

EXECUTIVE SUMMARY

On February 4, 1999, P&M¹ filed a proposal with BLM to exchange P&M-owned land and minerals in Lincoln, Carbon, and Sheridan Counties in Wyoming for federally-owned coal in northern Sheridan County. P&M is a ChevronTexaco Company. Figure ES-1 is a general location map showing all the lands that would be involved in the exchange as proposed in relation to the State of Wyoming.

P&M owns approximately 5,858.5 acres of surface estate and portions of the mineral estate on the lands in Lincoln, Carbon, and Sheridan Counties, Wyoming, shown in Figures ES-2, ES-3, and ES-4. They are offering to exchange their ownership in these lands for federal coal rights in Sheridan County in the tract shown in Figure ES-5.

Figure ES-2 shows the lands P&M is offering to exchange in Lincoln County, referred to here as the Bridger lands. If the exchange is completed as proposed, P&M would transfer approximately 3,086 acres of surface estate and 3,086 acres of mineral estate to U.S. ownership. Approximately 2,446 acres are situated within the BTNF and would be administered by the USFS if an exchange is completed. Approximately 638 acres are located outside the BTNF and would be administered by the BLM if an exchange is completed.

Figure ES-3 shows the lands being offered by P&M in Carbon County, referred to as the JO Ranch lands. If the exchange is completed as proposed, P&M would transfer approximately 1,233.5 acres of surface estate to U.S. ownership. P&M does not own the mineral estate under the JO Ranch lands. If the exchange is completed, the surface estate of these lands would be administered by BLM, and the mineral ownership would not change.

Figure ES-4 shows the Sheridan County lands being offered by P&M, referred to as the Welch lands. If the exchange is completed as proposed, P&M would transfer approximately 1,539 acres of surface estate and 808 acres of coal estate to U.S. ownership. If the exchange is completed, the surface and coal estate of these lands would be administered by BLM and the rest of the mineral ownership would not change.

Figure ES-5 shows the federal coal tract P&M seeks to acquire by exchange for the properties described above. It includes approximately 2,045.5 acres of land referred to as the PSO Tract in this EIS. Figure ES-5 also shows the lands north of Sheridan, Wyoming where P&M owns the surface. P&M owns the surface of most, but not all, of the PSO Tract. There are several other private surface owners and there are 6.41 acres of public land in the tract, located in Section 15, T.58N., R.84W. The coal beneath the PSO Tract is unleased federal coal, for which BLM is the managing agency. If an exchange is

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

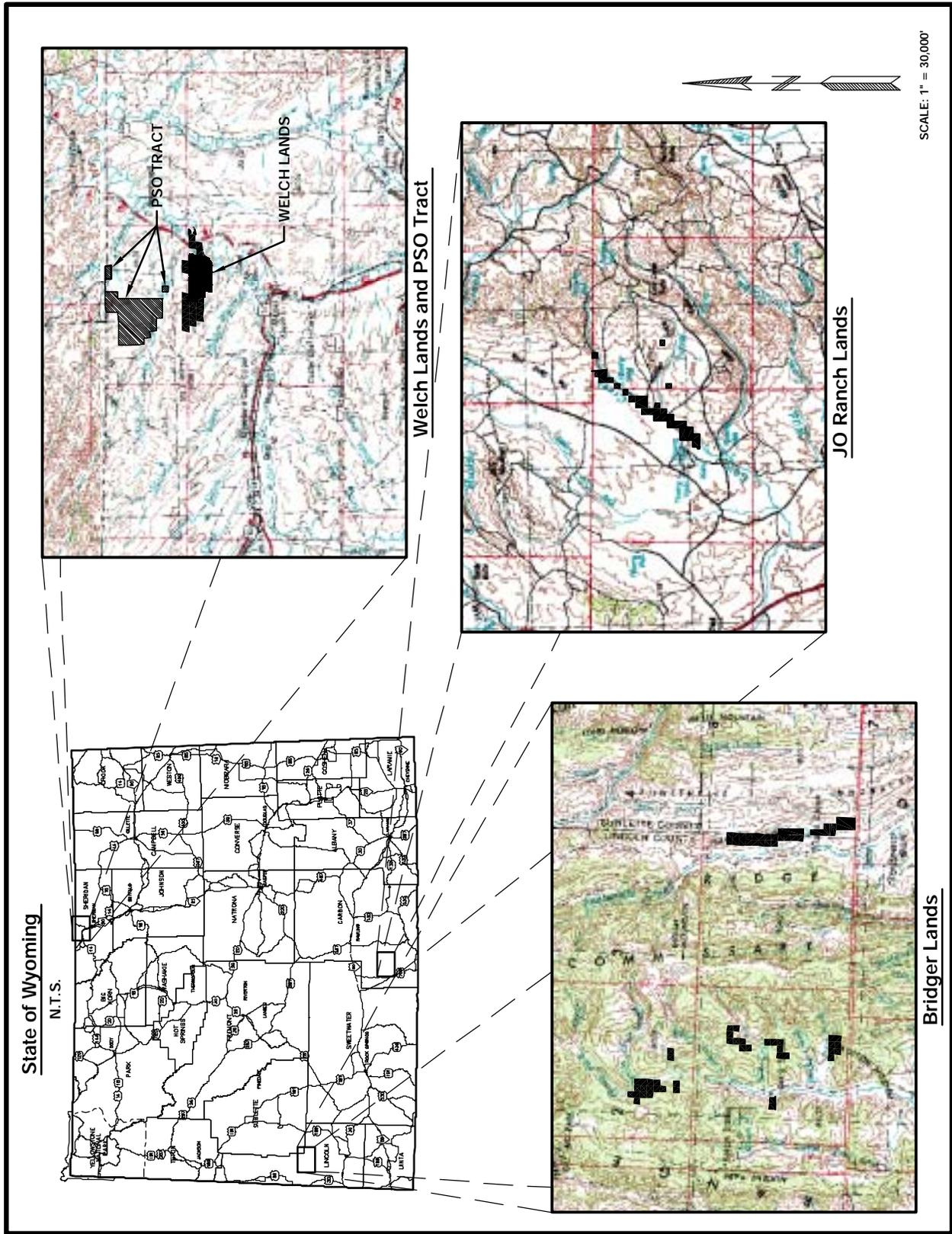


Figure ES-1. General Location of Lands Being Offered for Exchange by P&M and the PSO Tract.

