

---

## **EXECUTIVE SUMMARY**

On February 4, 1999, P&M<sup>1</sup> 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 wholly owned subsidiary of Chevron Corporation. 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 5,923 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 2,453 acres are situated within the BTNF and would be administered by the USFS if an exchange is completed. Approximately 633 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 1,236 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 1,600 acres of surface estate and 800 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 acres of land referred to as the PSO Tract in this EIS. Figure ES-5 also shows the lands in Sheridan County where P&M owns the surface. P&M owns the surface of most, but not all, of the PSO Tract. There are 6.41 acres of public land in the tract, comprised of all of Section 15, T.58N., R.84W. The coal beneath this tract is unleased federal coal, for which BLM is the managing agency. If an exchange is completed, BLM would transfer ownership of the coal to P&M.

---

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

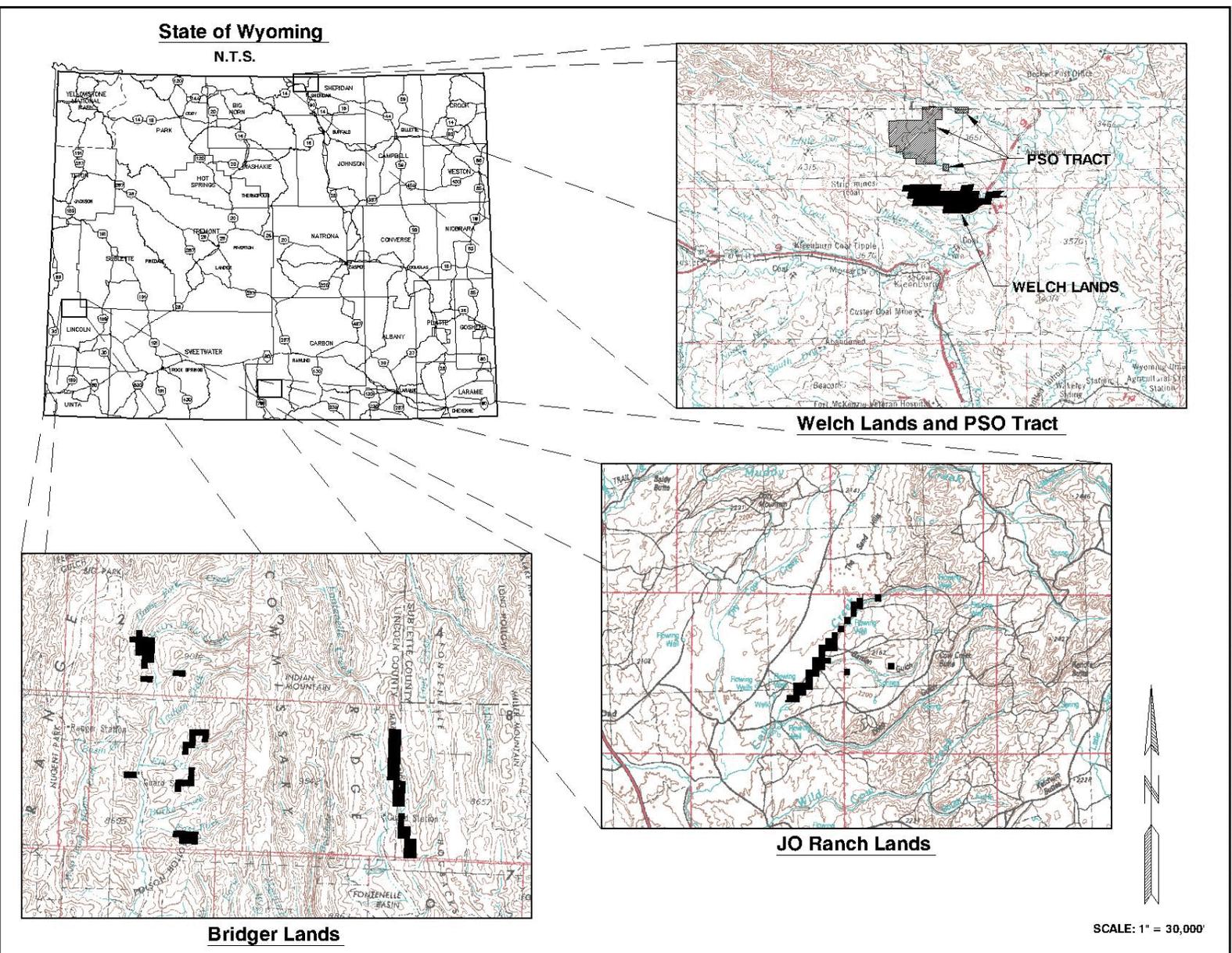


Figure ES-1 General Location Of Lands Being Offered For Exchange By P&M Coal and PSO Tract



