7.0 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES AND SHORT-TERM USE OF ENVIRONMENT VS LONG-TERM PRODUCTIVITY

7.1 Irreversible and Irretrievable Commitment of Resources

For purposes of this section, the proposed action affects the commitment of a resource "irreversibly" when the current and/or potential productivity of that resource is lost and, once lost, cannot be regained (that is, the loss of this productivity cannot be reversed). The proposed action affects the commitment of a resource "irretrievably" when the current and/or potential productivity of that resource is lost during the life of the proposed action, but can be regained at some future time (that is, the loss of the productivity can be reversed).

The major irreversible commitment of resources resulting from the proposed action would be the mining and consumption of 608 million tons of coal to be used for electric power generation and other purposes during the 42 years of mining. An additional 18.75 to 31.25 million tons of coal resources lost during the course of mining would not be recovered during this period. There would be an irreversible commitment of petroleum, oil and lubricants during the life of the mine. Certain metals used in the construction of transmission lines and other facilities and in the manufacturing of mining equipment would be committed for the life of the mine but would be salvageable upon abandonment.

The quality, structure and characteristics of approximately 51.4 million cubic yards of topsoil located on 7,333 acres would be irretrievably changed by mixing. Soil formation processes, though continuing, would be irretrievably altered by these activities. Newly formed soil material would be unlike that in the natural landscape in the surrounding undisturbed areas; however, the productivity of the reclaimed soils would be at least equal to that of undisturbed soils and erosion potential would not increase materially.

Air quality would be irretrievably degraded and visibility irretrievably reduced by suspended particulates emitted during the life of the mine. These effects would be most pronounced during periods of calm weather and temperature inversions and most noticeable when mining operations are closest to the western and northern permit boundaries.

There would be an irretrievable commitment of surface- and ground-water resources during and after mining. Little change in surface-water quality is anticipated. TDS levels in the spoil aquifer are expected to be elevated for the long term, and it may take 100 years or more for water levels to achieve a postmining equilibrium and for the first pore volume of spoils water to be flushed out of the spoils. Both during and after mining, alternative sources of water would be required for these areas until the spoils aquifer can sustain water uses. Once the spoils aquifer resaturates and a steady-state flow pattern is established, water quality in the down-gradient coal aquifer may be temporarily degraded. Geochemical modeling by the USGS suggests that the coal aquifer may contain elements capable of improving the quality of the water flowing out of the spoils aquifer (Martin, et al., 1988, p. 93). Additional data are needed to confirm this.

Lowering of water levels would occur in the overburden and coal aquifers in the vicinity of the mine until mining is completed. The drawdowns would extend to the north and west; to the south they would be limited by the Caballo mine and to the east they would be limited by the coal outcrop. Drawdowns would extend out several thousand feet in the overburden and several miles in the coal, but would be insignificant at these extreme distances. Although the coal aquifer drawdowns toward the west (down gradient) of the mine become less important as the depth to coal increases (fewer wells are completed in the coal to the west), these drawdowns could persist for several years. Water levels would recover to premining levels in most cases after mine-related withdrawals cease.

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The cropland, grassland, and associated grazing and wildlife habitat that the affected lands provide would be irreversibly and irretrievably lost during the period of mining and reclamation. Some of the vegetation diversity would be irreversibly lost.

Loss of human life and disabling injuries could occur due to both the mining operations and vehicular traffic associated with the mining operations. This would be an irreversible and irretrievable commitment of human resources.

There would be an irretrievable and irreversible commitment of revenues generated by the mine by local jurisdictions to sustain levels of public services and facilities.

Disturbance of all known historic and prehistoric sites and paleontological resources on the mine site would be mitigated. However, any accidental destruction of currently known or unknown archeological or paleontological items would be irreversible and irretrievable.

Recreational services and facilities provided by local communities would be sustained through the life of the mine at current levels of demand which would be an irretrievable and irreversible commitment of these resources. Hunting and wildlife observation activities would be curtailed within the mine permit area until mining and reclamation are complete.

The natural topography of the area, which is already quite flat, would have even less relief and smaller average slopes after reclamation which would be an irretrievable and irreversible commitment of resources. The subdued relief on the permit area and other mine areas in the region could improve vegetative production and reduce erosion by increasing the precipitation infiltration rates, but the flatter topography may be visually less pleasing and detrimental to certain species of wildlife which rely on more dramatic topographic features.

7.2 Short-Term Use of the Environment vs Long-Term Productivity

At anticipated production levels, the Rocky Butte Mine would be committed to coal production and reclamation for 42 years. BLM considers the impacts of mining the proposed life of mine area to be short term if they would occur during these years and long term if they persist beyond 42 years.

