The legal description of the proposed Little Thunder LBA Tract coal lease lands as applied for by ALC under the Proposed Action is as follows:

T.43N., R.71W., 6th P.M., Campbell County, Wyoming

Section 2: Lots 5, 6, 11 through 14, 19 and 20;

320.93 acres

Section 11: Lots 1, 2, 7 through 10, 15 and 16;

302.42 acres

Section 12: Lots 2(W¹/₂ and SE¹/₄), 3 through 16;

602.60 acres

Section 13: Lots 1 through 16;

648.28 acres

Figure 2-2

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Section 14: Lots 1, 2, 6 through 9, 14 and 15;

299.87 acres

Section 24: Lots 1 through 16;

630.52 acres

Section 25: Lots 1, 2, 7 through 10, 15 and 16;

315.78 acres

T.44N., R.71W., 6th P.M., Campbell County, Wyoming

Section 35: Lots 1, 2, 7 through 10, 15 and 16;

328.92 acres

Total surface area applied for:

3,449.32 acres

Land descriptions and acreage are based on the BLM Status of Public Domain Land and Mineral Titles approved Coal Plats as of August 23, 2001 and August 24, 2001.

As indicated in Chapter 1, Section 1.4, some of the above described lands in the Little Thunder LBA Tract are unsuitable for mining due to the presence of the BNSF & UP railroad and Wyoming Highway 450 ROWs. Although these lands would not be mined, they are included in the tract to allow maximum recovery of all the mineable coal outside of the railroad and highway rights-of-way and associated buffer zones and to comply with the coal leasing regulations, which do not allow leasing of less than 10-acre aliquot parts. The tract as applied for includes approximately 3,449.32 mineable acres. TBCC estimates that it includes approximately 479.3 million tons of in-place coal, and that about 440 million tons of that coal would be

recoverable. An average recovery factor of approximately 92 percent is therefore assumed, based largely upon TBCC's estimate of the unmineable reserves within the ROWs.

BLM will independently evaluate the volume and average quality of the mineable coal resources included in the tract as part of the fair market value determination process. The fact that the coal within the ROWs cannot all be recovered would be considered by BLM in the fair market value determination for the LBA tract. BLM's estimate of the mineable reserves and average quality of the coal included in the tract will be published in the sale notice if the tract is offered for sale. Some coal quality information in the area of the Little Thunder LBA Tract is included in Section 3.3 of this document.

The approved Black Thunder Mine Permit 233 Term T6 includes monitoring and mitigation measures for the Black Thunder Mine that are required by SMCRA and Wyoming State Law. If the Little Thunder LBA Tract is acquired by ALC, these monitoring and mitigation measures would be extended to cover operations on the LBA tract when the coal mining permit is revised to include the tract. This permit would have to be approved before mining operations could take place on the tract. These monitoring and mitigation measures are considered to be part of the Proposed Action and other action alternatives during the leasing process because they are regulatory requirements.

The Little Thunder LBA Tract would be mined as an integral part of the Black Thunder Mine under the Proposed Action. The Black Thunder Mine is already operating under both an approved state mining permit and MLA mining plan. Both the approved state mining permit and MLA mining plan would require amendment to include the LBA tract. Since the Little Thunder LBA Tract would be an extension of the existing Black Thunder Mine, the facilities and infrastructure would be the same as those identified in the WDEQ/LQD Mine Permit 233 Term T6 approved June 29, 2000 and the BLM Resource Recovery and Protection Plan approved October 5, 1999 for the Black Thunder Mine.

TBCC's currently approved air quality permit from the WDEQ/AQD allows up to 100 million tons of coal per year to be mined through year 2027. The Black Thunder Mine produced 48.7 million tons of coal in 1999, 60.1 million tons in 2000, and 67.6 million tons in 2001 (Wyoming State Inspector of Mines 1999, 2000, and 2001). Under the No Action Alternative, TBCC estimates that the Black Thunder Mine will produce 68.5 million tons per year for five years. Production will decrease when the West Pit of the mine reaches the existing West Black Thunder Lease boundary in 2008. The production rate will drop after 2008 because the configuration of the remaining reserves will cause the mine to relocate and retire mining equipment. Due to the mining conditions, the mine will produce an average of 23.3 million tons per year during the last 15 years. TBCC estimates that,

under the No Action Alternative, the mine will produce its remaining 919.4 million tons or recoverable coal reserves over a 24-year time-period at an average annual production rate of 38.3 million tons.

Under the Proposed Action, TBCC estimates that the Black Thunder mine would produce between 66 and 68.5 million tons per year for the next 13 years, then production would decrease when the mining conditions and pit configurations change once the West Pit reaches the Little Thunder Lease Boundary. Acquisition of the Little Thunder LBA Tract would allow the Black Thunder Mine to maintain peak production rates between 66 and 68.5 million tons per year for eight additional years. Under the Proposed Action, the mine would produce 1,359.4 million tons of recoverable coal reserves over a 32-year time-period at an average annual production rate of 42.5 million tons.

If ALC acquires the Little Thunder LBA Tract as applied for, they estimate that a total of 1,359.4 million tons of recoverable coal would be mined after January 1, 2002, with an estimated 440 million tons coming from the LBA tract. This estimate of recoverable reserves equates to about an eight percent loss of coal under normal mining practices. As of December 31, 2001, 699.9 million tons of coal have been mined from within the current permitted area of the mine.

Topsoil removal with heavy equipment would proceed ahead of overburden removal. Whenever

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possible, direct haulage to a reclamation area would be done, but due to scheduling, some topsoil would be temporarily stockpiled. As required by the reclamation plan, heavy equipment again would be used to haul and distribute the stockpiled topsoil.

The Black Thunder Mine is one of several mines currently operating in the PRB where the coal seams are notably thick and the overburden is relatively thin. Mining would be conducted in three separate pits identified as the West Pit, South Pit and North Pit. Overburden removal has been and would continue to be conducted using trucks and shovels, draglines, and/or direct cast blasting. Other equipment used during overburden removal and backfilling includes dozers, scrapers, excavators, front-end loaders, graders and water trucks. Most overburden and all coal is drilled and blasted to facilitate efficient excavation. The design of the Black Thunder Mine seeks to confine disturbance to the active mine blocks. As overburden is removed, most is directly placed into areas where coal has already been removed. Once the overburden has been replaced it is sampled and verified to be suitable overburden material, then graded to approximate final contour, ripped and finally topsoiled. If necessary, material that is found to be unsuitable would be adequately covered with suitable material prior to grading and topsoiling. Elevations consistent with an approved PMT plan would be established as quickly as possible. Under certain conditions, the PMT may not be immediately achievable. This occurs

when there is an excess of material that may require temporary stockpiling, when there is insufficient material available from current overburden removal operations, or when future mining could redisturb an area already mined. Once a seedbed has been formed, vegetation would be reestablished that is consistent with the postmining land use.

Coal would be produced from three seams, the Upper, Middle, and Lower Wyodak, at several working faces to enable blending of the coal to meet customer quality requirements, to comply with BLM lease requirements for maximum economic recovery of the coal resource, and to optimize coal removal efficiency with available equipment. Mining efficiency and air quality protection are and would continue to be facilitated by extensive use of near-pit crushers and overland conveyors. Coal would be loaded with electric-powered shovels or hydraulic excavators into off-highway haul trucks for transport to crushing facilities. Coal haul roads would be temporary structures built within the mine areas. All coal transfer location points and crushing operations are controlled by baghouse-type dust collectors or PECs. The truck dumping operations use stilling sheds to control fugitive dust and the overland conveyor is covered by a dust hood. There are two existing crushing facilities, two silos, and a slot storage facility within the permit area that provide capacity to produce at the permitted level. While sufficient capacity exists, future changes in facilities may be constructed to improve operating

efficiency and air quality protection. The existing near-pit crusher/conveyor systems would probably be relocated if ALC acquires the Little Thunder LBA Tract as applied for.

Current full-time employment at the Black Thunder Mine is approximately 600. If the LBA tract is acquired, TBCC anticipates that the average annual coal production would be approximately 42.5 million tons and no employment changes would be expected.

2.3.2 Little Thunder LBA Tract Alternative 1

Under the Little Thunder LBA Tract Alternative 1, the No-Action Alternative, the application to lease the coal included in the Little Thunder LBA Tract would be rejected, the tract would not be offered for competitive sale, and the coal included in the tract would not be mined. This would not affect permitted mining activities and employment on the existing leases at the Black Thunder Mine and would not preclude an application to lease the coal included in the Little Thunder LBA Tract in the future. Portions of the surface of the Little Thunder LBA Tract could be disturbed due to overstripping to allow coal to be removed from the adjacent existing leases.

Approximately 12,772.9 acres of federal coal are currently leased at the Black Thunder Mine and a total of about 18,476 acres of land will be affected in mining the current leases. Under the No Action Alternative,

TBCC estimates that the average annual production at the Black Thunder Mine after 2001 will be 38.3 million tons, and average employment will be approximately 600 persons.

In order to compare the economic and environmental consequences of mining these lands versus not mining them, this EIS was prepared under the assumption that an LBA tract would not be mined in the foreseeable future if the No Action Alternative for that tract is selected. However, selection of this alternative would not preclude leasing and mining of a rejected tract in the future, either as a maintenance tract for existing operations or as a new start mine.

2.3.3 Little Thunder LBA Tract Alternative 2

Under Alternative 2 for the Little Thunder LBA Tract, BLM would reconfigure the tract and hold a competitive coal sale for the lands included in the reconfigured tract and issue a lease to the successful bidder. The modified tract would be subject to standard and special lease stipulations developed for the PRB and this tract if it is offered for sale (Appendix D). Alternative 2 for the Little Thunder LBA Tract assumes that ALC would be the successful bidder on the tract if a lease sale is held and that the tract would be mined as a maintenance lease for the Black Thunder Mine. Other assumptions are the same as for the Proposed Action.

BLM is considering an alternate tract configuration for the Little Thunder LBA Tract in order to avoid creating a

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potential bypass situation and to enhance the fair market value of the remaining unleased coal in this area. Under this alternative, BLM is considering adding lands to the Little Thunder LBA Tract as applied for Figure 2-2). The lands that BLM is considering adding to the tract are:

T.43N., R.71W., 6th P.M., Campbell County, Wyoming

Section 1: Lot 16 (S½);

19.81 acres

Section 2: Lots 7 through 10 and 15 through 18;

321.18 acres

Section 11: Lots 3 through 6 and 11 through 14;

318.93 acres

Section 14: NW¼ NW¼, Lots 3 through 5 and 10 through 13;

324.79 acres

Section 25: Lots 3 through 6 and 11 through 14;

316.37 acres

T.44N., R.71W., 6th P.M., Campbell County, Wyoming

Section 35: Lots 3 through 6 and 11 through 14;

333.10 acres

Total: 1,634.18 acres

TBCC estimates that these 1,634.18 acres contain approximately 216 million tons of in-place coal. The Alternative 2 reconfiguration of the Little Thunder LBA Tract, therefore, results in a tract comprising approximately 5,083.50 acres containing approximately 695.3 million tons of in-place coal. Not all of the coal included in this tract

would be mineable, however. Some of the coal added by BLM under Alternative 2 is located within the BNSF & UP railroad ROW. This coal will not be mined because it has been determined to be unsuitable for mining according to the coal leasing unsuitability criteria (43 CFR 3461). Although the coal included in these lands within the ROW could not be mined, these lands would be included in this alternative tract configuration to allow maximum recovery of all the mineable reserves adjacent to the ROW and to comply with the coal leasing regulations, which do not allow leasing of less than 10-acre aliquot parts. TBCC estimates that approximately 113 million tons of coal would be produced from these additional 1,634.18 acres. The reconfigured tract would contain about 553 million tons of recoverable coal.

BLM will independently evaluate the volume and average quality of the coal resources included in each tract offered for sale as part of the fair market value determination process. The fact that the coal within the ROW cannot all be recovered would be considered by BLM in the fair market value determination for the LBA tract. BLM's estimate of the recoverable federal coal reserves and average quality of the coal included in each tract will be published in the sale notice for each tract that is offered for sale. Some general coal quality information in the area of the LBA tracts considered in this EIS is included in Section 3.3 of this document.