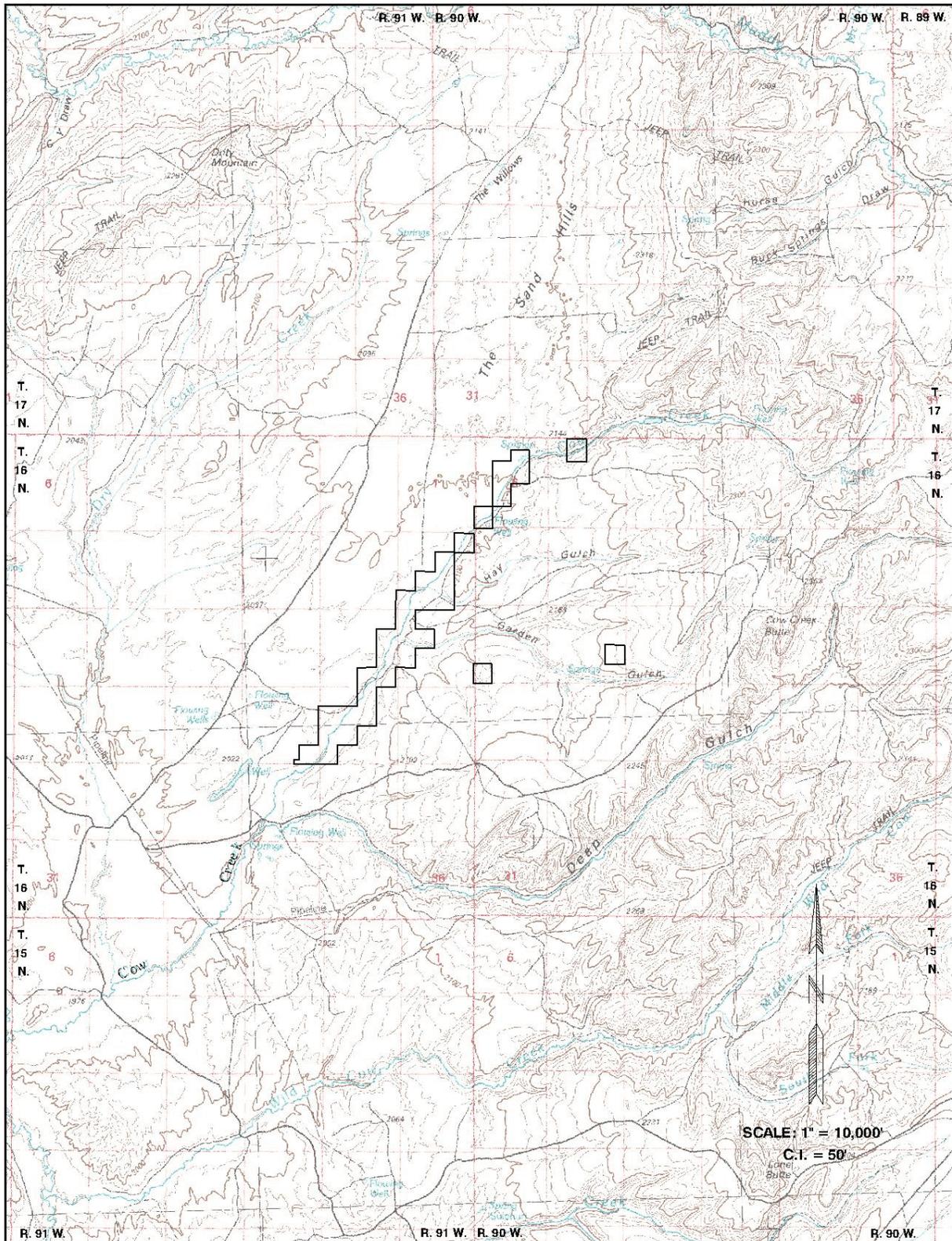


Figure ES-3. JO Ranch Lands Location Map.