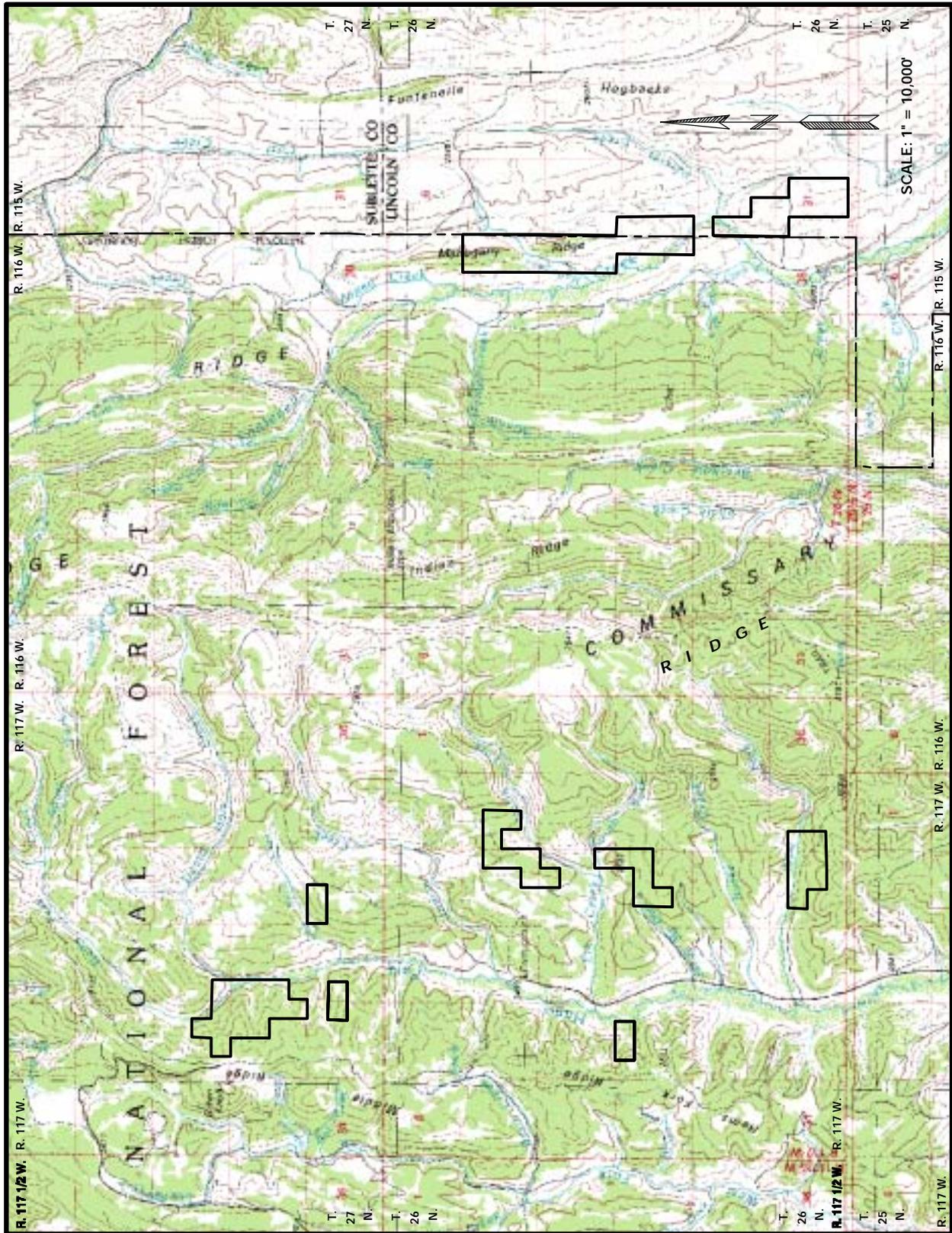


Figure ES-2. Bridger Lands Location Map.

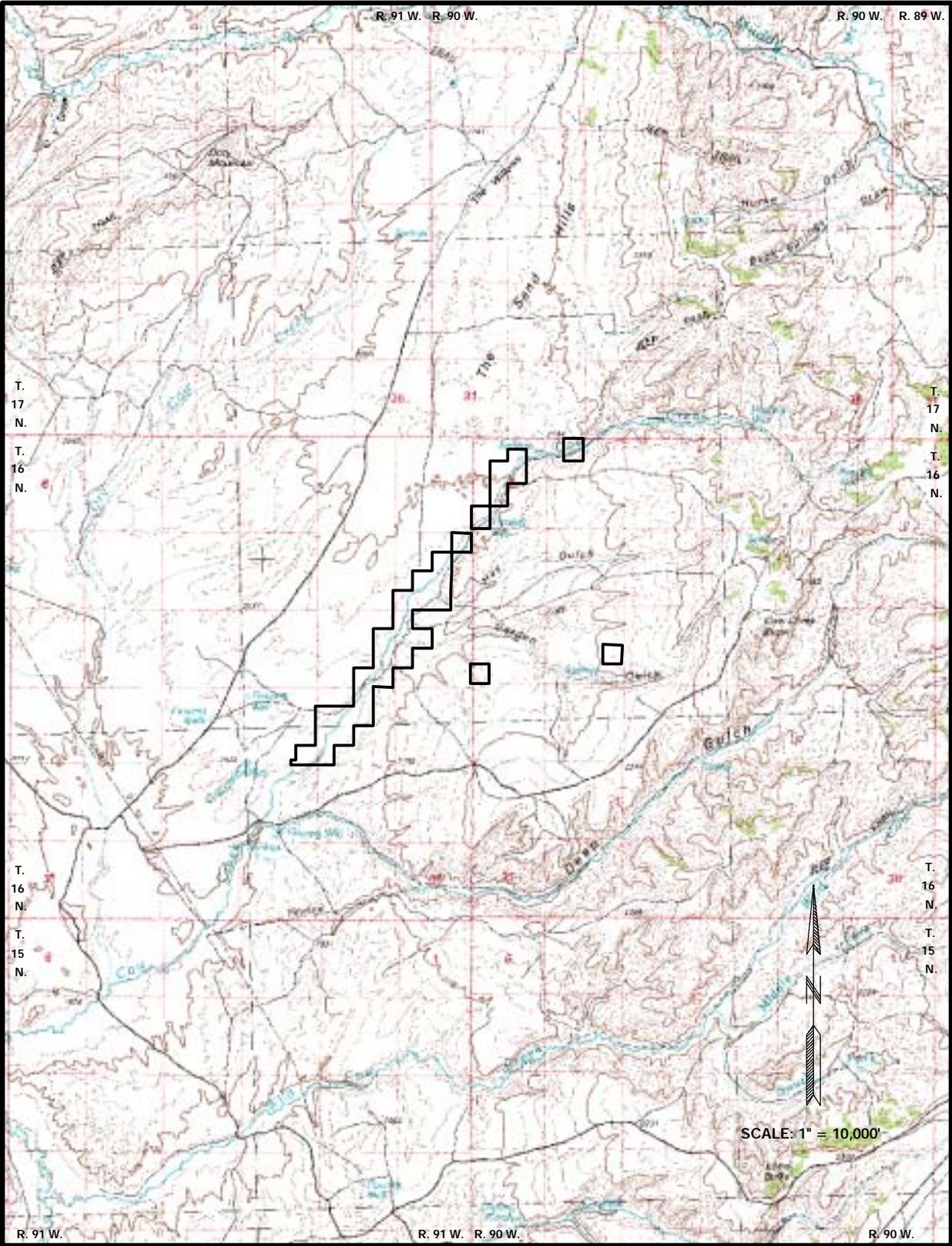


Figure ES-3. JO Ranch Lands Location Map.