2.3.4 Little Thunder LBA Tract Alternative 3

Under Alternative 3 for the Little Thunder LBA Tract, BLM is considering splitting the tract described under Alternative 2 and offering two tracts for competitive sale. The two tracts would each be subject to standard and special lease stipulations developed for the PRB and each tract if they are offered for sale (Appendix D). Alternative 3 for the Little Thunder LBA Tract assumes that ALC would be the successful bidder on the two tracts if lease sales are held and that the tracts would be mined as maintenance leases for the Black Thunder Mine. Other assumptions would be the same as for the Little Thunder LBA Tract Proposed Action.

Under Alternative 3, BLM is considering a division of the tract described in Alternative 2 into a north tract and a south tract in order to increase competitive interest in the federal coal. The tract described in Alternative 2 would be split into two tracts roughly along State Highway 450 and the BNSF & UP railroad spur to the Jacobs Ranch and Black Thunder Mines (Figure 2-2). The two tracts would be offered for sale at separate, competitive sealed bid sales. Both the north and south tracts could be offered for sale at this time, or the south tract could be offered for sale at this time and the north tract could potentially be combined with other unleased federal coal to create a larger tract. This north tract would potentially be of competitive interest to more than one mine.

The lands that BLM is considering including in the north tract are:

T.44N., R.71W., 6th P.M., Campbell County, Wyoming

Section 35: Lots 1 through 16;
662.02 acres

T.43N., R.71W., 6th P.M., Campbell County, Wyoming

Section 2: Lots 5 through 14;
403.47 acres

Total: 1,065.49 acres

The lands that BLM is considering including in the south tract are:

T.43N., R.71W., 6th P.M., Campbell County, Wyoming

Section 1: Lot 16(S $\frac{1}{2}$);
19.81 acres

Section 2: Lots 15 through 20;
238.64 acres

Section 11: Lots 1 through 16;
621.35 acres

Section 12: Lots 2(W $\frac{1}{2}$, SE $\frac{1}{4}$), 3 through 16;
602.60 acres

Section 13: Lots 1 through 16;
648.28 acres

Section 14: NW $\frac{1}{4}$ NW $\frac{1}{4}$, Lots 1 through 15;
624.66 acres

Section 24: Lots 1 through 16;
630.52 acres

Section 25: Lots 1 through 16;
632.15 acres

Total: 4,018.01 acres

The Alternative 3 reconfiguration of the Little Thunder LBA Tract,

therefore, results in a north tract comprising 1,065.49 acres containing approximately 155.7 million tons of in-place coal, and a south tract comprising 4,018.01 acres containing approximately 539.6 million tons of in-place coal, according to information provided by the applicant. As discussed under Alternative 2, not all of the coal included in the north and south tracts would be mineable. Some of the coal included in the two tracts is located within the BNSF & UP railroad ROW. This coal would not be mined because it has been determined to be unsuitable for mining according to the coal leasing unsuitability criteria (43 CFR 3461). Although the coal included in these lands could not be mined, the lands would be included in the Alternative 3 tract configuration to allow maximum recovery of all the mineable reserves adjacent to the ROW and to comply with the coal leasing regulations, which do not allow leasing of less than 10-acre aliquot parts. TBCC estimates that approximately 111.9 million tons of coal would be produced from the 1,065.49-acre north tract and approximately 441.1 million tons of coal would be produced from the 4,018.01-acre south tract.

BLM will independently evaluate the volume and average quality of the coal resources included in each tract offered for sale as part of the fair market value determination process. The fact that the coal within the ROW cannot all be recovered would be considered by BLM in the fair market value determination for the LBA tracts. BLM's estimate of the

recoverable federal coal reserves and average quality of the coal included in each tract will be published in the sale notice for each tract that is offered for sale. Some general coal quality information in the area of the LBA tracts considered in this EIS is included in Section 3.3 of this document.

2.4 Proposed Action and Alternatives for the West Roundup LBA Tract

2.4.1 West Roundup LBA Tract Proposed Action

Under the Proposed Action for the West Roundup LBA Tract, the tract as applied for by TCC would be offered for lease at a separate, sealed-bid, competitive lease sale, subject to standard and special lease stipulations developed for the PRB (Appendix D). The boundaries of the tract would be consistent with the tract configuration proposed in the West Roundup LBA Tract lease application (Figure 2-3). As applied for, the West Roundup LBA Tract consists of two tracts separated by the North Rochelle Mine railroad spur

Figure 2-3

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and facilities and a county road (Reno Road). The Proposed Action assumes that TCC will be the successful bidder on the West Roundup LBA Tract if it is offered for sale.

The legal description of the proposed West Roundup LBA Tract coal lease lands as applied for by TCC under the Proposed Action is as follows:

T.42N., R.70W., 6th P.M., Campbell County, Wyoming

Section 6: Lots 8 through 19, 20(N½), 21(N½), 22(N½), and 23(N½);
539.28 acres

Section 7: Lots 5(S½), 6(S½), 7(S½), 8(S½), 9 through 14;
303.15 acres

Section 8: Lots 1(SW¼), 2(S½), 3(S½), 4(S½), 5 through 12;
384.09 acres

Section 9: Lots 5(SW¼), 11, 12, and 14;
130.39 acres

T.43N., R.70W., 6th P.M., Campbell County, Wyoming

Section 31: Lots 13 through 20;
314.23 acres

T.42N., R.71W., 6th P.M., Campbell County, Wyoming

Section 1: Lots 5, 6, and 11 through 13;
199.51 acres

Total surface area applied for:
1,870.65 acres

Land descriptions and acreage are based on the BLM Status of Public Domain Land and Mineral Titles

approved Coal Plats as of July 26, 2000, January 9, 2001 and May 9, 2001.

As indicated in Chapter 1, Section 1.4, no lands in the West Roundup LBA Tract as applied for were found to be unsuitable for mining. The tract as applied for includes approximately 1,870.65 mineable acres. TCC estimates that it includes approximately 173.2 million tons of in-place coal reserves and that about 155.9 million tons of that coal would be recoverable assuming a recovery factor of 90 percent.

BLM will independently evaluate the volume and average quality of the coal resources included in the tract as part of the fair market value determination process. BLM's estimate of the mineable reserves and average quality of the coal included in the tract will be published in the sale notice if the tract is offered for sale. Some coal quality information in the area of the West Roundup LBA Tract is included in Section 3.3 of this document.

The approved North Rochelle Mine Permit 550 Term T5 includes monitoring and mitigation measures for the North Rochelle Mine that are required by SMCRA and Wyoming State Law. If the West Roundup LBA Tract is acquired by TCC, these monitoring and mitigation measures would be extended to cover operations on the LBA tract when the coal mining permit is revised to include the tract. This permit would have to be approved before mining operations could take place on the tract. These monitoring and

mitigation measures are considered to be part of the Proposed Action and other action alternatives during the leasing process because they are regulatory requirements.

The West Roundup LBA Tract would be mined as an integral part of the North Rochelle Mine under the Proposed Action. The North Rochelle Mine is already operating under both an approved state mining permit and MLA mining plan. Both the approved state mining permit and MLA mining plan would require amendment to include the LBA tract. Since the West Roundup LBA Tract would be an extension of the existing North Rochelle Mine, the facilities and infrastructure would be the same as those identified in the WDEQ/LQD Mine Permit 550 Term T5 approved August 29, 2000 and the BLM Resource Recovery and Protection Plan approved July 12, 2000 for the North Rochelle Mine.

TCC's currently approved air quality permit allows up to 35 million tons of coal per year to be mined through year 2018. The North Rochelle Mine produced 8.2 million tons of coal in 1999, 17.2 million tons of coal in 2000, and 23.9 million tons of coal in 2001 (Wyoming State Inspector of Mines 1999, 2000, and 2001). Under the No Action Alternative, the North Rochelle Mine would mine its remaining 283 million tons of in-place coal reserves in approximately 7.3 years at an average production rate of 35 mmtpy. Under the Proposed Action, TCC currently estimates that average annual production would be 35 million tons and the life of the

mine would be extended by approximately 4.5 years.

If TCC acquires the West Roundup LBA Tract as applied for, they estimate that a total of 410.9 million tons of coal would be mined after January 1, 2002, with an estimated 155.9 million tons coming from the LBA tract. This estimate of recoverable reserves assumes that about 10 percent of the coal would be lost under normal mining practices, based on historical recovery factors at the North Rochelle Mine. As of December 31, 2001, 49.3 million tons of coal had been mined from within the current permitted area of the mine.

Topsoil removal with heavy equipment would proceed ahead of overburden removal. Whenever possible, direct haulage to a reclamation area would be done, but due to scheduling, some topsoil would be temporarily stockpiled. As required by the reclamation plan, heavy equipment again would be used to haul and distribute the stockpiled topsoil.

The North Rochelle Mine is one of several mines currently operating in the PRB where the coal seams are notably thick and the overburden is relatively thin. Overburden removal has been and would continue to be by truck/shovel operation and the combination of cast-blasting and dragline. Most overburden and all coal is drilled and blasted to facilitate efficient excavation. The design of the North Rochelle Mine seeks to confine disturbance to the active mine blocks. As overburden is removed, most is

directly placed into areas where coal has already been removed. Once the overburden has been replaced it is sampled and verified to be suitable overburden material, then graded to approximate final contour, ripped and finally topsoiled. If necessary, material that is found to be unsuitable would be adequately covered with suitable overburden material prior to grading and topsoiling. Elevations consistent with an approved PMT plan would be established as quickly as possible. Under certain conditions, the PMT may not be immediately achievable. This occurs when there is an excess of material that may require temporary stockpiling, when there is insufficient material available from current overburden removal operations, or when future mining could redisturb an area already mined. Once a seedbed has been formed, vegetation would be reestablished that is consistent with the postmining land use.

Coal would be produced from two seams of the Wyodak bed, a thin, discontinuous rider seam (referred to as the “D” seam or Upper Wyodak) and a uniformly thick main seam (referred to as the “E” seam or Middle Wyodak), at several working faces to enable blending of the coal to meet customer quality requirements, to comply with BLM lease requirements for maximum economic recovery of the coal resource, and to optimize coal removal efficiency with available equipment. The “D” seam (Upper Wyodak) fluctuates greatly in thickness and quality throughout the mine area. Therefore, the recoverable portion of the “D” seam is highly

variable, thus reducing the overall recovery factor for the coal reserves to approximately 90 percent. Mining efficiency and air quality protection are and would continue to be facilitated by extensive use of near-pit crushers and overland conveyors. Coal would be loaded with electric-powered shovels or hydraulic front-end loaders into off-highway haul trucks for transport to crushing facilities. Coal haul roads, crushing facilities and conveyors would be temporary structures built within the mine area. All coal transfer location points and crushing operations are controlled by baghouse-type dust collectors, and dry mist foggers are being reviewed for permitting at several locations throughout the mine. Truck dumping operations use stilling sheds to control fugitive dust. While sufficient capacity exists, future changes in facilities may be constructed to improve operating efficiency and air quality protection. Additional near-pit crusher/conveyor systems would be constructed and moved as the mining operation progresses. A new truck dump/crusher and conveyor system was added in 2001.

Current full-time employment at the North Rochelle Mine is approximately 224. If the LBA tract is acquired, TCC anticipates that the average annual coal production would be approximately 35 million tons with employment increasing to 400 persons.

The West Roundup LBA Tract was applied for by TCC, but it is also located adjacent to the Black Thunder Mine, operated by TBCC. TBCC may

also be in a position to mine the West Roundup LBA Tract as a maintenance lease under the Proposed Action and Alternatives 2 and 3. If ALC acquires the tract, the rate of coal production, mining sequence, equipment, and facilities would be different than if TCC acquired the tract as a maintenance lease, as described above. However, the area of disturbance and the impacts of removing the coal would not be substantially different from the area of disturbance and the impacts of TCC mining the tract.

2.4.2 West Roundup LBA Tract Alternative 1

Under the West Roundup LBA Tract Alternative 1, the No-Action Alternative, the application to lease the coal included in the West Roundup LBA Tract would be rejected, the tract would not be offered for competitive sale, and the coal included in the tract would not be mined. This would not affect permitted mining activities and employment on the existing leases at the North Rochelle Mine and would not preclude an application to lease the coal included in the West Roundup LBA Tract in the future. Portions of the surface of the West Roundup LBA Tract could be disturbed due to overstripping to allow coal to be removed from the adjacent existing leases.