Sale of the WRB tract to NWR, formation of an LMU and approval of a mining permit for the Rocky Butte Mine would enable mining of about 608 million tons of coal over a 42-year period to help meet national energy demands with a coal that is in compliance with sulfur dioxide emission standards. This assumes that a market exists for the coal (refer to Section 1.4). Although the Rocky Butte Mine would be a new mine, coal mining is already a major factor in the socioeconomic and environmental setting of Gillette and Campbell County. The Rocky Butte Mine would be adjacent to an existing mine, Caballo Mine, which is currently at the north end of a cluster of four adjacent mines along the north-south trending outcrop of the Wyodak-Anderson coal seam. The proposed Rocky Butte permit area is currently used for livestock grazing, dryland crop production, wildlife habitat and oil and gas production.

During the life of the mine, mining would result in the construction of additional roads, powerlines, fences and other facilities and structures in the area. Over the short term, mining would continue the process of change to the environment and commitment of resources. Over the long term, the area affected by mining would be reclaimed and returned to grazing land, dryland crop production, wildlife habitat and oil and gas production uses.

The coal removed from the Rocky Butte Mine represents nearly 8 percent of the coal currently under lease in the Wyoming portion of the Powder River Basin (7 percent considering leased coal and the 1.035 billion tons contained in six pending LBA's). A small amount of coal (3 to 5 percent or 18.75 to 31.25 million tons) would be unrecoverable due to normal mining losses.

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The primary short- and long-term effect of mining on the hydrologic balance would be from the removal of the shallow aquifers within the permit area and from drawdowns in the shallow aquifers north and west of the mine for the short term. Resaturation of the replacement spoils may take several decades. Over the long term, water levels in the shallow aquifers would begin to recover to premining levels in most areas after mine-related withdrawals cease. There would be little change in the surface- and ground-water quality over the short and long term.

Visibility within the proposed permit area would be reduced and TSP and PM_{10} within and adjacent to the permit area would increase over the short term but remain within regulatory standards.

During mining, about 1,850 acres would be out of production at any one time. Within three to five years after revegetation, productivity would be restored. In the long term, soil productivity in the area would be suitable for premining uses of livestock and wildlife habitat.

Approximately 7,333 acres of land within the proposed permit area would be progressively disturbed by construction and mining during the life of the mine. During mining, about 1,850 acres would be disturbed at any one time. There would be long-term changes to the existing topography from backfilling and grading operations; however, the modified topography would support and in some places enhance the proposed postmining land uses of grazing, dryland crop production and wildlife habitat. Productivity of soils over the long term would return to or exceed premining productivity because the reclaimed soils would be more uniform in depth, texture and chemical and physical composition than the premining soils.

There would be loss of vegetation on the 7,333 acres and an accompanying disturbance of wildlife habitat, dryland crop production, grazing land and oil and gas production. Introduced and native grasses and shrubs and trees would be planted after mining to restore vegetation in the disturbed areas. BLM has determined that the mine site would be returned over the long term to an equivalent or better production capacity than that offered by the existing vegetation. In addition, although the productive capacity would be increased, the long-term support of the proposed postmining land uses would be dependent upon an adequate water supply.

Wildlife over the short term would be affected during the mining and reclamation period. Some of the species dependent upon the diversity offered by the current vegetation would be displaced by other wildlife species more adaptable to the new environment. Over the long term, wildlife would utilize the cover and habitat provided by the reclaimed vegetation areas. Other wildlife species would benefit over the short term from the sedimentation ponds and impoundments built during mining.

Mine related traffic would be sustained on the public roads outside the proposed permit area over the short term. Recreational use of the proposed permit area would be suspended over the short term until reclamation is completed. The demand for public recreation facilities provided by the surrounding communities would be sustained over the life of the mine.

Over the short and long term, knowledge of cultural resources and past lifestyles could decrease because vandals could destroy information, mining could destroy undiscovered sites, and current technology and methodology could cause researchers to overlook data that in the future may be important to the interpretation of past lifestyles. Without continuing identification, impacts on cultural resources would be long term and permanent.

Residents living close to the proposed permit area would continue to be subjected to noise from blasting and other mining activities. Long term effects would be diminished and eventually eliminated when reclamation is completed.

The short-term use of the environment would result in the project area changing from a Visual Resource Management Class IV to a Class V. In the long-term the area should return to its premining class IV status as a result of land reclamation and facilities removal.

Residual socioeconomic impacts stemming from the Rocky Butte Mine would relate primarily to the generation of jobs, income and revenue to the

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Campbell County economy which would continue during the life of the mine and cease when the mine closes. The residual impact would be felt by those individuals and public entities which have made permanent investments or have otherwise come to rely on the mine's continuation. However, given the long mine life, these residual impacts suggest adequate time for amortization of such investment and lead time to adjust personal plans or other impacts when the time for mine closing arrives.