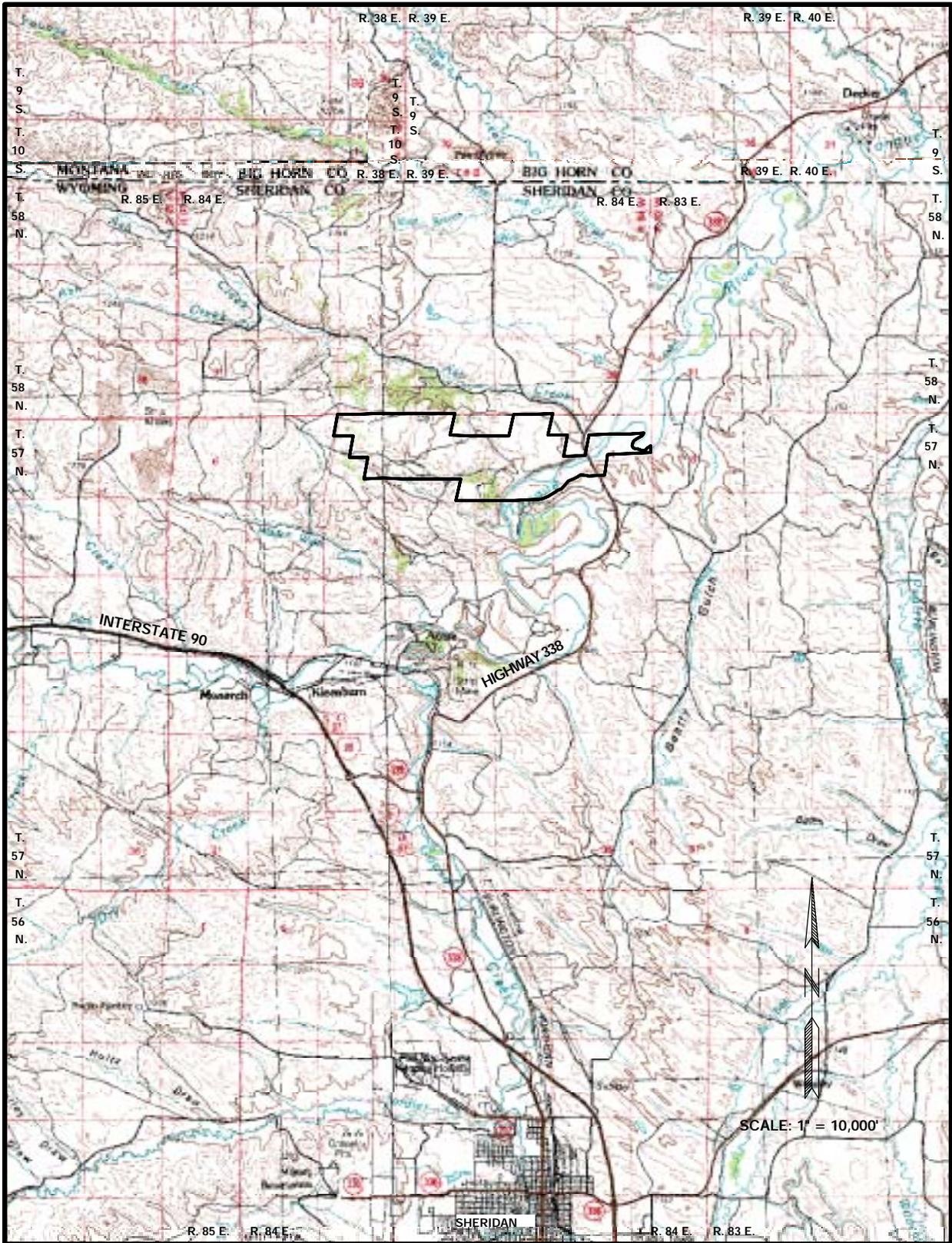


Figure ES-4. Welch Lands Location Map.

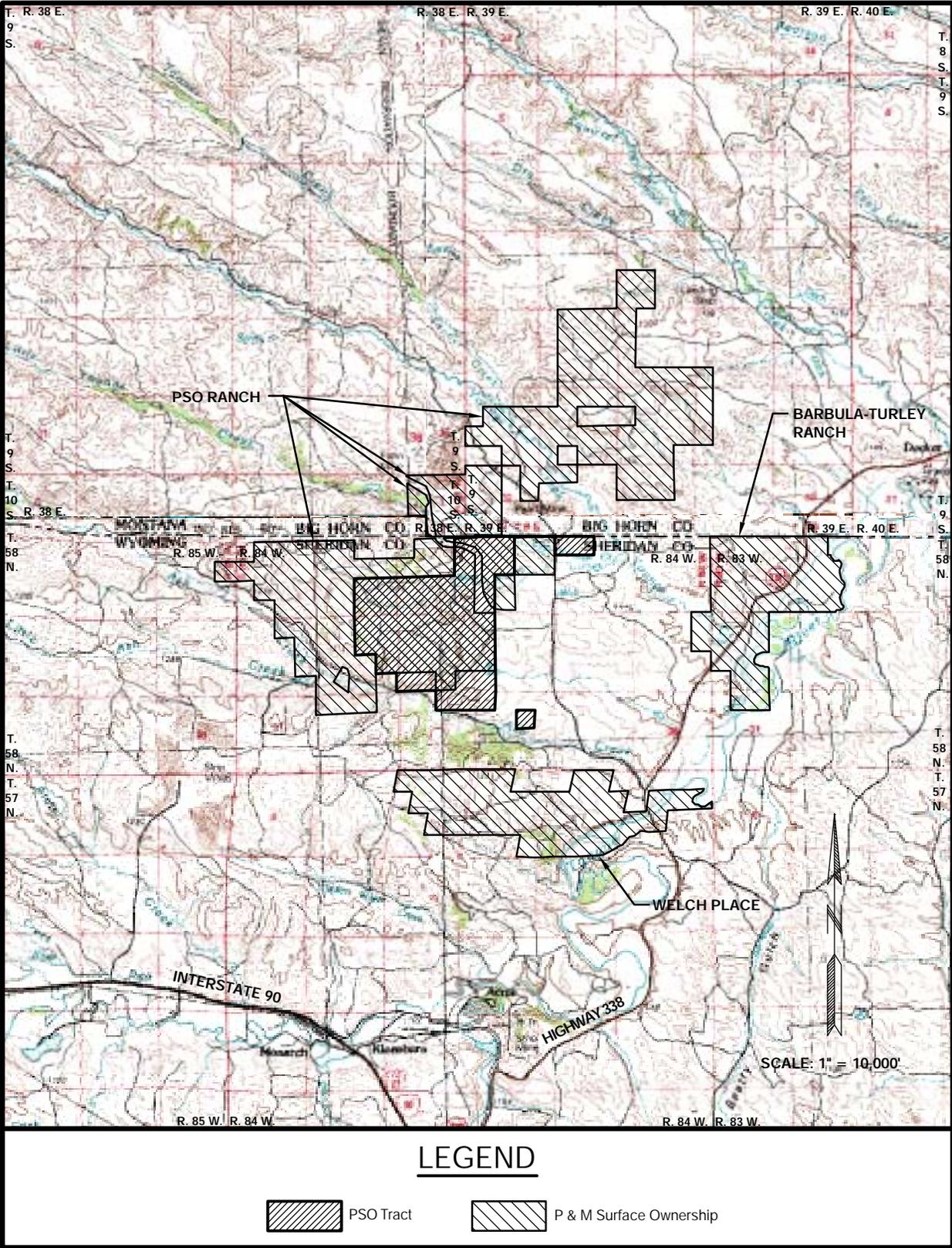


Figure ES-5. Location of P & M Surface Lands and PSO Tract.

completed, BLM would transfer ownership of the coal to P&M. P&M has indicated that, if the exchange is completed, they propose to open a surface coal mine to recover the coal reserves in the PSO Tract. For the purposes of this EIS, the coal mine that P&M proposes to open is referred to as the proposed Ash Creek Mine.

The exchange is being processed under the provisions of Section 206 of FLMPA, the Federal Land Exchange Facilitation Act, Public Law No. 106-248, and the regulations at 43 CFR 2200. The PRRCT reviewed the exchange proposal at a public meeting held on October 27, 1999 in Gillette, Wyoming.

The two most important considerations in evaluating a land exchange proposal are (1) whether the exchange is in the public interest as required under 43 CFR 2200.0-6(b), and (2) whether the value of the interests being acquired is of equal value to the lands or interests being conveyed to private ownership [as required under 43 CFR 2200.0-6(c)].

In making the public interest determination, BLM must consider a number of factors which are outlined in the regulations at 43 CFR 2200.0-6(b).

In order to ensure that the lands or interests being exchanged are of equal value, the fair market value of the respective properties must be evaluated. In this case, the fair market value of the P&M lands will be determined through a fee

appraisal by a BLM-approved qualified appraiser. BLM will determine the fair market value of the coal to be exchanged. All exchange appraisals will be further reviewed by an independent contract appraiser or appraisers. The amount of coal that will be offered for exchange will be the amount required to equal the value of the P&M lands to be acquired and will be in accordance with 43 CFR 2200.

In evaluating this exchange proposal, BLM must also fulfill the requirements of NEPA by evaluating the environmental impacts of the exchange proposal. BLM has determined that the requirements of NEPA would be best served by preparing an EIS. This EIS has been prepared to evaluate the site-specific and cumulative environmental impacts of exchanging the federal coal which P&M proposes to acquire as well as to the site specific and cumulative impacts of U.S. acquisition of the lands and associated mineral resources offered for exchange by P&M. Although BLM would not authorize mining by exchanging the federal coal as proposed, the EIS considers the impacts of mining the coal proposed for exchange because that could be a consequence of completing this exchange.

The USFS is a cooperating agency on this EIS. The Bridger lands in Lincoln County include most of the remaining parcels of private land within the Kemmerer Ranger District of the BTNF. Acquisition of these lands is a high priority for the USFS.

OSM is also a cooperating agency on this EIS. OSM has primary responsibility to administer programs that regulate surface coal mining and the surface effects of underground coal mining operations. If the exchange is completed, the coal would no longer be federally owned, but OSM would retain some oversight responsibilities on the regulation of the proposed surface coal mine.