Approximately 3,443.5 acres of federal coal are currently leased at the North Rochelle Mine and a total of about 5,288 acres of land will be affected in mining the current leases. Under the No Action Alternative, TCC

estimates that the average annual production at the North Rochelle Mine after 2001 will be 35 million tons, and average employment will be 224 persons.

In order to compare the economic and environmental consequences of mining these lands versus not mining them, this EIS was prepared under the assumption that an LBA tract would not be mined in the foreseeable future if the No Action Alternative for that tract is selected. However, selection of this alternative would not preclude leasing and mining of a rejected tract in the future, either as a maintenance tract for existing operations or as a new start mine.

2.4.3 West Roundup LBA Tract Alternative 2

Under Alternative 2 for the West Roundup LBA Tract, BLM would reconfigure the tract and hold a competitive coal sale for the lands included in the reconfigured tract and issue a lease to the successful bidder. The modified tract would be subject to standard and special lease stipulations developed for the PRB and this tract if it is offered for sale (Appendix D). Alternative 2 for the West Roundup LBA Tract assumes that TCC would be the successful bidder on the tract if a lease sale is held and that the tract would be mined as a maintenance lease for the North Rochelle Mine. Other assumptions are the same as for the Proposed Action.

As applied for, the West Roundup LBA Tract consists of two non-contiguous tracts of federal coal

2.0 Proposed Action and Alternatives

separated by the North Rochelle Mine railroad spur, the North Rochelle Mine facilities, and a county road known as Reno Road (Figure 1-4). Under Alternative 2 for the West Roundup LBA Tract, the size of the tract as applied for would be increased to include the area between the two tracts as applied for (Figure 2-3). BLM is considering including this coal to prevent some or all of the coal in this area from being bypassed. As discussed in Section 1.4, USFS has determined that lands under a USFS special use permit for ancillary facilities at the North Rochelle Mine are unsuitable for mining under Unsuitability Criterion 2. The area that would be added under this alternative is included in the USFS special use permit. It would not be economically feasible to move the railroad spur, county road, and mine facilities to recover all the coal at this time. However, BLM is considering including this area in the tract because it may be possible to recover portions of the coal reserves in this area when the rest of the tract is mined if it is leased at this time. It may also be economically feasible at some point in the future to move the road and railroad spur and recover the coal if it is leased. The lands that BLM is considering adding to the tract are:

T.42N., R.70W., 6th P.M., Campbell County, Wyoming

Section 4: Lots 17(S $\frac{1}{2}$ S $\frac{1}{2}$) and 18(S $\frac{1}{2}$ S $\frac{1}{2}$);

19.53 acres

Section 5: Lots 17(S $\frac{1}{2}$), 18(S $\frac{1}{2}$), 19(S $\frac{1}{2}$ S $\frac{1}{2}$), and 20(S $\frac{1}{2}$ S $\frac{1}{2}$);

58.33 acres

Section 6: Lots 20(S $\frac{1}{2}$), 21(S $\frac{1}{2}$), 22(S $\frac{1}{2}$), and 23(S $\frac{1}{2}$);

77.35 acres

Section 7: Lots 5(N $\frac{1}{2}$), 6(N $\frac{1}{2}$), 7(N $\frac{1}{2}$), and 8(N $\frac{1}{2}$);

77.18 acres

Section 8: Lots 1(N $\frac{1}{2}$, SE $\frac{1}{4}$), 2(N $\frac{1}{2}$), 3(N $\frac{1}{2}$), and 4(N $\frac{1}{2}$);

87.86 acres

Section 9: Lots 1 through 4, 5(N $\frac{1}{2}$ SE $\frac{1}{4}$), 6 through 8;

305.89 acres

Total: 626.14 acres

TCC estimates that these 626.14 acres contain approximately 51.4 million tons of mineable coal. The Alternative 2 reconfiguration of the West Roundup LBA Tract, therefore, results in a tract comprising approximately 2,496.79 acres containing approximately 224.6 million tons of in-place coal. Using TCC's projected recovery factor of 90 percent, the reconfigured tract would contain about 202.1 million tons of recoverable coal, assuming that the coal underlying the railroad spur and facilities would be economically recoverable at some point in the future.

BLM will independently evaluate the volume and average quality of the coal resources included in the tract as part of the fair market value determination process. The fact that the coal underlying the railroad spur, county road, and mine facilities cannot be economically recovered at this time would be considered by BLM in the fair market value determination for the LBA tract. BLM's estimate of the recoverable reserves and average quality of the coal included in the

tract will be published in the sale notice if the tract is offered for sale. Some coal quality information in the area of the West Roundup LBA Tract is included in Section 3.3 of this document.

On February 9, 2001, TCC filed an application to modify an existing federal coal lease (WYW-127221) at the North Rochelle Mine by adding 155.90 acres to the southern end of that lease. BLM is processing that lease modification application. In the event that the lands included in the lease modification application are not added to federal coal lease WYW-127221 as proposed, BLM will consider offering them, as well as the 616.35 acres described above, in West Roundup LBA Tract Alternative 2. The additional lands that would be added to the tract as applied for under Alternative 2 if lease WYW-127221 is not modified are:

T.42N., R.70W., 6th P.M., Campbell County, Wyoming

Section 4: Lots 17(N $\frac{1}{2}$, N $\frac{1}{2}$ S $\frac{1}{2}$), and 18(N $\frac{1}{2}$, N $\frac{1}{2}$ S $\frac{1}{2}$);

58.58 acres

Section 5: Lots 17(N $\frac{1}{2}$), 18(N $\frac{1}{2}$), 19 (N $\frac{1}{2}$, N $\frac{1}{2}$ S $\frac{1}{2}$), and 20 (N $\frac{1}{2}$, N $\frac{1}{2}$ S $\frac{1}{2}$);

97.32 acres

Total: 155.90 acres

TCC estimates that these 155.90 acres contain approximately 13 million tons of mineable coal. Therefore, if lease WYW-127221 is not modified, the Alternative 2 reconfiguration of the West Roundup LBA Tract results in a tract comprising approximately 2,652.69

acres containing approximately 237.6 million tons of in-place coal. Using TCC's projected recovery factor of 90 percent, the reconfigured tract would contain about 213.8 million tons of recoverable coal, assuming that the coal underlying the railroad spur and facilities would be economically recoverable at some point in the future.

2.4.4 West Roundup LBA Tract Alternative 3

Under Alternative 3 for the West Roundup LBA Tract, BLM would reconfigure the tract and hold a competitive coal sale for the lands included in the reconfigured tract and issue a lease to the successful bidder. The modified tract would be subject to standard and special lease stipulations developed for the PRB and this tract if it is offered for sale (Appendix D). Alternative 3 for the West Roundup LBA Tract assumes that TCC would be the successful bidder on the tract if a lease sale is held and that the tract would be mined as a maintenance lease for the North Rochelle Mine. Other assumptions are the same as for the Proposed Action.

Under Alternative 3 for the West Roundup LBA Tract, the size of the tract as applied for would be increased. The area between the two tracts as applied for would be added as under Alternative 2, along with additional lands to the west and south of the tract as applied for (Figure 2-3). The BLM is considering adding additional lands to the south and west to enhance the value of the remaining unleased federal coal in

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this area. As Under Alternative 2, the area between the two tracts that would be added under this alternative is included in the USFS special use permit, which USFS has determined to be unsuitable for mining. However, it may be possible to recover portions of coal that would be added under the North Rochelle Mine railroad spur, North Rochelle Mine facilities, and Reno Road when the rest of the tract is mined. The additional lands that BLM is considering adding to the tract under this alternative are:

T.42N., R.70W., 6th P.M., Campbell County, Wyoming

Section 4: Lots 17(S $\frac{1}{2}$ S $\frac{1}{2}$), and 18(S $\frac{1}{2}$ S $\frac{1}{2}$);

19.53 acres

Section 5: Lots 17(S $\frac{1}{2}$), 18(S $\frac{1}{2}$), 19(S $\frac{1}{2}$ S $\frac{1}{2}$), and 20(S $\frac{1}{2}$ S $\frac{1}{2}$);

58.33 acres

Section 6: Lots 20(S $\frac{1}{2}$), 21(S $\frac{1}{2}$), 22(S $\frac{1}{2}$), and 23(S $\frac{1}{2}$);

77.35 acres

Section 7: Lots 5(N $\frac{1}{2}$), 6(N $\frac{1}{2}$), 7(N $\frac{1}{2}$), and 8(N $\frac{1}{2}$);

77.18 acres

Section 8: Lots 1(N $\frac{1}{2}$, SE $\frac{1}{4}$), 2(N $\frac{1}{2}$), 3(N $\frac{1}{2}$), 4(N $\frac{1}{2}$), and 16;

127.87 acres

Section 9: Lots 1 through 4, 5(N $\frac{1}{2}$, SE $\frac{1}{4}$), 6 through 8, and 13;

346.09 acres

T.42N., R.71W., 6th P.M., Campbell County, Wyoming

Section 1: Lots 7 through 10, 14, 15, 19, and 20;

317.03 acres

Total: 1,023.38 acres

TCC estimates that these 1,023.38 acres contain approximately 101 million tons of in-place coal. The Alternative 3 reconfiguration of the West Roundup LBA Tract, therefore, results in a tract comprising approximately 2,894.03 acres containing approximately 274.2 million tons of in-place coal. Using TCC's projected recovery factor of 90 percent, the reconfigured tract would contain about 246.8 million tons of recoverable coal, assuming that the coal underlying the railroad spur and facilities would be economically recoverable at some point in the future.

BLM will independently evaluate the volume and average quality of the coal resources included in the tract as part of the fair market value determination process. The fact that the coal underlying the railroad spur, county road, and mine facilities cannot be economically recovered would be considered by BLM in the fair market value determination for the LBA tract. BLM's estimate of the recoverable reserves and average quality of the coal included in the tract will be published in the sale notice if the tract is offered for sale. Some coal quality information in the area of the West Roundup LBA Tract is included in Section 3.3 of this document.

Alternative 3 for the West Roundup LBA Tract also would include the lease modification area discussed in Section 2.4.3 in the tract that would be offered for lease. On February 9, 2001, TCC filed an application to modify an existing federal coal lease (WYW-127221) at the North Rochelle

Mine by adding 155.90 acres to the southern end of that lease. BLM is processing that lease modification application. In the event that the lands included in the lease modification application are not added to federal coal lease WYW-127221 as proposed, BLM will consider offering them, as well as the 1,023.38 acres described above, in West Roundup LBA Tract Alternative 3. The additional lands that would be added to the tract as applied for under Alternative 3 if lease WYW-127221 is not modified:

T.42N., R.70W., 6th P.M., Campbell County, Wyoming

Section 4: Lots 17(N $\frac{1}{2}$, N $\frac{1}{2}$ S $\frac{1}{2}$), and 18 (N $\frac{1}{2}$, N $\frac{1}{2}$ S $\frac{1}{2}$);

58.58 acres

Section 5: Lots 17(N $\frac{1}{2}$), 18(N $\frac{1}{2}$), 19 (N $\frac{1}{2}$, N $\frac{1}{2}$ S $\frac{1}{2}$), and 20 (N $\frac{1}{2}$, N $\frac{1}{2}$ S $\frac{1}{2}$);

97.32 acres

Total: 155.90 acres

TCC estimates that these 155.90 acres contain approximately 13 million tons of mineable coal. Therefore, if lease WYW-127221 is not modified, the Alternative 3 reconfiguration of the West Roundup LBA Tract results in a tract comprising approximately 3,049.93 acres containing approximately 287.2 million tons of in-place coal. Using TCC's projected recovery factor of 90 percent, the reconfigured tract would contain about 258.5 million tons of recoverable coal, assuming that the coal underlying the railroad spur and facilities would be economically recoverable at some point in the future.

2.5 Proposed Action and Alternatives for the West Antelope LBA Tract

2.5.1 West Antelope LBA Tract Proposed Action

Under the Proposed Action for the West Antelope LBA Tract, the tract as applied for by ACC would be offered for lease at a separate, sealed-bid, competitive lease sale, subject to standard and special lease stipulations developed for the PRB (Appendix D). The boundaries of the tract would be consistent with the tract configuration proposed in the West Antelope LBA Tract lease application (Figure 2-4). The Proposed Action assumes that ACC will be the successful bidder on the West Antelope LBA Tract if it is offered for sale.