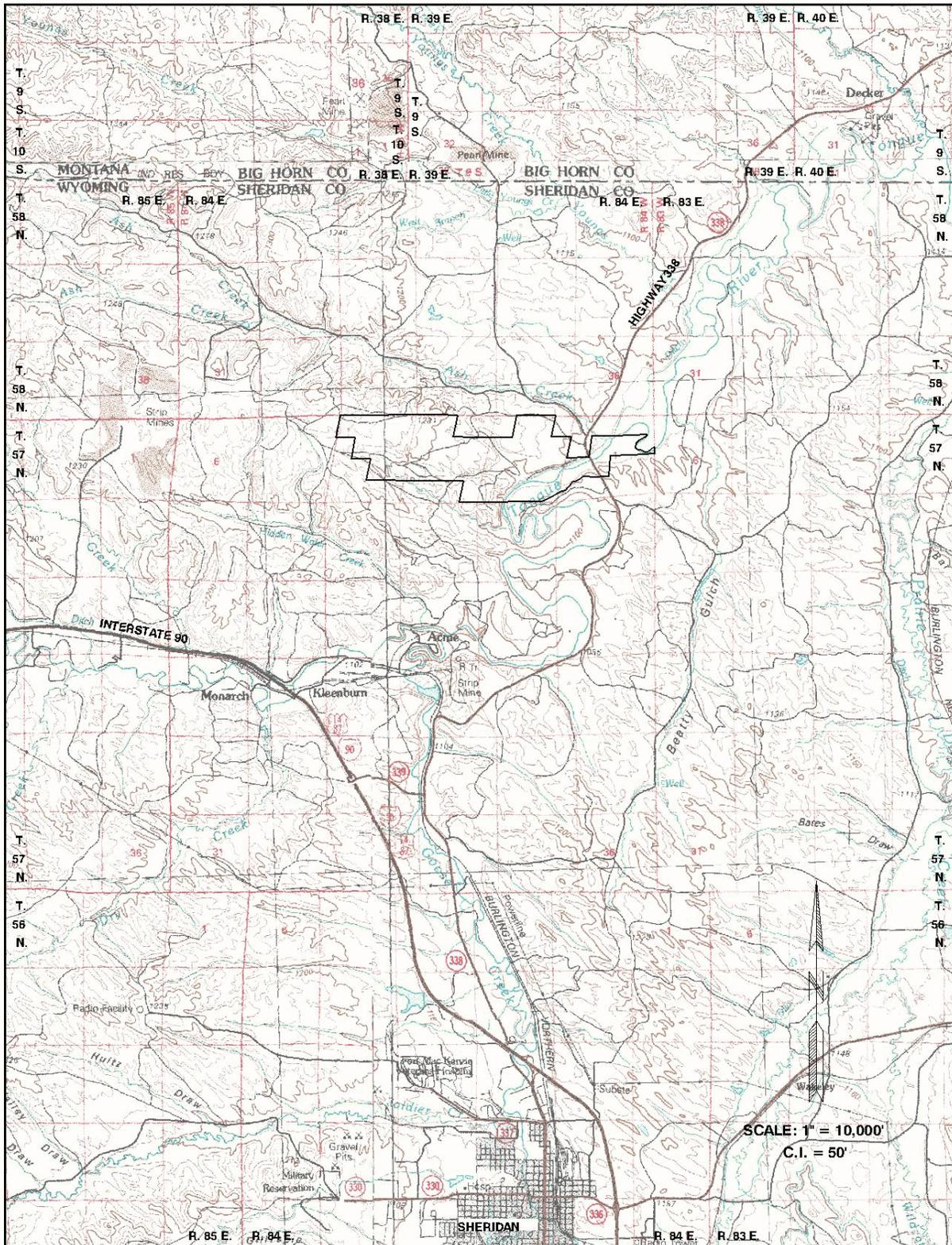


Figure ES-4. Welch Lands Location Map.