If the exchange is completed, P&M would be required to complete baseline studies and obtain permit approvals before they could begin a mining operation. They propose to begin mining the coal by about 2008, depending on market conditions. The mining method would be truck and shovel, and the coal would be sold for use in electric power generation.

After mining, the land would be reclaimed for livestock grazing and wildlife use, which is the current use of the PSO Tract.

There are currently no active coal mines in Sheridan County, Wyoming, although coal has been mined from both underground and surface mines in the county in the past. The Big Horn Coal Mine, which is located several miles south of the PSO Tract, ceased production in 2000. Two surface coal mines are currently active north of Sheridan in Big Horn County, Montana (Decker and Spring Creek). Operations at the Decker Mine are located approximately six miles northeast of the proposed Ash Creek Mine. The Spring Creek Mine operations are located approximately one and one-

half miles northwest of the Decker Mine.

This draft EIS analyzes two alternatives: the Proposed Action and Alternative 1, which is the No Action Alternative.

The Proposed Action, which is the Preferred Alternative of the BLM and the USFS, is to complete an exchange. Under the Proposed Action, the Bridger, JO, and Welch lands and minerals owned by P&M would become public lands which would be administered by BLM or USFS. Table ES-1 summarizes the lands and minerals that P&M is offering for exchange under the Proposed Action.

Under the Proposed Action, in exchange for the above properties, P&M would acquire ownership of an amount of federal coal underlying the PSO Tract that would be equal in value to the properties they are offering for exchange. P&M owns the majority of the surface estate in the tract.

The Proposed Action assumes that P&M would mine the coal in the PSO Tract. Figure ES-6 is a schematic mine plan for the proposed Ash Creek Mine prepared by P&M. P&M estimates that there are 107 million tons of recoverable federal coal in the PSO Tract. P&M proposes to expand into adjacent private coal reserves during the later part of the mine life, as shown in Figure ES-6. However, P&M does not currently own that coal and does not have an arrangement with the owner to mine the coal. P&M proposes to mine the coal with

Table ES-1. Summary Comparison of Lands and Minerals Offered for Exchange by P&M.

Tract	Proposed Action			No Action Alternative	
	Surface Estate (acres)	Mineral Estate (All Minerals) (acres)	Mineral Estate (Coal Only) (acres)	Surface Estate (acres)	Mineral Estate (acres)
Bridger	3,086.25	3,086.25	0.00	0.00	0.00
JO Ranch	1,233.55	0.00	0.00	0.00	0.00
Welch	<u>1,538.70</u>	<u>0.00</u>	<u>807.69</u>	<u>0.00</u>	<u>0.00</u>
Total	5,858.50	3,086.25	807.69	0.00	0.00

shovel and truck equipment similar to those commonly utilized in the industry at other surface coal mines in the PRB. They propose using an overland conveyor to transport coal to a unit train loadout facility on the BNSF mainline due south of the operation. After the coal is removed, the mined-out area would be reclaimed in accordance with SMCRA and Wyoming State Law.

Alternative 1 is the No Action Alternative. Under this alternative, the exchange would not be completed. If the No-Action Alternative is selected, it is assumed that the federal coal in the PSO Tract would not be mined in the foreseeable future. Selection of this alternative would not preclude leasing of this federal coal in the future. Under the No-Action Alternative, it is also assumed that the Bridger lands, JO Ranch lands, and Welch lands would remain in private ownership. P&M has indicated that, if the exchange is not completed, it would consider subdividing the properties and offering them for public sale in order to maximize their value.

Table ES-2 summarizes coal production, surface disturbance, mine life, and federal and state revenues for the Proposed Ash

Creek Mine under the Proposed Action compared to the No Action Alternative (Alternative 1).

Other alternatives that were considered but not analyzed in detail assume government purchase of the offered lands from P&M using funds acquired by leasing the coal in the PSO Tract or by obtaining an appropriation through a source such as the Land and Water Conservation Fund. However, P&M has stated that it is not offering and does not intend to sell their properties to BLM and Forest Service at the appraised value being considered in the exchange. P&M has indicated that it would sell the lands on a competitive bid basis if the exchange is not completed. Therefore, these alternatives were not analyzed in detail.

The environmental impacts of these alternatives would be the similar to the environmental impacts of the Proposed Action or the No-Action Alternative, depending on whether or not the coal would be mined.

Critical elements of the human environment (BLM 1988) that could potentially be affected by the proposed action include air quality, cultural resources, Native American religious concerns, T&E species,

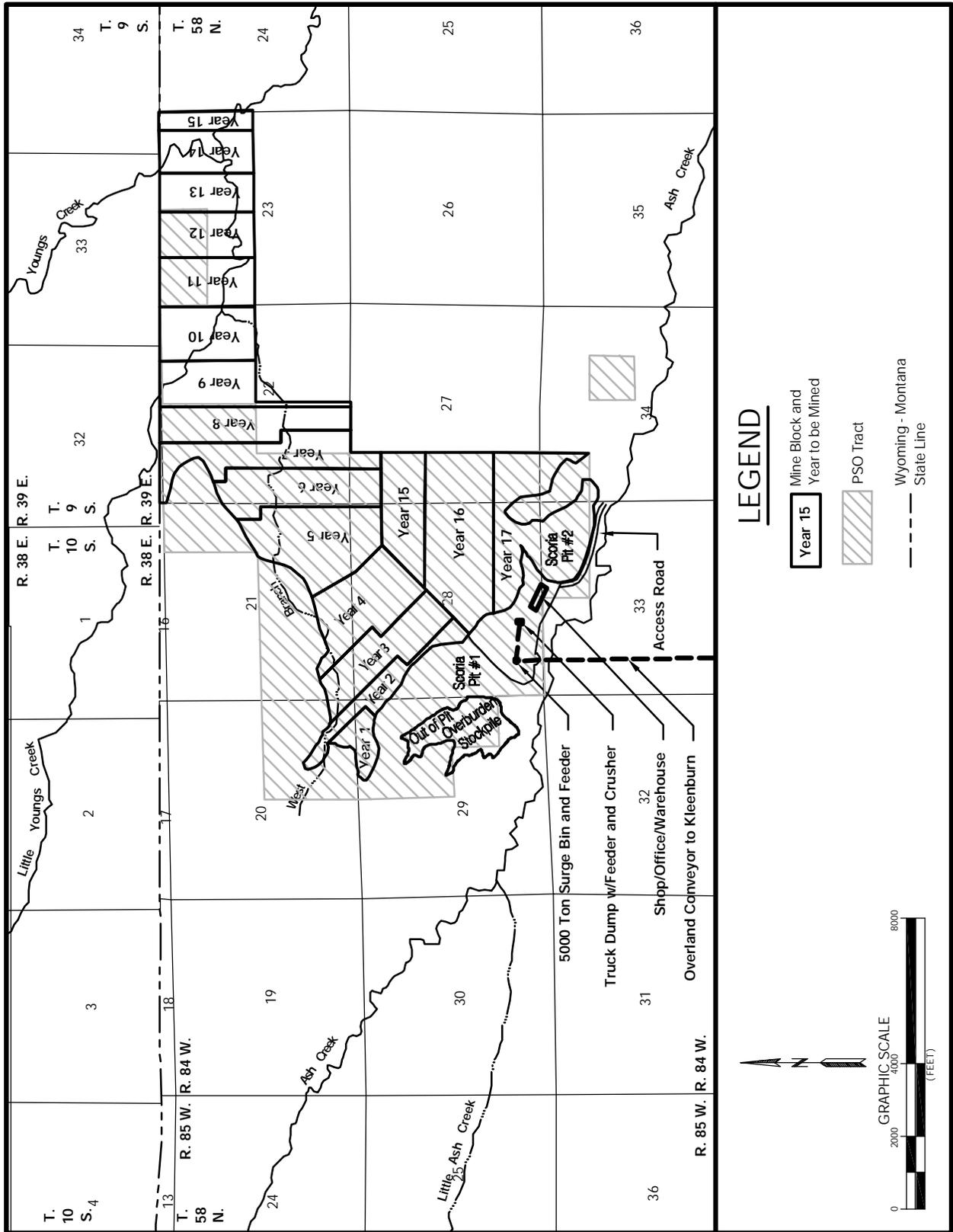


Figure ES-6. Schematic Mine Plan for the Ash Creek Mine.