The legal description of the proposed West Antelope LBA Tract coal lease lands as applied for by ACC under the Proposed Action is as follows:

Figure 2-4

T.40N., R.71W., 6th P.M., Converse County, Wyoming

Section 3: Lots 15 through 18;
159.78 acres

Section 4: Lots 5 through 20;
487.25 acres

Section 5: Lots 5 through 7, 10 through 15, 19, and 20;
320.84 acres

Section 9: Lot 1;
40.14 acres

Section 10: Lots 3 and 4;
80.65 acres

T.41N., R.71W., 6th P.M., Converse and Campbell Counties, Wyoming

Section 28: Lots 1 through 16;
649.21 acres

Section 29: Lots 1 through 16;
659.81 acres

Section 32: Lots 1 through 3, 6 through 11, 14 through 16;
486.16 acres

Section 33: Lots 1 through 16;
658.35 acres

Total surface area applied for:
3,542.19 acres

Land descriptions and acreage are based on the BLM Status of Public Domain Land and Mineral Titles approved Coal Plats as of July 26, 2000, May 9, 2001 and September 6, 2001.

As indicated in Chapter 1, Section 1.4, no lands in the West Antelope LBA Tract were found to be unsuitable for mining. ACC's approved mining plan avoids disturbing Antelope Creek and an adjacent buffer zone, so it is assumed that any coal resources included in

the above described lands that are beneath Antelope Creek would not be recovered. ACC estimates that the tract as applied for includes approximately 2,755.16 mineable acres with approximately 293.9 million tons of in-place coal, 245.6 million tons of mineable coal, and that about 228.4 million tons of that coal would be recoverable assuming a recovery factor of 93 percent.

BLM will independently evaluate the volume and average quality of the coal resources included in the tract as part of the fair market value determination process. The fact that the coal underlying Antelope Creek and the adjacent buffer zone will not be mined would be considered by BLM in the fair market value determination for the LBA tract. BLM's estimate of the recoverable reserves and average quality of the coal included in the tract will be published in the sale notice if the tract is offered for sale. Some coal quality information in the area of the West Antelope LBA Tract is included in Section 3.3 of this document.

The approved Antelope Mine Permit 525 Term T6 includes monitoring and mitigation measures for the Antelope Mine that are required by SMCRA and Wyoming State Law. If the West Antelope LBA Tract is acquired by ACC, these monitoring and mitigation measures would be extended to cover operations on the LBA tract when the coal mining permit is revised to include the tract. This permit would have to be approved before mining operations could take place on the tract. These monitoring and mitigation measures are considered to

2.0 Proposed Action and Alternatives

be part of the Proposed Action and other action alternatives during the leasing process because they are regulatory requirements.

The West Antelope LBA Tract would be mined as an integral part of the Antelope Mine under the Proposed Action. The Antelope Mine is already operating under both an approved state mining permit and MLA mining plan. Both the approved state mining permit and MLA mining plan would require amendment to include the LBA tract. Since the West Antelope LBA Tract would be an extension of the Antelope Mine, the facilities and infrastructure would be the same as those identified in the WDEQ/LQD Mine Permit 525 Term T6 approved November 3, 1998 and the BLM Resource Recovery and Protection Plan approved August 27, 2001 for the Antelope Mine.

ACC's currently approved air quality permit allows up to 32 million tons of coal per year to be mined through year 2017. The Antelope Mine produced 22.7 million tons of coal in 1999, 23 million tons of coal in 2000, and 24.6 million tons of coal in 2001 (Wyoming State Inspector of Mines 1999, 2000, and 2001). Under the No Action Alternative, the Antelope Mine would mine its remaining 347.3 million tons of recoverable coal reserves in approximately 25 years at an average annual production rate of 13.9 million tons and at a maximum production rate of 32 mmtpy. Under the Proposed Action, ACC currently estimates that average annual coal production would be 23 million tons, the maximum annual production would be 32 million tons, and the life

of the mine is expected to remain at 25 years.

If ACC acquires the West Antelope LBA Tract as applied for, they estimate that a total of 575.7 million tons of coal would be mined after January 1, 2002, with an estimated 228.4 million tons coming from the LBA tract. This estimate of recoverable reserves assumes that about seven percent of the coal would be lost under normal mining practices, based on historical recovery factors at the Antelope Mine. As of December 31, 2001, 169 million tons of coal had been mined from within the current permitted area of the mine.

Topsoil removal with heavy equipment would proceed ahead of overburden removal. Whenever possible, direct haulage to a reclamation area would be done, but due to scheduling, some topsoil would be temporarily stockpiled. As required by the reclamation plan, heavy equipment again would be used to haul and distribute the stockpiled topsoil.

Overburden has been and would continue to be removed by dragline and truck and shovel operations. Most overburden and all coal is drilled and blasted to facilitate efficient excavation. The design of the Antelope Mine seeks to confine disturbance to the active mine blocks. As overburden is removed, most would be directly placed into areas where coal has already been removed. Once the overburden has been replaced it is sampled and verified to be suitable overburden material, then

graded to approximate final contour, ripped and finally topsoiled. If necessary, material that is found to be unsuitable would be adequately covered with suitable overburden material prior to grading and topsoiling. Elevations consistent with an approved PMT plan would be established as quickly as possible. Under certain conditions, the PMT may not be immediately achievable. This occurs when there is an excess of material that may require temporary stockpiling, when there is insufficient material available from current overburden removal operations, or when future mining could redisturb an area already mined. Once a seedbed has been formed, vegetation would be reestablished that is consistent with the postmining land use.

Coal would be produced from as many as four seams of the primary Anderson and Canyon beds at several working faces to enable blending of the coal to meet customer quality requirements, to comply with BLM lease requirements for maximum economic recovery of the coal resource, and to optimize coal removal efficiency with available equipment. Mining efficiency and air quality protection are and would continue to be facilitated by extensive use of near-pit crushers and overland conveyors from the crushers to the storage and loadout facilities. Coal would be loaded with electric-powered shovels or hydraulic excavators into off-highway haul trucks for transport to crushing facilities. Coal haul roads, crushing facilities and conveyors would be temporary structures built within the mine area.

All coal transfer location points and crushing operations are controlled by baghouse-type dust collectors or PECs. The truck dumping operations use stilling sheds to control fugitive dust and the overland conveyors are covered by dust hoods. While sufficient capacity exists, future changes in facilities may be constructed to improve operating efficiency and air quality protection. The conveyor systems would be extended to reach each of the various mine areas if ACC acquires the West Antelope LBA Tract.

Current full-time employment at the Antelope Mine is 215. If the LBA tract is acquired, ACC anticipates that the average annual coal production would be approximately 23 million tons, and no additional employment would be expected.

2.5.2 West Antelope LBA Tract Alternative 1

Under the West Antelope LBA Tract Alternative 1, the No-Action Alternative, the application to lease the coal included in the West Antelope LBA Tract would be rejected, the tract would not be offered for competitive sale, and the coal included in the tract would not be mined. This would not affect permitted mining activities and employment on the existing leases at the Antelope Mine and would not preclude an application to lease the coal included in the West Antelope LBA Tract in the future. Portions of the surface of the West Antelope LBA Tract could be disturbed due to overstripping to allow coal to be

2.0 Proposed Action and Alternatives

removed from the adjacent existing leases.

Approximately 8,019.2 acres of federal coal are currently leased at the Antelope Mine and a total of about 8,821 acres of land will be affected in mining the current leases. Under the No Action Alternative, ACC estimates that the average annual production at the Antelope Mine after 2001 will be 13.9 million tons, and average employment will be 215 persons.

In order to compare the economic and environmental consequences of mining these lands versus not mining them, this EIS was prepared under the assumption that an LBA tract would not be mined in the foreseeable future if the No Action Alternative for that tract is selected. However, selection of this alternative would not preclude leasing and mining of a rejected tract in the future, either as a maintenance tract for existing operations or as a new start mine.

2.5.3 West Antelope LBA Tract Alternative 2

Under Alternative 2 for the West Antelope LBA Tract, BLM would reconfigure the tract and hold a competitive coal sale for the lands included in the reconfigured tract and issue a lease to the successful bidder. The modified tract would be subject to standard and special lease stipulations developed for the PRB and that tract if it is offered for sale (Appendix D). Alternative 2 for the West Antelope LBA Tract assumes that ACC would be the successful bidder on the tract if a lease sale is

held and that the tract would be mined as a maintenance lease for the Antelope Mine. Other assumptions are the same as for the Proposed Action.

BLM is considering an alternate tract configuration for the West Antelope LBA Tract in order to avoid creating a potential bypass situation (Figure 2-4). Adding the area between the West Antelope LBA Tract as applied for and the existing Horse Creek lease (WYW 141435, issued effective December 1, 2000) would enlarge the original configuration of the West Antelope LBA Tract. The lands that BLM is considering adding to the tract are:

T.41N., R.71W., 6th P.M., Campbell County, Wyoming

Section 22: Lots 2 and 16;	85.20 acres
Section 27: Lots 6 through 11;	250.51 acres
Total:	<u>335.71 acres</u>

The increase to the West Antelope LBA Tract would be 335.71 acres containing approximately 27.9 million tons of in-place coal. The Alternative 2 reconfiguration, therefore, results in a tract comprising approximately 3,877.90 acres containing approximately 321.8 million tons of in-place coal. After eliminating coal that would not be mined beneath Antelope Creek and the adjacent buffer zone, ACC estimates that the reconfigured tract includes approximately 3,091 mineable acres with approximately 273.4 million tons of mineable coal. Using ACC's projected recovery factor of 93

percent, the reconfigured tract would contain about 254.3 million tons of recoverable coal.

BLM will independently evaluate the volume and average quality of the coal resources included in the tract as part of the fair market value determination process. The fact that the coal underlying Antelope Creek and the adjacent buffer zone will not be mined would be considered by BLM in the fair market value determination for the LBA tract. BLM's estimate of the recoverable reserves and average quality of the coal included in the tract will be published in the sale notice if the tract is offered for sale. Some coal quality information in the area of the West Antelope LBA Tract is included in Section 3.3 of this document.

2.5.4 West Antelope LBA Tract Alternative 3

Under Alternative 3 for the West Antelope LBA Tract, BLM is considering a different tract configuration. As under Alternative 2, if this tract configuration is selected BLM would hold a competitive coal sale and issue a lease to the successful bidder. The modified tract would be subject to standard and special lease stipulations developed for the PRB and that tract if it is offered for sale (Appendix D). Alternative 3 for the West Antelope LBA Tract assumes that ACC would be the successful bidder on the tract if a lease sale is held and that the tract would be mined as a maintenance lease for the Antelope Mine. Other assumptions

would be the same as for the Proposed Action.

Under this alternative for the West Antelope LBA Tract, BLM is considering removing some of the lands applied for in the northern portion of the West Antelope LBA Tract from consideration for leasing at this time and offering a smaller tract for competitive sale (Figure 2-4). The coal that BLM is considering removing from the tract as applied for could be combined with the unleased federal coal in this area to create a tract which could potentially have more competitive interest and a higher fair market value if it is leased in the future. The lands that BLM is considering removing from the tract are:

T.41N., R.71W., 6th P.M., Campbell County, Wyoming

Section 28: Lots 1 through 8;	332.50 acres
Section 29: Lots 1 through 8, 12, and 13;	410.56 acres
Total:	<u>733.06 acres</u>

ACC estimates that these 733.06 acres contain approximately 91.6 million tons of in-place coal. The Alternative 3 reconfiguration of the West Antelope LBA Tract, therefore, results in a tract comprising approximately 2,809.13 acres containing approximately 202.3 million tons of in-place coal, according to information provided by the applicant. After eliminating coal that would not be mined beneath Antelope Creek and the adjacent

buffer zone, ACC estimates that the reconfigured tract includes approximately 2,022.1 mineable acres with approximately 183.2 million tons of mineable coal. Using ACC's projected recovery factor of 93 percent, the reconfigured tract would contain about 170.4 million tons of recoverable coal.

BLM will independently evaluate the volume and average quality of the coal resources included in each tract offered for sale as part of the fair market value determination process. The fact that the coal underlying Antelope Creek and the adjacent buffer zone will not be mined would be considered by BLM in the fair market value determination for the LBA tract. BLM's estimate of the recoverable federal coal reserves and average quality of the coal included in each tract will be published in the sale notice for each tract that is offered for sale. Some general coal quality information in the area of the LBA tracts considered in this EIS is included in Section 3.3 of this document.