Table ES-2. Summary Comparison of Coal Production, Surface Disturbance, and Revenues for the PSO Tract.

Item	Proposed Action	No Action Alternative
Mineable Federal Coal	112.5 million tons	none
Recoverable Federal Coal ¹	107.0 million tons	none
Area of Federal Coal Exchanged	2,045.53 acres	none
Area of Federal Coal to be Mined	1,244 acres	none
Total Area to be Disturbed by Coal Mining ²	2,595 acres	none
Average Annual Coal Production	10 million tons	none
Average Number of Employees	70	none
Total Projected State Revenues ³	\$ 99.0 million	none
Total Projected Annual Revenues to Sheridan County ⁴	\$ 6.0 million	none
Total Projected Federal Revenues ⁵	\$ 53.0 million	none

¹ Assumes 95 percent of mineable coal is recovered.

² Includes disturbance due to mining, overburden stockpiling, construction of surface facilities, scoria mining, and related disturbance.

³ Projected revenue to State of Wyoming is \$0.75 per ton of coal sold. Includes income from severance taxes, property and production taxes, sales and use taxes, and excludes Wyoming's share of federal royalty payments (UW 1994) (refer to Section 4.4.19 of this EIS), plus \$0.35 per ton of coal sold for AML fees minus U.S. Government's 50 percent share.

⁴ Based on a coal price of \$8.00 per ton and production rate of 10 million tons per year, including coal from PSO Tract and adjacent privately owned coal in mine plan area. Includes counties' share of severance taxes, property taxes, sales and use taxes.

⁵ Federal revenues are based on a coal price of \$8.00 per ton Δ amount of recoverable coal Δ black lung tax of 4.0 percent, plus \$0.35 per ton for AML fees Δ amount of recoverable coal minus the State's 50 percent share.

Note: All figures in this table are for the PSO Tract only.

hazardous or solid wastes, water quality, wetlands/riparian zones, floodplains, invasive non-native species, environmental justice, and areas of critical environmental concern. Prime or unique farmlands, wild and scenic rivers, and wilderness are not present in the project areas. The following paragraphs discuss the resources of the lands involved in the proposed exchange and the potential impacts if the exchange is completed as proposed.

The Bridger Lands (Figure ES-2) are characterized by northerly trending ridges and valleys. Perennial and ephemeral streams which are tributaries to Hams Fork and Fontenelle Creek flow through portions of some of the lands. The Bridger lands include habitat for many species including elk, mule deer, moose, mountain lion, and black bear. The streams may be occupied by Colorado River cutthroat trout. Threatened, endangered, and proposed species that USFWS has identified as potentially present in this area include bald eagle, Canada lynx, Ute-ladies' tresses, black-footed ferret, gray wolf, and mountain plover. Candidate species that USFWS has identified as potentially present in this area include black-tailed prairie dog, western boreal toad, yellow-billed cuckoo, and Arctic grayling. In addition, USFWS requested that potential impacts to endangered Colorado River Fish Species be considered if the Proposed Action would lead to water depletion in the Colorado River System. The Bridger lands are suitable for or have been used for

recreational purposes including hunting, fishing, camping, hiking, wildlife observation, off-road vehicle use, and photography. There is no existing mineral development on these lands.

If the exchange is completed as proposed, the Bridger lands and minerals would no longer be private inholdings surrounded by public lands. Public access to the lands would be ensured. The USFS anticipates no changes to the current management of the area. The BLM would manage the Bridger lands they acquire, as they manage the surrounding public lands. The private grazing permittee would lose the existing private grazing agreement, and BLM would divide the AUMs among the eight permittees in the La Barge Common grazing allotment.

The JO Ranch Lands (Figure ES-3) are located in southwest Carbon County, Wyoming, along the valley of Cow Creek, a tributary of the Little Snake River. The northern portion of the JO Ranch lands is within the area known as the Sand Hills. The lands include crucial winter range for elk and mule deer. The portion of Cow Creek included in the exchange could include habitat for non-game BLM sensitive fish species such as roundtail chubs, flannelmouth suckers, and bluehead suckers. Threatened, endangered, and proposed species that USFWS has identified as potentially affected by the Proposed Action include bald eagle, black-footed ferret, Canada lynx, Ute-ladies' tresses, mountain plover, blowout penstemon, endangered

Colorado River Fish Species and threatened or endangered Platte River Species. Candidate species that USFWS has identified include black-tailed prairie dog, western boreal toad, yellow-billed cuckoo, and Arctic grayling. The JO Ranch lands include ranch buildings which are eligible for National Historic Site status. The lands have been used for livestock and supplemental hay production and are suitable for or have been used for hunting, camping, hiking, rock hounding, wildlife observation, off-road vehicle use, outdoor photography, and scenic touring. Some oil and gas development has occurred in the area of the JO Ranch lands.

If the exchange is completed as proposed, the JO Ranch lands would no longer be private in-holdings surrounded by public lands. The mineral ownership of the JO Ranch lands would not change. Public access would be ensured. The BLM Rawlins Field Office would change the Great Divide Resource Management Plan, with public input, to address management of these lands. The sand hills habitat area in the northern portion of the JO Ranch lands could be added to the existing Sand Hills Area of Critical Environmental Concern. The BLM would manage the use of the historically significant JO Ranch buildings. The private grazing permittee would lose the existing private grazing agreement, but management of the grazing lands would not change because the private AUMs are currently used to calculate the carrying capacity for the BLM grazing allotments.

The Welch Lands (Figure ES-4) are located in north-central Sheridan County and occupy a portion of the Tongue River valley floor and adjacent dissected uplands. Wildlife species observed or known to frequent the area include antelope, mule deer, white-tailed deer, coyote, fox, pheasant, sharp-tailed grouse, turkey, bald eagle, mountain lion, black bear, bobcat, and elk. This portion of the Tongue River contains small-mouth bass, sauger, walleye, catfish, brown trout, and numerous non-game species. Threatened, endangered, and proposed species that USFWS has identified as potentially present in this area include bald eagle, black-footed ferret, Canada lynx, Ute-ladies-tresses and mountain plover. Candidate species that USFWS has identified include black-tailed prairie dog, western boreal toad, yellow-billed cuckoo, and Arctic grayling. The property has historically been used principally for livestock grazing and crop production. Recreational opportunities include hunting, hiking, biking, photography, and fishing.

There has been no oil and gas exploration or development on these lands, but CBM development is occurring in this area. The Welch lands are underlain by coal, and there is a long history of coal mining in this area. An underground coal fire is currently burning on a portion of the Welch lands. This coal seam fire is probably related to the underground coal fires at the abandoned Acme Mine No. 42. This abandoned underground mine was active from 1911 through 1940 and

its mining operations extended onto the southern part of the Welch lands. The underground coal seam fire occupies approximately 13 acres in the SW $\frac{1}{4}$ of Section 2, T.57N., R.84W. BLM is evaluating several tract configuration options for the Welch lands that would exclude the underground coal fire area from the lands that the federal government would acquire. If the exchange is completed, BLM's Preferred Alternative is to acquire all of the Welch lands that P&M is offering.

A wild fire, the Thunder Child Range Fire, burned 5,207 acres, including portions of the Welch lands, in late July of 2001. The fire originated in the vicinity of the underground coal seam fire in the SW $\frac{1}{4}$ of Section 2, T.57N., R.84W. The cause of the fire is undetermined, but potential causes include a lightning storm and/or the underground coal seam fire.