2.6 Alternatives Considered but Not Analyzed in Detail

2.6.1 Alternative 4

Under this alternative, as under the Proposed Action and Alternatives 2 and 3, the BLM would hold a separate, competitive, sealed-bid sale

for the lands included in one or more of the LBA tracts. Alternative 4 assumes, however, that the successful qualified bidder would be someone other than the applicant and that this bidder would plan to open a new mine to develop the coal resources in one or more of the LBA tracts (NARO North, NARO South, Little Thunder, West Roundup, and West Antelope).

A company or companies acquiring this coal for one or more new stand-alone mines would require considerable initial capital expenses, including the construction of new surface facilities (i.e., offices, shops, warehouses, coal processing facilities, coal loadout facilities, and rail spur), extensive baseline data collection, and development of new mining and reclamation plans. In addition, a company or companies acquiring this coal for one or more new start mines would have to compete for customers with established mines in a competitive market.

BLM currently estimates that a tract would potentially need to include as much as 500 to 600 million tons of coal in order to attract a buyer interested in opening a new mine in the Wyoming PRB. This is based on the assumptions that an operator would construct facilities capable of producing 30 mmtpy to take advantage of the economies of scale offered by the coal deposits in the PRB and that 20 to 30 years of coal reserves would be needed to justify the expense of building the facilities described above. Given these assumptions, it is questionable whether most of the tracts under the

Proposed Action or Alternatives 2 or 3 potentially include sufficient coal resources to support a new mine.

The potential difficulty in obtaining an air quality permit is another issue which could discourage new mine starts in the PRB. A new mine would create a new source of air quality impacts. As discussed in Chapter 3, the WDEQ/AQD administers a permitting program to assist the agency in managing the State's air resources. Under this program, anyone planning to construct, modify, or use a facility capable of emitting designated pollutants into the atmosphere must obtain an air quality permit to construct. Coal mines fall into this category.

In order to obtain a construction permit, an operator may be required to demonstrate that the proposed activities will not increase air pollutant levels above annual standards established by the Wyoming Air Quality Standards and Regulations (WDEQ/AQD 2000). Due to the current levels of mineral development (coal and oil and gas) in the Wyoming PRB, the Wyoming air quality standards have been exceeded several times recently in the southern PRB. Therefore, it may be difficult for an operator planning on opening a new mine to demonstrate that new operations would not result in air pollution levels that are above annual Wyoming standards.

In view of the issues discussed above, development of new mines on one or more of the LBA tracts included in this EIS is considered unlikely and

this alternative is not analyzed in detail.

The environmental impacts of developing one or more new mines to recover the coal resources in one or more of these LBA tracts would be greater than under the Proposed Action, the No Action Alternative, or Alternatives 2 or 3 because of the need for new facilities, new rail lines, new employment, and the creation of additional sources of particulates (dust). In the event that one or more lease sales are held and the applicants are not the successful bidders, the successful bidder or bidders would be required to submit detailed mining and reclamation plans for approval before any of the tracts could be mined, and this NEPA analysis would be reviewed and supplemented as necessary prior to approval of those mining and reclamation plans.

2.6.2 Alternative 5

Under Alternative 5, the BLM would delay the sale of one or more of the LBA tracts as applied for. Delaying the sale of one or more of the tracts would allow CBM resources to be more completely recovered prior to mining. Also, the prices received for coal from the PRB have generally been decreasing in recent years. If coal lease sales are delayed until prices increase, the bonus and royalty payments to the government might be higher. Under this alternative, it is assumed that one or more of the tracts could be developed later as maintenance tracts or new start mines, depending on how long the sales were delayed.

CBM wells presently exist or are proposed on oil and gas leases inside or adjacent to the NARO North, NARO South, Little Thunder, West Roundup, and West Antelope LBA Tracts as proposed. If one or more of the LBA tracts included in this EIS are leased, mining cannot occur until the lessees have approved mining and reclamation permits and MLA mining plans, which generally takes several years. This would allow time for a large portion of the CBM resources to be recovered from the tracts.

There are two major sources of revenue to state and federal governments from the leasing and mining of federal coal: 1) the competitive bonus bid paid at the time the coal is leased, and 2) federal and state royalties and taxes collected when the coal is sold. This alternative could potentially increase the fair market value of the coal resources in one or more of the LBA tracts, which could increase the bonus bid when the coal is leased. The price paid for coal from northeastern Wyoming decreased by more than \$1.00 per ton from 1992 to 2000, while production of low sulfur PRB coal increased annually. Prices for PRB coal increased slightly in 2000 and 2001, and are projected to remain stable or increase slightly from 2002 through 2007 (WSGS 2002a). There is no assurance that delaying one or more of the sales would result in a higher coal price or a higher bonus bid.

The fair market value of these tracts and the resulting bonus payment to the government could increase if one

or more lease sales are postponed and if PRB coal prices increase, but the postponement would not necessarily lead to higher royalty or tax income to the state or federal governments. Royalty and tax payments increase automatically when coal prices increase because they are collected at the time the coal is sold, but they cannot be collected until the coal is leased and permitted and that takes several years. If leasing is delayed, then by the time the coal is mined, the higher coal prices may or may not persist. If the higher coal prices do persist, they may enable the coal lessee to negotiate longer term contracts at higher prices, which would result in longer term, higher royalty and tax revenues. On the other hand, if the existing mining operations run out of coal reserves before prices rise, they may have to shut down their operations before additional coal can be leased and permitted for mining. In that case, the fair market value of the coal may actually drop because the added expense of reopening a mine or starting a new mine would have to be factored into the fair market value.

Other considerations include the value of leaving the mineable coal for future development versus the value of making low-sulfur coal available now, in anticipation of cleaner fuel sources being developed in the future. Continued leasing of PRB coal enables coal-fired power plants to meet Clean Air Act requirements without constructing new plants, revamping existing plants, or switching to existing alternative fuels, which would probably significantly

increase power costs for individuals and businesses. If cleaner fuel sources are developed in the future, they could be phased in with less economic impact to the public.

A range of the potential future economic benefits of delaying leasing until coal prices rise could be quantified in an economic analysis, but the benefits would have to be discounted to the present, which would make them similar to the Proposed Action and Alternatives 2 and 3.

The environmental impacts of mining the coal at a later time as part of one or more existing mines would be expected to be similar and about equal to the Proposed Action, Alternative 2 or Alternative 3. If new mine starts are required to mine the coal in these tracts, the environmental impacts would be expected to be greater than if the tracts were mined as extensions of existing mines.

2.7 Comparison of Alternatives

The locations of the Proposed Action and Alternatives 2 and 3 for the NARO North and NARO South, Little Thunder, West Roundup, and West Antelope LBA Tracts are shown on Figures 2-1 through 2-4, respectively. A summary comparison of projected coal production, surface disturbance, mine life, and federal and state revenues for the Proposed Action and Alternatives 1, 2, and 3 for NARO North and NARO South, Little

Thunder, West Roundup, and West Antelope LBA Tracts are the presented in Tables 2-1 through 2-4, respectively.

Table 2-5 presents a comparative summary of the direct and indirect environmental impacts of implementing each alternative as compared to the No Action Alternative for all five LBA tracts. The No Action Alternative assumes completion of currently permitted mining at the North Antelope/Rochelle Complex for comparison to the NARO North and NARO South LBA Tracts, the currently permitted mining at the Black Thunder Mine for comparison to the Little Thunder LBA Tract, the currently permitted mining at the North Rochelle Mine for comparison to the West Roundup LBA Tract, and the currently permitted mining at the Antelope Mine for comparison to the West Antelope LBA Tract. Table 2-6 presents a comparative summary of cumulative environmental impacts of implementing each alternative for all five LBA tracts. The environmental consequences of the Proposed Action

Table 2-1. Summary Comparison of Coal Production, Surface Disturbance, and Mine Life for NARO North and NARO South LBA Tracts and North Antelope/Rochelle Complex.

Item	No Action Alternative (Existing North Antelope/Rochelle Complex)	Added by Proposed Action	Added by Alternative 2	Added by Alternative 3
In-Place Coal (as of 1/1/02)	952 mmt	564 mmt	710 mmt	464.4 mmt
Recoverable Coal (as of 1/1/02) ¹	904.4 mmt	506.9 mmt	613.9 mmt	434.9 mmt
Coal Mined Through 2001	643 mmt	—	—	—
Lease Area ²	14,895.5 ac	4,503.02 ac	5,571.19 ac	3,776.27 ac
Total Area To Be Disturbed ²	20,410 ac	5,590 ac	6,275 ac	4,863 ac
Permit Area ²	27,187 ac	21,035 ac	21,835 ac	21,035 ac
Average Annual Post-2001 Coal Production	75 mmt	15 mmt	15 mmt	15 mmt
Maximum Annual Post-2001 Coal Production (years 2004-2006)	105 mmt	0 mmt	0 mmt	0 mmt
Remaining Life Of Mine (post-2001)	12 yrs	4 yrs	5.5 yrs	3 yrs
Average No. of Employees (at maximum production rate)	1,175	10	10	10
Total Projected State Revenues (post-2001) ³	\$ 994.8 million	\$ 557.6 million	\$ 675.3 million	\$ 478.4 million
Total Projected Federal Revenues (post-2001) ⁴	\$ 745.5 million	\$ 421.8 million	\$ 514.4 million	\$ 359.4 million

¹ Assumes 95 percent recovery of leased coal (with the exception of the NARO South Tract as proposed, which is estimated to be 83 percent recovery of leased coal; the NARO South Alternative 2 Tract, which is estimated to be 79 percent recovery of leased coal; and NARO South Alternative 3 Tract, which is estimated to be 91 percent recovery of leased coal).

² For the Proposed Action and Alternatives 2 and 3, the disturbed acreage exceeds the leased acreage because of the need for highwall reduction, topsoil removal and other activities outside the lease boundaries. When added to the existing mine, the permit area is larger than leased or disturbed areas to assure that all disturbed lands are within the permit boundary and to allow easily defined legal land description. Permit areas under Proposed Action and Alternatives 2 and 3 are the anticipated permit amendment baseline study areas.

³ Projected revenue to the State of Wyoming is \$1.10 per ton of coal sold and includes income from severance tax, property and production taxes, sales and use taxes, and Wyoming's share of federal royalty payments and bonus bids (University of Wyoming 1994).

⁴ Federal revenues are based on \$5.00 per ton 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 \$5.00 per ton price × amount of recoverable coal × black lung tax of 4.0 percent, plus bonus payment on LBA leased coal of \$0.26 per ton (based on average of last 11 LBAs) × amount of in-place coal minus State's 50 percent share.

Table 2-2. Summary Comparison of Coal Production, Surface Disturbance, and Mine Life for Little Thunder LBA Tract and Black Thunder Mine.

Item	No Action Alternative (Existing Black Thunder Mine)	Added by Proposed Action	Added by Alternative 2	Added by Alternative 3 (North Tract)	Added by Alternative 3 (South Tract)
In-Place Coal (as of 1/1/02)	968.7 mmt	479.3 mmt	695.3 mmt	155.7 mmt	539.6 mmt
Recoverable Coal (as of 1/1/02) ¹	920.3 mmt	440 mmt	553 mmt	111.9 mmt	441.1 mmt
Coal Mined Through 2001	699.9 mmt	—	—	—	—
Lease Area ²	12,772.9 ac	3,449.32 ac	5,083.5 ac	1,065.49 ac	4,018.01 ac
Total Area To Be Disturbed ²	18,476 ac	5,424 ac	6,577 ac	1,382 ac	5,195 ac
Permit Area ²	21,238 ac	7,678 ac	7,678 ac	1,612.4 ac	6,065.6 ac
Average Annual Post-2001 Coal Production	38.3 mmt	4.2 mmt	4.2 mmt	4.2 mmt	4.2 mmt
Remaining Life Of Mine (post-2001)	24 yrs	8 yrs	10.7 yrs	0.3 yrs	8 yrs
Average No. of Employees	600	0	0	0	0
Total Projected State Revenues (post-2001) ³	\$ 1,012.3 million	\$ 484.0 million	\$ 608.3 million	\$ 123.1 million	\$ 485.2 million
Total Projected Federal Revenues (post-2001) ⁴	\$ 758.6 million	\$ 364.8 million	\$ 470.6 million	\$ 97.2 million	\$ 373.6 million

¹ Assumes 95 percent recovery of leased coal for the No Action Alternative, 92 percent recovery of leased coal for Proposed Action; 79.5 percent recovery of leased coal for Alternative 2; 71.9 percent recovery of leased coal for Alternative 3, North Tract; and 81.8 percent recovery of leased coal for Alternative 3, South Tract.