If the exchange is completed as proposed, the Welch lands would become public lands. The BLM would also acquire about 800 acres of coal estate. The remainder of the coal estate underlying the Welch lands is federal. The rest of the mineral estate underlying the Welch lands, including the oil and gas estate, is privately owned and that mineral ownership would not change if the exchange is completed. The BLM Buffalo Field Office would determine future management with public input, through additional NEPA analysis and planning decisions. Public access would be ensured. Since the Welch lands include a portion of the Tongue River, the property has high

potential for public recreation. The BLM does not plan to change the existing management of the Welch lands. BLM has identified several options for management of the area occupied by the underground coal seam fire, if the exchange is completed. These options range from reclaiming the fire or completely fencing off the coal seam fire area from public access and posting warning signs to managing and monitoring the fire for research or showcasing the area as an example of coal seam burning processes.

The PSO Tract (Figure ES-5) is located in the PRB, a part of the Northern Great Plains that includes most of northeastern Wyoming. The PSO Tract is located in the northwest part of the basin, several miles north of the Welch lands that P&M is offering for exchange (see Figure ES-1). In the PSO Tract, there are two mineable coal seams, referred to as the Dietz 1 and 3 seams. The Dietz 1 coal seam is present in the northern half of the tract and ranges from 5 ft to 20 ft in thickness. The Dietz 3 coal seam is present across the proposed mining area and averages 41 ft in thickness. The overburden ranges from 20 to 275 ft. The interval between the two coal seams thickens from east to west and ranges from 20 to 140 ft. Two northeast-trending structural faults outline the northwest and southeast boundaries of the proposed mining area (see Figure ES-7). Based on recent drilling done by P&M, the Dietz 1 average heating value is 9,279 Btu/lb with 5.8 percent ash and 0.44 percent sulfur. The Dietz

3 average heating value is 9,352 Btu/lb with 5.4 percent ash and 0.53 percent sulfur.

If the exchange is completed as proposed and the PSO Tract is mined, the existing topography on the PSO Tract would be substantially changed during mining. A highwall with a vertical height equal to overburden plus coal thickness would exist in the active pits.

Following reclamation, the average surface elevation would be lower due to removal of the coal. The reclaimed land surface would approximate premining contours and the basic drainage network would be retained, but the reclaimed surface would contain fewer, gentler topographic features. This could contribute to reduced habitat diversity and wildlife carrying capacity on the reclaimed PSO Tract. These topographic changes would not conflict with regional land use, and the postmining topography would adequately support anticipated land use.

The geology from the base of the lowest coal proposed for mining to the land surface would be subject to permanent change on the PSO Tract under the Proposed Action. The replaced overburden would be a relatively homogeneous mixture compared to the premining layered overburden and coal.

Development of other minerals potentially present on the PSO Tract could not occur during mining, but could occur after mining. There are no conventional oil and gas wells on

the tract. CBM resources associated with the Dietz 3 coal seam that are not recovered prior to mining would be vented to the atmosphere and irretrievably lost when the coal is removed. CBM in the Monarch and Carney seams that is not recovered prior to mining would not be lost as a direct result of mining activities, but could be recovered by CBM wells located on lands adjacent to the PSO Tract.

Consequences to soil resources from mining the PSO Tract would include changes in the physical, biological, and chemical properties. Following reclamation, the soils would be unlike premining soils in texture, structure, color, accumulation of clays, organic matter, microbial populations, and chemical composition. The replaced topsoil would be much more uniform in type, thickness, and texture. It would be adequate in quantity and quality to support planned postmining land uses (i.e., wildlife habitat and rangeland).

Moderately adverse short-term impacts to air quality would occur during the time the PSO Tract is mined if the exchange is completed and a mine is opened. PM₁₀ and NO₂ levels would be elevated at dwellings and along roads in the vicinity of the proposed Ash Creek Mine during mining operations, but federal and state primary and secondary standards would not be violated outside the mine-s permit boundary. Dust may be visible to the public from State Highway 338. The WAQSR require the use of BACT for the mitigation of all contaminants released to the

atmosphere. In the case of large surface coal mines, Chapter 6, Section 2 of the WAQSR (and long-term WDEQ/AQD policy) provides that BACT would typically include watering and chemical treatment of haul roads, silos or similar enclosures for out-of-pit coal storage, use of high efficiency baghouses or similar controls on preparation plant process sources, and other best management practices.

One air quality issue of current concern in the area of existing coal mining in Campbell and Converse Counties, Wyoming is the release of NO_x from blasting and the resulting formation of low-lying orange clouds that can be carried outside the mine permit areas by wind. As a result of this concern, industry has conducted monitoring studies of the contents of the gaseous clouds and has cooperated in research on blasting agents and blasting size aimed at reducing emissions during blasting. WDEQ has required some existing mines in Campbell County to take steps designed to mitigate the effect of the gaseous emissions during blasting. The likelihood that there would be a high risk posed to the public or to mine employees by the release of NO₂ from blasting at the proposed Ash Creek Mine is minimal because the proposed Ash Creek Mine would not employ cast blasting and the overburden and interburden strata in the proposed Ash Creek Mine area are not saturated.

The West Branch of Little Youngs Creek lies within the PSO Tract (see Figure ES-6). Little Youngs Creek is

a tributary to Youngs Creek, which is a tributary to the Tongue River. West Branch is an ephemeral stream and a portion of the stream may have some AVF characteristics.

Changes in runoff characteristics and sediment discharges would occur during mining of the PSO Tract, and erosion rates could reach high values on the disturbed areas because of vegetation removal. However, state and federal regulations require that surface runoff from mined lands be treated to meet effluent standards, so sediment would be deposited in ponds or other sediment-control devices. During mining, disruptions to streamflow in Little Youngs and Youngs Creeks, which might affect adjacent landowners downstream of the PSO Tract, would not be expected to be substantial. After mining and reclamation are complete, surface water flow, quality, and sediment discharge would approximate premining conditions.

Mining the PSO Tract would cause lowered water levels in the coal and overburden aquifers, and the existing coal and overburden aquifers would be replaced by mine backfill. The faults bounding the mine area on the northwest and southeast act as barriers to groundwater flow in those directions; and the Dietz 1 and Dietz 3 coal seams are absent to the southwest due to erosion and burning. Therefore, drawdown in the coal aquifers would be expected to extend only to the northeast for any appreciable distance from the mine. The predicted drawdown over

the life of the mine is shown in Figure ES-7. TDS concentration levels in the saturated backfill would initially be expected to be higher than in the pre-mining aquifers, but would be expected to meet the pre-mining Wyoming Class III standards for use as stock water. The data available on hydraulic conductivity suggest that wells completed in the backfill would provide yields greater than or equal to pre-mining coal wells.

Based on preliminary AVF determinations, it is likely that portions of West Branch in the PSO Tract would have AVF characteristics. Impacts to designated jurisdictional AVFs are not permitted if they are determined to be significant to agriculture. AVFs that are not significant to agriculture can be disturbed during mining but must be restored as part of the reclamation process.

Jurisdictional wetlands inventories completed on the PSO Tract in 2001 identified 6.2 acres of jurisdictional wetlands associated primarily with man-made stock ponds. Jurisdictional wetlands that are disturbed by mining must be replaced during the reclamation process.

Mining would progressively remove the native vegetation on the PSO Tract. Reclamation and revegetation of this land would occur contemporaneously with mining. Re-established vegetation would be dominated by species mandated in the reclamation seed mixtures, which are approved by the WDEQ. The majority of these species would

be native to the PSO Tract. Initially, the reclaimed land would be dominated by grassland vegetation which would be less diverse than the premining vegetation. Estimates for the time it would take to restore sagebrush to premining density levels range from 20 to 100 years. An indirect impact associated with this vegetative change would potentially be a decreased big game habitat carrying capacity. However, a diverse, productive, and permanent vegetative cover would be established on the PSO Tract within about 10 years following reclamation, prior to release of the final reclamation bond. The decrease in plant diversity would not seriously affect the potential productivity of the reclaimed areas, and the proposed postmining land uses (wildlife habitat and rangeland) should be achieved even with the changes in vegetation composition and diversity. The reclamation plans for the PSO Tract would also include steps to control invasion by weedy (invasive, nonnative) plant species. Most of the surface of the PSO Tract is privately owned, and the private landowners would have the right to manipulate the vegetation on their lands as they desire once the final reclamation bond is released.