² For the Proposed Action and Alternatives 2 and 3, the disturbed acreage exceeds the leased acreage because of the need for highwall reduction, topsoil removal and other activities outside the lease boundaries. When added to the existing mine, the permit area is larger than leased or disturbed areas to assure that all disturbed lands are within the permit boundary and to allow easily defined legal land description. Permit areas under Proposed Action and Alternatives 2 and 3 are the anticipated permit amendment baseline study areas.

³ Projected revenue to the State of Wyoming is \$1.10 per ton of coal sold and includes income from severance tax, property and production taxes, sales and use taxes, and Wyoming's share of federal royalty payments and bonus bids (University of Wyoming 1994).

⁴ Federal revenues are based on \$5.00 per ton 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 \$5.00 per ton price × amount of recoverable coal × black lung tax of 4.0 percent, plus bonus payment on LBA leased coal of \$0.26 per ton (based on average of last 11 LBAs) × amount of in-place coal minus State's 50 percent share.

Table 2-3. Summary Comparison of Coal Production, Surface Disturbance, and Mine Life for West Roundup LBA Tract and North Rochelle Mine.

Item	No Action Alternative (Existing North Rochelle Mine)	Added by Proposed Action	Added by Alternative 2	Added by Alternative 2 Plus Lease WYW-127221 Modification	Added by Alternative 3	Added by Alternative 3 Plus Lease WYW-127221 Modification
	In-Place Coal (as of 1/1/02)	283 mmt	173.2 mmt	224.6 mmt	237.6 mmt	274.2 mmt
Recoverable Coal (as of 1/1/02) ¹	255 mmt	155.9 mmt	202.1 mmt	213.8 mmt	246.8 mmt	258.5 mmt
Coal Mined Through 2001	49.3 mmt	—	—	—	—	—
Lease Area ²	3,443.50 ac	1,870.65 ac	2,496.79 ac	2,652.69 ac	2,894.03 ac	3,049.93 ac
Total Area To Be Disturbed ²	5,288 ac	3,161 ac	3,161 ac	3,161 ac	3,591 ac	3,591 ac
Permit Area ²	7,042 ac	3,228.5 ac	3,228.5 ac	3,228.5 ac	3,228.5 ac	3,228.5 ac
Average Annual Post-2001 Coal Production	35 mmt	0 mmt	0 mmt	0 mmt	0 mmt	0 mmt
Remaining Life Of Mine (post-2001)	7.3 yrs	4.5 yrs	5.8 yrs	6.1 yrs	6.7 yrs	7.1 yrs
Average No. of Employees	224	176	176	176	176	176
Total Projected State Revenues (post-2001) ³	\$ 280.5 million	\$ 171.5 million	\$ 222.3 million	\$ 235.2 million	\$ 271.5 million	\$ 284.4 million
Total Projected Federal Revenues (post-2001) ⁴	\$ 212.1 million	\$ 129.7 million	\$ 168.1 million	\$ 177.9 million	\$ 205.3 million	\$ 215.1 million

¹ Assumes 90 percent recovery of leased coal.

² For the Proposed Action and Alternatives 2 and 3, the disturbed acreage exceeds the leased acreage because of the need for highwall reduction, topsoil removal and other activities outside the lease boundaries. When added to the existing mine, the permit area is larger than leased or disturbed areas to assure that all disturbed lands are within the permit boundary and to allow easily defined legal land description. Permit areas under Proposed Action and Alternatives 2 and 3 are the anticipated permit amendment baseline study areas.

³ Projected revenue to the State of Wyoming is \$1.10 per ton of coal sold and includes income from severance tax, property and production taxes, sales and use taxes, and Wyoming's share of federal royalty payments and bonus bids (University of Wyoming 1994).

⁴ Federal revenues are based on \$5.00 per ton 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 \$5.00 per ton price × amount of recoverable coal × black lung tax of 4.0 percent, plus bonus payment on LBA leased coal of \$0.26 per ton (based on average of last 11 LBAs) × amount of in-place coal minus State's 50 percent share.

Table 2-4. Summary Comparison of Coal Production, Surface Disturbance, and Mine Life for West Antelope LBA Tract and Antelope Mine.

Item	No Action Alternative (Existing Antelope Mine)	Added by Proposed Action	Added by Alternative 2	Added by Alternative 3
In-Place Coal (as of 1/1/02)	553.5 mmt	293.9 mmt	321.8 mmt	202.3 mmt
Mineable Coal (as of 1/1/02)	373.4 mmt	245.6 mmt	273.4 mmt	183.2 mmt
Recoverable Coal (as of 1/1/02) ¹	347.3 mmt	228.4 mmt	254.3 mmt	170.4 mmt
Coal Mined Through 2001	168.7 mmt	—	—	—
Lease Area ²	8,019.2 ac	3,542.19 ac	3,877.90 ac	2,809.13 ac
Total Area To Be Disturbed ²	8,821.1 ac	3,200 ac	3,500 ac	2,467 ac
Permit Area ²	10,848.6 ac	4,328.4 ac	4,328.4 ac	3,448.4 ac
Average Annual Post-2001 Coal Production	13.9 mmt	9.1 mmt	10.2 mmt	6.8 mmt
Remaining Life Of Mine (Post-2001)	25 yrs	0 yr	0 yr	0 yr
Average No. of Employees	215	0	0	0
Total Projected State Revenues (post-2001) ³	\$ 382.0 million	\$ 251.2 million	\$ 279.7 million	\$ 187.4 million
Total Projected Federal Revenues (post-2001) ⁴	\$ 238.8 million	\$ 195.2 million	\$ 216.7 million	\$ 143.4 million

¹ Assumes 93 percent recovery of leased coal remaining after eliminating coal that won't be mined beneath Antelope Creek and adjacent buffer zone.

² For the Proposed Action and Alternatives 2 and 3, the disturbed acreage is less than leased acreage because some of the coal is beneath Antelope Creek and the adjacent buffer zone and would not be mined. When added to the exiting mine, the permit area is larger than leased or disturbed areas to assure that all disturbed lands are within the permit boundary and to allow easily defined legal land description. Permit areas under Proposed Action and Alternatives 2 and 3 are anticipated permit amendment baseline study areas.

³ Projected revenue to the State of Wyoming is \$1.10 per ton of coal sold and includes income from severance tax, property and production taxes, sales and use taxes, and Wyoming's share of federal royalty payments and bonus bids (University of Wyoming 1994).

⁴ Federal revenues are based on \$5.00 per ton 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 \$5.00 per ton price × amount of recoverable coal × black lung tax of 4.0 percent, plus bonus payment on LBA leased coal of \$0.26 per ton (based on average of last 11 LBAs) × amount of in-place coal minus State's 50 percent share.

Table 2-5. Summary Comparison of Magnitude¹ and Duration of Direct and Indirect Impacts for the Proposed Action, Alternative 2, Alternative 3, and the No Action Alternative for the NARO North, NARO South, Little Thunder, West Roundup, and West Antelope LBA Tracts².

DESCRIPTION OF POTENTIAL IMPACT BY RESOURCE	MAGNITUDE AND DURATION OF IMPACT	
RESOURCE NAME	NO ACTION ALTERNATIVE	PROPOSED ACTION, ALTERNATIVE 2, & ALTERNATIVE 3
TOPOGRAPHY & PHYSIOGRAPHY		
(Applicable to all five tracts)		
PERMANENT TOPOGRAPHIC MODERATION could result in:		
Microhabitat reduction	Moderate, long term on existing mine areas	Same as No Action on expanded mine areas
Habitat diversity reduction	Moderate, long term on existing mine areas	Same as No Action on expanded mine areas
Reduction in water runoff and peak flows	Moderate, long term on existing mine areas	Same as No Action on expanded mine areas
Increased precipitation infiltration	Moderate, long term on existing mine areas	Same as No Action on expanded mine areas
Wildlife carrying capacity reduction	Moderate, possibly short term on existing mine areas	Same as No Action on expanded mine areas
Reduction in erosion	Moderate, long term on existing mine areas	Same as No Action on expanded mine areas
Enhanced vegetative productivity	Moderate, beneficial, long term on existing mine areas	Same as No Action on expanded mine areas
Potential acceleration of groundwater recharge	Moderate, long term on existing mine areas	Same as No Action on expanded mine areas
GEOLOGY AND MINERALS		
(Applicable to all five tracts)		
SUBSURFACE changes would result in:		
Removal of coal	Moderate, permanent on existing mine areas	Same as No Action on expanded mine areas
Removal and replacement of topsoil and overburden	Moderate, long term on existing mine areas	Same as No Action on expanded mine areas
Physical characteristic alterations in geology	Moderate, permanent on existing mine areas	Same as No Action on expanded mine areas
Loss of CBM ³	Moderate, permanent on existing mine areas	Same as No Action on expanded mine areas
SOILS		
(Applicable to all five tracts)		
CHANGES IN PHYSICAL PROPERTIES would include:		
Increased near-surface bulk density	Moderate, long term on existing mine areas	Same as No Action on expanded mine areas
More uniformity in soil type, thickness, and texture	Moderate, beneficial, long term on existing mine areas	Same as No Action on expanded mine areas
Increased uniformity in mixed soils (e.g., texture)	Moderate, beneficial, long term on existing mine areas	Same as No Action on expanded mine areas
Decreased soil loss due to topographic modification	Moderate, beneficial, long term on existing mine areas	Same as No Action on expanded mine areas
CHANGES IN CHEMICAL PROPERTIES would include:		
Uniform soil nutrient distribution	Moderate, beneficial, long term on existing mine areas	Same as No Action on expanded mine areas
CHANGES IN BIOLOGICAL PROPERTIES would include:		
Organic matter reduction	Moderate, long term on existing mine areas	Same as No Action on expanded mine areas
Microorganism population reduction	Moderate, long term on existing mine areas	Same as No Action on expanded mine areas
Existing plant habitat reduction in soils stockpiled before placement	Moderate, long term on existing mine areas	Same as No Action on expanded mine areas

¹ Refer to Section 4.0 and 4.1 for a discussion on magnitude of impacts.

² All impacts are assumed to be adverse unless noted otherwise.

³ Most of the CBM reserves could be recovered prior to initiation of mining activity, those reserves not recovered prior to mining would be lost.

Table 2-5. Summary Comparison of Magnitude¹ and Duration of Direct and Indirect Impacts for the Proposed Action, Alternative 2, Alternative 3, and the No Action Alternative for the NARO North, NARO South, Little Thunder, West Roundup, and West Antelope LBA Tracts² (Continued).