Three big game species, pronghorn, mule deer, and white-tailed deer, occur in the vicinity of the PSO Tract. Black bear and mountain lion have been recorded in the area but are not common. Numerous raptor species have been observed on or adjacent to the tract with two species, red-tailed hawk and great horned owl, recorded as nesting on the tract. An active sage grouse

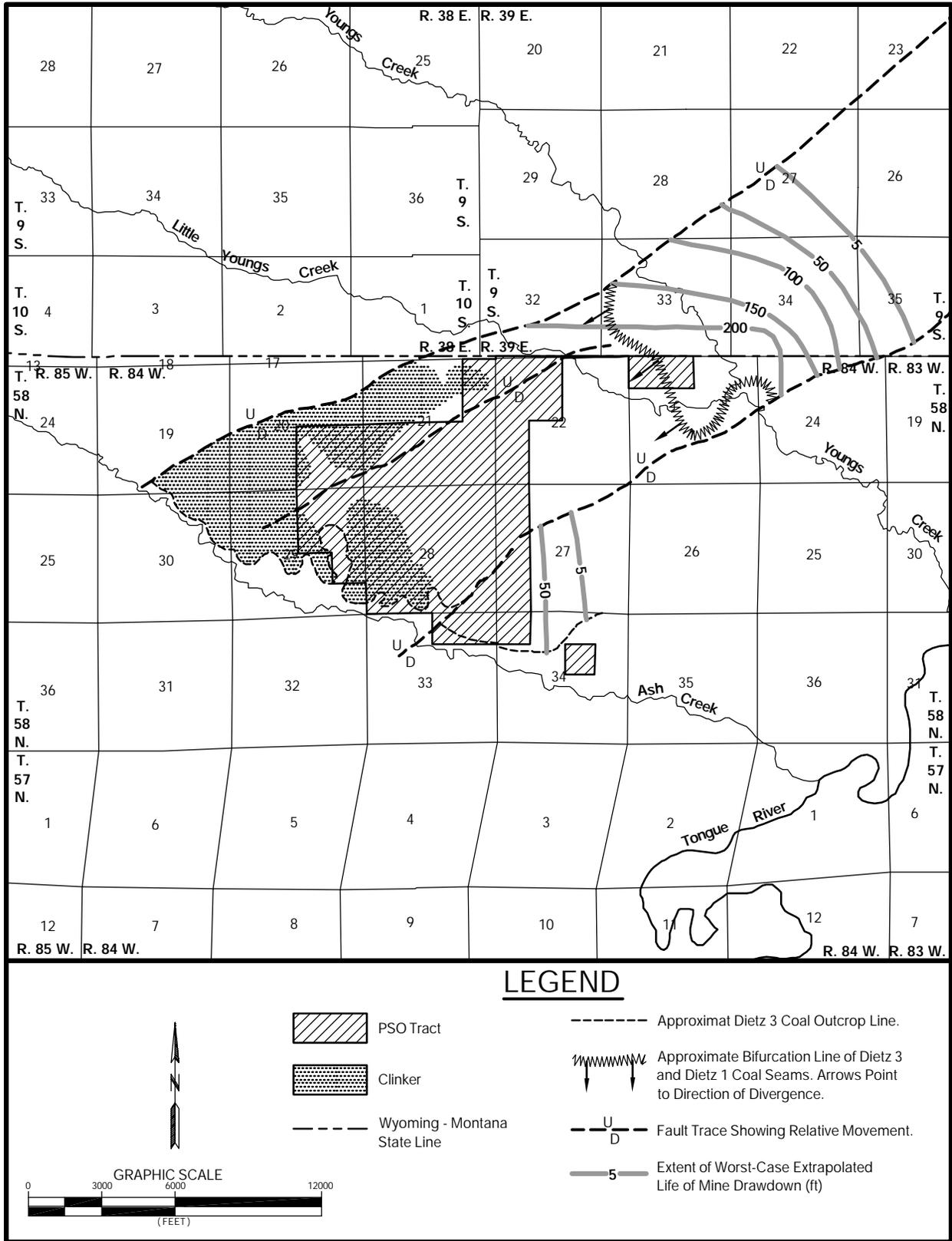


Figure ES-7. Life of Mine Drawdown Map, Resulting from Proposed Action.

strutting ground is present on the tract. Threatened, endangered, and proposed species that the USFWS has identified as potentially present in this area include bald eagle, Canada lynx, black-footed ferret, Ute-ladies-tresses, and mountain plover. Candidate species that USFWS has identified include black-tailed prairie dog, western boreal toad, yellow-billed cuckoo, and Arctic grayling.

In the short term, wildlife would be displaced from the PSO Tract in areas of active mining and the acreage of habitat available for wildlife populations would be reduced. However, the PSO Tract does not contain any unique or crucial big game habitat, and habitat would be disturbed in parcels, with reclamation progressing as new disturbance occurs. In the long term, following reclamation, carrying capacity and habitat diversity may be reduced due to flatter topography, less diverse vegetative cover, and reduction in sagebrush density.

T&E wildlife surveys specific to the PSO Tract were conducted 2000 and 2001. No potential habitat was found on the tract for the Canada lynx. Bald eagles nest along the Tongue River several miles east of the tract and have been observed foraging on the tract. Black-footed ferret, mountain plover, and Ute ladies'-tresses have not been documented on the tract during the surveys that have been conducted. There are several prairie dog colonies on the tract that would be affected by mining.

The principal land use on the PSO tract is domestic grazing and wildlife habitat. Big game hunting is a principal recreational use in this area. Active mining would preclude other land uses. Recreational use of the PSO Tract would be severely limited during mining. However, there is little public surface included in the tract and P&M, the main surface estate owner, does not allow sport hunting on the PSO Tract. Within 10 years after initiation of each reclamation phase, rangeland and wildlife use would return to near premining levels.

Mining would also impact oil and gas development on the tract during active mining. The federal oil and gas rights are leased. There are no active conventional oil and gas wells on the tract. There are three coal seams on the tract that would be expected to produce CBM, the Dietz 3, the Monarch, and the Carney. CBM wells have been drilled or are proposed for drilling. Existing active wells would have to be plugged and abandoned and all associated production equipment would have to be removed prior to mining. New drilling would not be possible in areas of active mining, but could potentially take place in areas not being mined, or in reclaimed areas. CBM that is not recovered from the coal being mined (Dietz 3 coal seam) prior to mining would be vented and irretrievably lost as the coal is removed. CBM that is not recovered from coal seams beneath the coal being mined (Monarch and Carney coal seams) would not be directly affected by coal mining, but CBM in those zones could be covered by

wells located adjacent to the mining activities.

Cultural resources on the PSO Tract would be impacted by mining, but adverse impacts would be mitigated through data recovery and/or avoidance of significant properties. Formal Wyoming SHPO consultation is required for concurrence with determination of the eligibility of sites for inclusion on the NRHP prior to mining. The eligible cultural properties on the PSO Tract which cannot be avoided or which have not already been subjected to data recovery action would be carried forward in the mining and reclamation plan as requiring protective stipulations until a testing, mitigation, or data recovery program is developed in consultation with SHPO. Cultural properties that are not eligible for inclusion on the NRHP can be destroyed by mining.

No sites of Native American religious or cultural importance have been identified on the PSO Tract. The Northern Cheyenne Indian Reservation is located approximately 25 miles north of the PSO Tract, and the Crow Indian Reservation is located less than a mile northwest of the tract in Montana. An executive summary of the cultural resources identified on the PSO Tract has been sent to the Northern Cheyenne and the Crow tribes, as well as other tribes known to have an interest in the region. BLM will work with interested tribes to provide tours of the area and specific resources. If sites or localities are identified at a later date, appropriate action must

be taken to address concerns related to those sites.

No unique or significant paleontological resources have been identified on the PSO Tract, and the likelihood of encountering significant paleontological resources is small.

Mining activities on the PSO Tract would be visible from Wyoming State Highway 338 and adjacent landowners. An overland conveyor proposed for transporting coal to the railroad loadout facility would be visible to adjacent landowners and to the public where the conveyor crests over hilltops. Mining would primarily affect private landscapes classified by BLM as visual resource management (VRM) Class II, and the landscape character would not be significantly changed following reclamation. No unique visual resources have been identified on or near the PSO Tract.