DESCRIPTION OF POTENTIAL IMPACT BY RESOURCE	MAGNITUDE AND DURATION OF IMPACT	
RESOURCE NAME	NO ACTION ALTERNATIVE	PROPOSED ACTION, ALTERNATIVE 2, & ALTERNATIVE 3
AIR QUALITY		
(Applicable to all five tracts)		
IMPACTS ASSOCIATED WITH MINING OPERATIONS would include:		
Elevated concentrations of particulate matter	Moderate, short term on existing mine areas	Same as No Action on expanded mine areas
Elevated concentrations of gaseous emissions	Moderate, short term on existing mine areas	Same as No Action on expanded mine areas
WATER RESOURCES		
(Applicable to all five tracts)		
<u>SURFACE WATER</u>		
CHANGES IN RUNOFF CHARACTERISTICS AND SEDIMENT DISCHARGE would include:		
Disruption of surface drainage systems	Moderate, short term on existing mine areas	Same as No Action on expanded mine areas
Increased runoff and erosion rates	Moderate, short term on existing mine areas	Same as No Action on expanded mine areas
Increased infiltration	Moderate, long term on existing mine areas	Same as No Action on expanded mine areas
Reduction in peak flows	Moderate, long term on existing mine areas	Same as No Action on expanded mine areas
<u>GROUNDWATER</u>		
IMPACTS ASSOCIATED WITH MINING OPERATIONS would include:		
Removal of coal and overburden aquifers	Negligible, short term on existing mine areas	Same as No Action on expanded mine areas
Replacement of existing coal and overburden with spoil aquifers	Negligible, long term on existing mine areas	Same as No Action on expanded mine areas
Depressed water levels in aquifers adjacent to mines	Moderate, short term on existing mine areas	Same as No Action on expanded mine areas
Change in hydraulic properties	Negligible, long term on existing mine areas	Same as No Action on expanded mine areas
Change in groundwater quality in backfilled areas	Moderate, long term on existing mine areas	Same as No Action on expanded mine areas
ALLUVIAL VALLEY FLOORS		
(Applicable to all five tracts)		
While final determinations have not been made by WDEQ/LQD, it is believed that there are no AVFs significant to agriculture on the proposed lease tracts	No impact on existing mine areas	Same as No Action on expanded mine areas
WETLANDS		
(Applicable to all five tracts)		
Removal of all existing wetlands	Wetlands on existing mine areas would be mined and reclaimed	Same as No Action on expanded mine areas
VEGETATION		
(Applicable to all five tracts)		
PROGRESSIVE REDUCTION IN NATIVE VEGETATION would result in:		
Increased erosion	Moderate, short term on existing mine areas	Same as No Action on expanded mine areas
Wildlife and livestock habitat loss	Moderate, short term on existing mine areas	Same as No Action on expanded mine areas
Wildlife habitat carrying capacity loss	Moderate, long term on existing mine areas	Same as No Action on expanded mine areas

¹ Refer to Section 4.0 and 4.1 for a discussion on magnitude of impacts.

² All impacts are assumed to be adverse unless noted otherwise.

Table 2-5. Summary Comparison of Magnitude¹ and Duration of Direct and Indirect Impacts for the Proposed Action, Alternative 2, Alternative 3, and the No Action Alternative for the NARO North, NARO South, Little Thunder, West Roundup, and West Antelope LBA Tracts² (Continued).

DESCRIPTION OF POTENTIAL IMPACT BY RESOURCE	MAGNITUDE AND DURATION OF IMPACT	
RESOURCE NAME	NO ACTION ALTERNATIVE	PROPOSED ACTION, ALTERNATIVE 2, & ALTERNATIVE 3
VEGETATION (Continued)		
(Applicable to all five tracts)		
AFTER RECLAMATION the following could result:		
Changes in vegetation patterns	Negligible, long term on existing mine areas	Same as No Action on expanded mine areas
Reduction in vegetation diversity	Negligible, long term on existing mine areas	Same as No Action on expanded mine areas
Reduction in shrub density	Negligible, long term on existing mine areas	Same as No Action on expanded mine areas
WILDLIFE		
(Applicable to all five tracts)		
DURING MINING the following could occur:		
Wildlife displacement	Moderate, short term on existing mine areas	Same as No Action on expanded mine areas
Pronghorn passage reduction	Moderate, short term on existing mine areas	Same as No Action on expanded mine areas
Increased mortality rate to small mammals	Moderate, short term on existing mine areas	Same as No Action on expanded mine areas
Temporary displacement of small mammals	Moderate, short term on existing mine areas	Same as No Action on expanded mine areas
Sage grouse habitat removal	Moderate, short term on existing mine areas	Same as No Action on expanded mine areas
Abandonment of raptor nests	Negligible, short term on existing mine areas	Same as No Action on expanded mine areas
Foraging habitat reduction for raptors	Negligible, short term on existing mine areas	Same as No Action on expanded mine areas
Loss of nesting and foraging habitat for Migratory Birds of Management Concern	Negligible, short term on existing mine areas	Same as No Action on expanded mine areas
Reduction in waterfowl resting and feeding habitat	Negligible, short term on existing mine areas	Same as No Action on expanded mine areas
Loss of songbird foraging habitat	Moderate, short term on existing mine areas	Same as No Action on expanded mine areas
Temporary wildlife habitat loss	Negligible, short term on existing mine areas	Same as No Action on expanded mine areas
Continued road kills by mine-related traffic	Negligible, short term on existing mine areas	Same as No Action on expanded mine areas
THREATENED, ENDANGERED, PROPOSED, AND CANDIDATE SPECIES		
(NARO North and NARO South)		
Loss of black-footed ferret colonies	No effect due to lack of occurrence in area	Same as No Action on expanded mine areas
Loss of bald eagle nesting and foraging habitat	Disturbance of potential foraging habitat	Same as No Action on expanded mine areas
Loss of Ute Ladies'-tresses orchid habitat	Disturbance of potential habitat	Same as No Action on expanded mine areas
Loss of mountain plover habitat	Typical suitable habitat not present	Same as No Action on expanded mine areas
Loss of black-tailed prairie dog habitat	Disturbance of potential habitat, mining will potentially directly affect individuals	Same as No Action on expanded mine areas
(Little Thunder)		
Loss of black-footed ferret colonies	No effect due to lack of occurrence in area	Same as No Action on expanded mine area
Loss of bald eagle nesting and foraging habitat	Disturbance of potential foraging habitat	Same as No Action on expanded mine area
Loss of Ute Ladies'-tresses orchid habitat	Disturbance of artificially created potential habitat	Same as No Action on expanded mine area
Loss of mountain plover habitat	Little to no typical suitable habitat present	Typical suitable habitat not present on tract
Loss of black-tailed prairie dog habitat	Disturbance of potential habitat, mining will potentially directly affect individuals	Disturbance of potential habitat

¹ Refer to Section 4.0 and 4.1 for a discussion on magnitude of impacts.

² All impacts are assumed to be adverse unless noted otherwise.

Table 2-5. Summary Comparison of Magnitude¹ and Duration of Direct and Indirect Impacts for the Proposed Action, Alternative 2, Alternative 3, and the No Action Alternative for the NARO North, NARO South, Little Thunder, West Roundup, and West Antelope LBA Tracts² (Continued).

DESCRIPTION OF POTENTIAL IMPACT BY RESOURCE	MAGNITUDE AND DURATION OF IMPACT	
RESOURCE NAME	NO ACTION ALTERNATIVE	PROPOSED ACTION, ALTERNATIVE 2, & ALTERNATIVE 3
THREATENED, ENDANGERED, PROPOSED, AND CANDIDATE SPECIES (Continued)		
(North Roundup)		
Loss of black-footed ferret colonies	No effect due to lack of occurrence in area	Same as No Action on expanded mine area
Loss of bald eagle nesting and foraging habitat	Disturbance of potential foraging habitat	Same as No Action on expanded mine area
Loss of Ute Ladies'-tresses orchid habitat	Disturbance of artificially created potential habitat	Same as No Action on expanded mine area
Loss of mountain plover habitat	Little to no typical suitable habitat present	Same as No Action on expanded mine area
Loss of black-tailed prairie dog habitat	Disturbance of potential habitat, mining will potentially directly affect individuals	Disturbance of potential habitat, mining would potentially affect individuals on the tract under Alternatives 2 & 3
(West Antelope)		
Loss of black-footed ferret colonies	No effect due to lack of occurrence in area	Same as No Action on expanded mine area
Loss of bald eagle nesting and foraging habitat	Disturbance of potential foraging habitat	Same as No Action on expanded mine area
Loss of Ute Ladies'-tresses orchid habitat	Potential habitat may be disturbed	Same as No Action on expanded mine area
Loss of mountain plover habitat	Mining has or will affect mountain plover use areas	Same as No Action on expanded mine area
Loss of black-tailed prairie dog habitat	Mining will potentially directly affect individuals	Same as No Action of expanded mine area
LAND USE AND RECREATION		
(Applicable to all five tracts)		
ENVIRONMENTAL CONSEQUENCES ON LAND USE would be:		
Reduction of livestock grazing	Moderate, long term on existing mine areas	Same as No Action on expanded mine areas
Loss of wildlife habitat	Moderate, long term on existing mine areas	Same as No Action on expanded mine areas
Curtailement of oil and gas development	Moderate, long term on existing mine areas	Same as No Action on expanded mine areas
Loss of public land available for recreation activities	Moderate, short term on existing mine areas	Same as No Action on expanded mine areas
Loss of CBM reserves ³	Moderate, permanent on existing mine areas	Same as No Action on expanded mine areas
CULTURAL RESOURCES		
(NARO North and NARO South)		
75 sites not eligible or recommended not eligible for NRHP	Impacts to eligible or unevaluated sites are not permitted; any site eligible for the NRHP would be avoided or mitigated through data recovery	Same as No Action on expanded mine areas
4 eligible for NRHP		
(Little Thunder)		
34 sites not eligible or recommended not eligible for NRHP	Impacts to eligible or unevaluated sites are not permitted; any site eligible for the NRHP would be avoided or mitigated through data recovery	Same as No Action on expanded mine area
None eligible for NRHP		

¹ Refer to Section 4.0 and 4.1 for a discussion on magnitude of impacts.

² All impacts are assumed to be adverse unless noted otherwise.

³ Most of the CBM reserves could be recovered prior to initiation of mining activity, those reserves not recovered prior to mining would be lost.

Table 2-5. Summary Comparison of Magnitude¹ and Duration of Direct and Indirect Impacts for the Proposed Action, Alternative 2, Alternative 3, and the No Action Alternative for the NARO North, NARO South, Little Thunder, West Roundup, and West Antelope LBA Tracts² (Continued).

DESCRIPTION OF POTENTIAL IMPACT BY RESOURCE	MAGNITUDE AND DURATION OF IMPACT	
RESOURCE NAME	NO ACTION ALTERNATIVE	PROPOSED ACTION, ALTERNATIVE 2, & ALTERNATIVE 3
CULTURAL RESOURCES (Continued)		
(West Roundup)		
30 sites not eligible or recommended not eligible for NRHP None eligible for NRHP	Impacts to eligible or unevaluated sites are not permitted; any site eligible for the NRHP would be avoided or mitigated through data recovery	Same as No Action on expanded mine area
(West Antelope)		
49 sites not eligible or recommended not eligible for NRHP 4 eligible for NRHP	Impacts to eligible or unevaluated sites are not permitted; any site eligible for the NRHP would be avoided or mitigated through data recovery	Same as No Action on expanded mine area
(Applicable to all five tracts)		
Possible increase in vandalism Possible increase in unauthorized collecting	No impacts on existing mine areas No impacts on existing mine areas	Negligible on expanded mine areas Negligible on expanded mine areas
NATIVE AMERICAN CONCERNS		
(Applicable to all five tracts)	No impact identified on existing mine areas	Same as No Action on expanded mine areas
PALEONTOLOGICAL RESOURCES		
(Applicable to all five tracts)		
Overburden removal could expose fossils for scientific examination	Disturbance of USFS classified Class 3 and Class 5 formations on existing mine areas	Same as No Action on expanded mine areas
VISUAL RESOURCES		
(Applicable to all five tracts)		
EVIDENT IMPACTS DURING MINING would include: Alteration of landscape classified as Class IV by the BLM	Negligible, short term on existing mine areas	Same as No Action on expanded mine areas
IMPACTS FOLLOWING RECLAMATION could be:		
Smoother sloped terrain	Negligible, long term on existing mine areas	Same as No Action on expanded mine areas
Reduction in sagebrush density	Negligible, short term on existing mine areas	Same as No Action on expanded mine areas
NOISE		
(NARO North and NARO South)		
INCREASED NOISE LEVELS could affect: Occupied dwellings within one mile	Moderate, short term on existing mine area	Same as No Action on expanded mine areas
(Little Thunder)		
INCREASED NOISE LEVELS could affect: Occupied dwellings within one mile	Moderate, short term on existing mine area	Same as No Action on expanded mine area

¹ Refer to Section 4.5 for a discussion of cumulative impacts.

² All impacts are assumed to be adverse unless noted otherwise.

Table 2-5. Summary Comparison of Magnitude¹ and Duration of Direct and Indirect Impacts for the Proposed Action, Alternative 2, Alternative 3, and the No Action Alternative for the NARO North, NARO South, Little Thunder, West Roundup, and West Antelope LBA Tracts² (Continued).

DESCRIPTION OF POTENTIAL IMPACT BY RESOURCE	MAGNITUDE AND DURATION OF IMPACT	
RESOURCE NAME	NO ACTION ALTERNATIVE	PROPOSED ACTION, ALTERNATIVE 2, & ALTERNATIVE 3
NOISE (Continued)		
(West Roundup)		
INCREASED NOISE LEVELS could affect: Occupied dwellings within one mile	None for existing mine area	Same as No Action on expanded mine area
(West Antelope)		
INCREASED NOISE LEVELS could affect: Occupied dwellings within one mile	None for existing mine area	Same as No Action on expanded mine area
(Applicable to all five tracts)		
INCREASED NOISE LEVELS could affect: Wildlife in immediate vicinity	Negligible, short term on existing mine areas	Same as No Action on expanded mine areas
TRANSPORTATION FACILITIES		
(NARO North and NARO South)		
Increase in duration that coal is shipped on railroads and employees travel on highways by 3 to 5.5 years	No impact on existing mine area	Negligible, short term on expanded mine areas
(Little Thunder)		
Increase in duration that coal is shipped on railroads and employees travel on highways by 0.3 to 10.7 years	No impact on existing mine area	Negligible, short term on expanded mine area
(West Roundup)		
Increase in duration that coal is shipped on railroads and employees travel on highways by 4.5 to 7.1 years	No impact on existing mine area	Negligible, short term on expanded mine area
(West Antelope)		
No increase in time that coal is shipped on railroads and employees travel on highways.	No impact on existing mine area	Same as No Action on expanded mine area
(Applicable to all five tracts)		
Relocation of pipelines	No impact on existing mine areas	Negligible, short term on expanded mine areas
Relocation of utility lines	No impact on existing mine areas	Short term on expanded mine areas
SOCIOECONOMICS		
(NARO North and NARO South)		
EFFECTS DURING MINING would include: Employment Potential (10 additional jobs in expanded mine area are expected)	Moderate, beneficial short term on existing mine area	Same as No Action on expanded mine areas

¹ Refer to Section 4.0 and 4.1 for a discussion on magnitude of impacts.

² All impacts are assumed to be adverse unless noted otherwise.

Table 2-5. Summary Comparison of Magnitude¹ and Duration of Direct and Indirect Impacts for the Proposed Action, Alternative 2, Alternative 3, and the No Action Alternative for the NARO North, NARO South, Little Thunder, West Roundup, and West Antelope LBA Tracts² (Continued).

DESCRIPTION OF POTENTIAL IMPACT BY RESOURCE	MAGNITUDE AND DURATION OF IMPACT	
RESOURCE NAME	NO ACTION ALTERNATIVE	PROPOSED ACTION, ALTERNATIVE 2, & ALTERNATIVE 3
SOCIOECONOMICS (Continued)		
(Little Thunder and West Antelope)		
EFFECTS DURING MINING would include:		
Employment Potential (No additional jobs in expanded mine area are expected)	Moderate, beneficial short term on existing mine area	Same as No Action on expanded mine area
(West Roundup)		
EFFECTS DURING MINING would include:		
Employment Potential (176 additional jobs in expanded mine area are expected)	Moderate, beneficial short term on existing mine area	Same as No Action on expanded mine area
(Applicable to all five tracts)		
EFFECTS DURING MINING would include:		
Revenues from royalties and taxes to the state government	Moderate, beneficial short term on existing mine areas	Same as No Action on expanded mine areas
Revenues from royalties and taxes to the federal government	Moderate, beneficial short term on existing mine areas	Same as No Action on expanded mine areas
Economic development	Moderate, beneficial short term on existing mine areas	Same as No Action on expanded mine areas
Population in Campbell and Converse Counties	No impact on existing mine areas	Same as No Action on Expanded mine areas

¹ Refer to Section 4.0 and 4.1 for a discussion on magnitude of impacts.

² All impacts are assumed to be adverse unless noted otherwise.

Table 2-6. Summary Comparison of Magnitude and Duration of Cumulative Impacts^{1, 2}.

DESCRIPTION OF POTENTIAL IMPACT BY RESOURCE RESOURCE NAME	MAGNITUDE TYPE AND DURATION OF IMPACT	
	NO ACTION ALTERNATIVE	PROPOSED ACTION, ALTERNATIVE 2, & ALTERNATIVE 3
TOPOGRAPHY & PHYSIOGRAPHY		
REDUCED RELIEF AND SUBDUED TOPOGRAPHY could result in:		
Reduction in topographic diversity	Negligible, long term on existing mine areas	Same as No Action on expanded mine areas
Increased precipitation infiltration	Negligible, long term on existing mine areas	Same as No Action on expanded mine areas
Biodiversity reduction	Negligible, long term on existing mine areas	Same as No Action on expanded mine areas
Big game carrying capacity reduction	Negligible, long term on existing mine areas	Same as No Action on expanded mine areas
GEOLOGY AND MINERALS		
RECOVERY OF COAL would result in:		
Stabilization of municipal, county and state economies	Significant, beneficial, short term on existing mine areas	Same as No Action on expanded mine areas
SOILS		
RECLAIMED SOILS could result in:		
Increased soil productivity	Negligible, long term on existing mine areas	Same as No Action on expanded mine areas
Reduced erosion	Negligible, long term on existing mine areas	Same as No Action on expanded mine areas
AIR QUALITY		
IMPACTS ASSOCIATED WITH MINING OPERATIONS would include:		
Elevated concentrations of gaseous emissions	Short term on existing mine areas	Same as No Action on expanded mine areas
Elevated concentrations of particulate matter	Short term on existing mine areas, may overlap with impacts caused by other development on adjacent lands	Same as No Action on expanded mine areas
WATER RESOURCES		
<u>SURFACE WATER</u>		
IMPACTS TO SURFACE WATER could result in:		
Temporary reduction in soil infiltration rates and increased runoff	Negligible, short term on existing mine areas	Same as No Action on expanded mine areas
<u>GROUNDWATER</u>		
IMPACTS ON GROUNDWATER could result in:		
Removal of coal and overburden aquifers	Negligible, long term on existing mine areas	Same as No Action on expanded mine areas
Depressed water levels in aquifer adjacent to mines	Moderate, short term on existing mine areas, impacts may overlap with impacts caused by other developments on adjacent lands	Same as No Action on expanded mine areas
Replacement of existing coal and overburden with spoil aquifers	Negligible, long term on existing mine areas	Same as No Action on expanded mine areas
Change in hydraulic properties	Negligible to moderate, short term on existing mine areas	Same as No Action on expanded mine areas
Change in groundwater quality in backfilled areas	Negligible, long term on existing mine areas	Same as No Action on expanded mine areas

¹ Refer to Section 4.5 for a discussion of cumulative impacts.

² All impacts are assumed to be adverse unless noted otherwise.

Table 2-6. Summary Comparison of Magnitude and Duration of Cumulative Impacts^{1,2} (Continued).

DESCRIPTION OF POTENTIAL IMPACT BY RESOURCE			MAGNITUDE TYPE AND DURATION OF IMPACT	
RESOURCE NAME		NO ACTION ALTERNATIVE	PROPOSED ACTION, ALTERNATIVE 2, & ALTERNATIVE 3	
ALLUVIAL VALLEY FLOORS		No cumulative impacts anticipated on existing mine areas	Same as No Action on expanded mine areas	
WETLANDS				
Removal of existing wetlands		Wetlands on existing mine areas would be mined and reclaimed	Same as No Action on expanded mine areas	
VEGETATION				
SURFACE DISTURBANCE would result in:				
Loss of common native vegetation types for wildlife		Negligible, short term on existing mine areas	Same as No Action on expanded mine areas	
Regional loss of vegetative diversity		Negligible, long term on existing mine areas	Same as No Action on expanded mine areas	
WILDLIFE				
IMPACTS ON WILDLIFE FROM SURFACE MINING could result in:				
Loss of pronghorn habitat		Moderate, short term on existing mine areas	Same as No Action on expanded mine areas	
Mule deer population reduction		Negligible, short term on existing mine areas	Same as No Action on expanded mine areas	
Reduction in raptor nesting sites and foraging habitat		Negligible, short term on existing mine areas	Same as No Action on expanded mine areas	
Reduction in sage grouse leks		Negligible, short term on existing mine areas	Same as No Action on expanded mine areas	
Loss of nesting and foraging habitat for Migratory Birds of Management Concern		Negligible, short term on existing mine areas	Same as No Action on expanded mine areas	
Reduction in waterfowl habitat		Minor, short term on existing mine areas	Same as No Action on expanded mine areas	
Permanent reduction in wildlife habitat diversity		Major, long term on existing mine areas	Same as No Action on expanded mine areas	
Permanent reduction in some wildlife carrying capacity		Major, long term on existing mine areas	Same as No Action on expanded mine areas	
THREATENED, ENDANGERED, PROPOSED, AND CANDIDATE SPECIES				
		Individuals of some T&E species will potentially be directly affected by mining operations on the existing leases, impacts may overlap with other developments on adjacent lands	Same as No Action on expanded mine areas	
LAND USE AND RECREATION				
IMPACTS ON LAND USE could result in:				
Loss of agricultural production		Moderate, short term on existing mine areas	Same as No Action on expanded mine areas	
Disruption of oil and gas development/production		Moderate to significant, short term on existing mine areas	Same as No Action on expanded mine areas	
Reduction of wildlife habitat		Moderate, short term on existing mine areas	Same as No Action on expanded mine areas	
IMPACTS ON RECREATION could result in:				
Loss of access to public lands used by recreationists, particularly hunting		Moderate, short term on existing mine areas	Same as No Action on expanded mine areas	

¹ Refer to Section 4.5 for a discussion of cumulative impacts.² All impacts are assumed to be adverse unless noted otherwise.

Table 2-6. Summary Comparison of Magnitude and Duration of Cumulative Impacts^{1,2} (Continued).

DESCRIPTION OF POTENTIAL IMPACT BY RESOURCE		MAGNITUDE TYPE AND DURATION OF IMPACT	
RESOURCE NAME		NO ACTION ALTERNATIVE	PROPOSED ACTION, ALTERNATIVE 2, & ALTERNATIVE 3
CULTURAL RESOURCES		Sites eligible for NRHP would be mitigated on existing mine areas	Same as No Action on expanded mine areas
NATIVE AMERICAN CONCERNS		No impact identified on existing mine areas	Same as No Action on expanded mine areas
PALEONTOLOGICAL RESOURCES		No impact identified on existing mine areas	Same as No Action on expanded mine areas
VISUAL RESOURCES			
Impacts on visual resources by mining activities		Moderate, short term on existing mine areas	Same as No Action on expanded mine areas
NOISE			
		Negligible, short term outside of existing mine areas	Same as No Action outside expanded mine areas
TRANSPORTATION FACILITIES			
Continued use of existing transportation facilities		Negligible, short term on existing mine area	Same as No Action on expanded mine areas
SOCIOECONOMICS			
IMPACTS ON SOCIOECONOMICS could include:			
Mineral and energy related development		Moderate, beneficial, short term on existing mine areas	Same as No Action on expanded mine areas
Employment		Significant, beneficial, short term on existing mine areas	Same as No Action on expanded mine areas
Housing market		Significant, short term due to existing mines	Same as No Action on expanded mine areas
Economic development		Significant, beneficial, short term due to existing mine areas	Same as No Action on expanded mine areas
Revenues and royalties		Significant, beneficial, short term due to existing mine areas	Same as No Action on expanded mine areas

¹ Refer to Section 4.5 for a discussion of cumulative impacts.

² All impacts are assumed to be adverse unless noted otherwise.

2.0 Proposed Action and Alternatives

and alternatives for each of the five LBA tracts are analyzed in Chapter 4.

These summary impact tables are derived from the following explanation of impacts and magnitude. NEPA requires all agencies of the federal government to include, in every recommendation or report on proposals for legislation and other major federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on:

- (i) the environmental impact of the Proposed Action,
- (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,
- (iii) alternatives to the Proposed Action,
- (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
- (v) any irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented (42 USC § 4332[C]).

Impacts can be beneficial or adverse, and they can be a primary result of an action (direct) or a secondary result (indirect). They can be permanent, long-term (persisting beyond the end of mine life and reclamation) or short-term (persisting during mining and reclamation and through the time the reclamation bond is released). Impacts also vary in terms of significance. The basis for conclusions regarding significance are

the criteria set forth by the Council on Environmental Quality (40 CFR 1508.27) and the professional judgement of the specialists doing the analyses. Impact significance may range from negligible to substantial; impacts can be significant during mining but be reduced to insignificance following completion of reclamation.