Impacts from noise generated by mining activities on the PSO Tract are not expected to be significant, but nearby residences may be affected by the noises associated with mining the tract, including the proposed overland conveyor. The nearest occupied dwelling is approximately 1,300 ft from the PSO Tract. At that distance, the noise associated with blasting and mining would be below adverse levels.

The only new transportation facilities would be the overland conveyor and coal loadout facilities proposed south of the PSO Tract. P&M has proposed a location for these facilities, however, P&M would

have to negotiate access with the affected surface landowners prior to construction of the conveyor or coal loadout facilities. Any active pipelines and utility lines would have to be relocated in accordance with previous agreements, or agreements would have to be negotiated for their removal or relocation.

The state and federal governments would not receive royalty or bonus payments for the coal if the exchange is completed. At a production rate of 10 million tons per year and a sale price of \$8.00 per ton, the value of annual production at the Ash Creek Mine would be about \$80 million. The mine would employ about 70 people. Sheridan County would see an increase in assessed valuation, property tax revenues, and sales and use tax revenue. The estimated total direct return to the State of Wyoming from the production of coal in the PSO Tract, in current dollars would be \$99 million.

The opening of a surface coal mine would likely have adverse socioeconomic impacts on the adjacent landowners, who would be likely to experience depreciation in their property values as a result of their proximity to a surface coal mining operation and the associated facilities, noise, air quality emissions, traffic, etc.

Lincoln, Carbon, and Sheridan Counties would see a decrease in property tax revenues from the Bridger, JO Ranch, and Welch lands if the exchange is completed. These decreases would be partially offset

by increases in Payments in Lieu of Taxes (PILT) and 25 Percent Funds.

With regard to Environmental Justice issues, it was determined that potentially adverse impacts do not disproportionately affect minorities, low-income groups or Native American tribes or groups. No tribal lands or Native American communities are included in the PSO Tract. The northwest corner of the PSO Tract lies close to the southeast corner of the Crow Indian Reservation.

Under the No Action Alternative, the Bridger, JO Ranch, and Welch lands would remain in private ownership, and could be developed by the private landowner. The mining-related impacts described in the preceding paragraphs to topography and physiology, geology and minerals, soils, air quality, water resources, AVFs, wetlands, vegetation, wildlife, threatened, endangered and candidate species, land use and recreation, cultural resources, Native American concerns, paleontological resources, visual resources, noise, transportation, and socioeconomics would not occur on the PSO Tract.

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

Other projects that are in progress or planned in the Wyoming PRB include current and proposed CBM development; federal coal leasing in Campbell and Converse Counties; construction and operation of NAPG's Two Elk coal-fired power plant east of the Black Thunder Mine; construction and operation of Black Hills Corporations Wygen II coal-fired power plant near the Wyodak Mine east of Gillette, Wyoming; and construction and use of the proposed DM&E rail line across portions of Campbell, Converse, Niobrara, and Weston Counties. With the exception of CBM development, the impacts of completing and operating these projects would not be expected to overlap with the impacts of mining the PSO Tract because the other proposed projects would all be located in the eastern PRB.

Cumulative mineral development in Sheridan County, Wyoming was evaluated in two previously prepared regional EISs. They are:

- *Final Environmental Impact Statement, Powder River Coal Region*, BLM, December 1981; and
- *Draft Environmental Impact Statement, Round II Coal Lease Sale, Powder River Region*, BLM, January 1984.

These regional EISs projected development levels for coal, oil and gas, and other minerals in the PRB in 1990 and 1995. In general, the current actual mineral development levels are at or below the levels predicted in the regional EISs for

1990 and 1995. The 1981 EIS estimated that mines in the Sheridan area (Big Horn, Decker, and Spring Creek) would produce 23.7 million tons of coal per year in 1990 and 1995. Actual 1999 production from those mines was 22 million tons. The levels of production of natural gas are higher than projected in the regional EISs.

Due to the proximity of the coal mining and CBM production operations, cumulative impacts to groundwater, surface water, air quality, and wildlife are likely to occur.

The existing and proposed development in the PRB has and will continue to result in the introduction of additional roads, railroads, power lines, fences, mine structures, and oil and gas production equipment.

A PRB air quality impact assessment was prepared by Argonne National Laboratory as part of the Wyoming *Final EIS and Proposed Plan Amendment for the Powder River Basin Oil and Gas Project* (BLM 2003a) and the Montana *Statewide Final EIS and Proposed Amendment of the Powder River and Billings Resource Management Plans* (BLM 2003b) under the direction of the Wyoming and Montana BLM (Argonne 2002). This analysis was prepared to analyze the potential air quality impacts of the proposed CBM development in the PRB as well as other reasonably foreseeable emission sources in the basin. Coal mining is included as one of the other reasonably foreseeable

emission sources. Coal mining data supplied by BLM for the analysis included estimated coal production volume (based on coal demand forecasts), annual acreage disturbance, and approximate location of mining activity for active mines in Wyoming and Montana during a year of estimated maximum overlapping cumulative development in the basin.

Under the PRB Oil and Gas Project EIS Preferred Alternatives 2A and 1, this analysis predicted:

- Cumulative PM₁₀ 24-hour near-field concentrations above the PSD Class II increment, cumulative near-field concentrations of other pollutants below increments;
- Cumulative NO₂ annual far-field concentrations above the PSD Class I increment in the Northern Cheyenne Reservation, cumulative NO₂ annual far-field concentrations below increments in other areas;
- Cumulative PM₁₀ 24-hour far-field concentrations above the PSD Class I increment in the Northern Cheyenne Reservation and the Washakie Wilderness, cumulative PM₁₀ 24-hour far-field concentrations below increments in other areas; and
- Cumulative visibility impacts in mandatory federal Class I areas ranging from 3 days to 32 days above 1 dV.

There are no predicted cumulative overlapping groundwater impacts related to mining operations in this area if the exchange is completed and the PSO Tract is mined. There is potential for overlapping groundwater impacts from mining the PSO Tract and CBM development in adjacent areas, primarily from CBM development located within the same fault block as the PSO Tract. This could increase the time required for water-level recovery to occur after the CBM and mining projects are completed. Following mining and reclamation, groundwater quality would be expected to be similar to pre-mining quality and to meet Wyoming Class III standards for use as stock water.

Wildlife habitat quality has declined in the PRB due to a continuing trend of landscape fragmentation from roads, rail lines, oil and gas wells, coal mines, and fences. Mining of the PSO Tract would add to this habitat fragmentation. A WGFDD review of mine monitoring data in Wyoming for big game species concluded that the monitoring had demonstrated the lack of impacts to big game on existing mine sites. No severe mine-caused mortalities have occurred and no long-lasting impacts on big game have been noted on existing mine sites. Wildlife mitigation measures required by state and federal regulations include designing fences to permit wildlife passage, raptor proofing transmission poles, reducing vehicle speed limits to minimize mortality, and restoring topography and vegetation to benefit wildlife.

BLM prepared this EIS to evaluate the environmental impacts of completing this exchange in accordance with NEPA, as required under 43 CFR 2200.0-6(h). The BLM will use this analysis in making a public interest determination on whether to exchange coal for the offered lands as required under 43 CFR 2200.0-6(b). After completion of this final EIS, but prior to making a public interest determination and issuing a notice of decision, the BLM will schedule and hold a public meeting to receive public comments on the public interest factors of the proposed exchange, as required under 43 CFR 2203.3. Completion of these steps will meet the requirements under 43 CFR 2201.7(a), which state “Upon completion of all environmental analysis and appropriate documentation, appraisals, and all other supporting studies and requirements to determine if a proposed exchange is in the public interest and in compliance with applicable law and regulations, the authorized officer shall decide whether to approve an exchange proposal.” If the exchange is completed and P&M acquires the federal coal in the PSO Tract, the tract cannot be mined until after a detailed surface mining and reclamation plan is submitted to and approved by WDEQ.