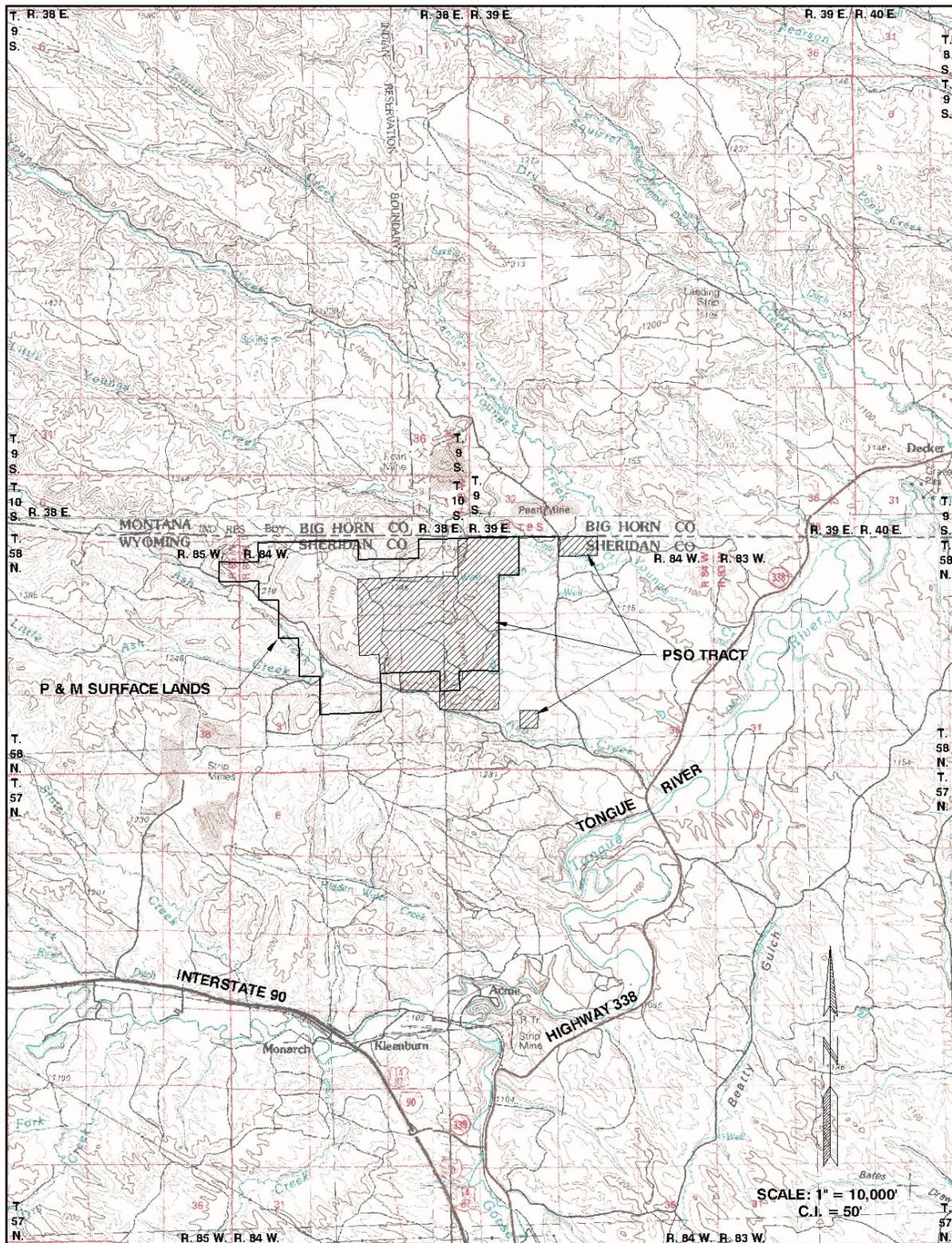


Figure ES-5. Location of P & M Surface Lands and PSO Tract.

The exchange is being processed under the provisions of the Federal Land Transaction 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. The amount of coal that will be offered for exchange will be the amount required to equal the value of the P&M lands being 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.

BLM will use the analysis in this EIS in making a public interest determination, in accordance with 43 CFR 2200.0-6(b), on whether to exchange coal for the offered lands.

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 must complete baseline studies and obtain permit approvals prior to mining. 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 was located several miles south of the PSO Tract, was reclaimed in 2000. Two surface coal mines are currently active north of Sheridan in 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 northwest of the Decker Mine.

This draft EIS analyzes two alternatives:

The Proposed Action 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. As shown in Figure ES-6, P&M proposes to expand into adjacent private coal reserves during the later part of the mine life. P&M proposes to mine the coal with shovel and truck equipment similar to those commonly utilized in the industry at other PRB surface coal mines. An overland conveyor would be used 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

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	1,236.47	0.00	0.00	0.00	0.00
Welch	1,600.41	0.00	800.00	0.00	0.00
<b>TOTAL</b>	5,923.13	3,086.25	800.00	0.00	0.00

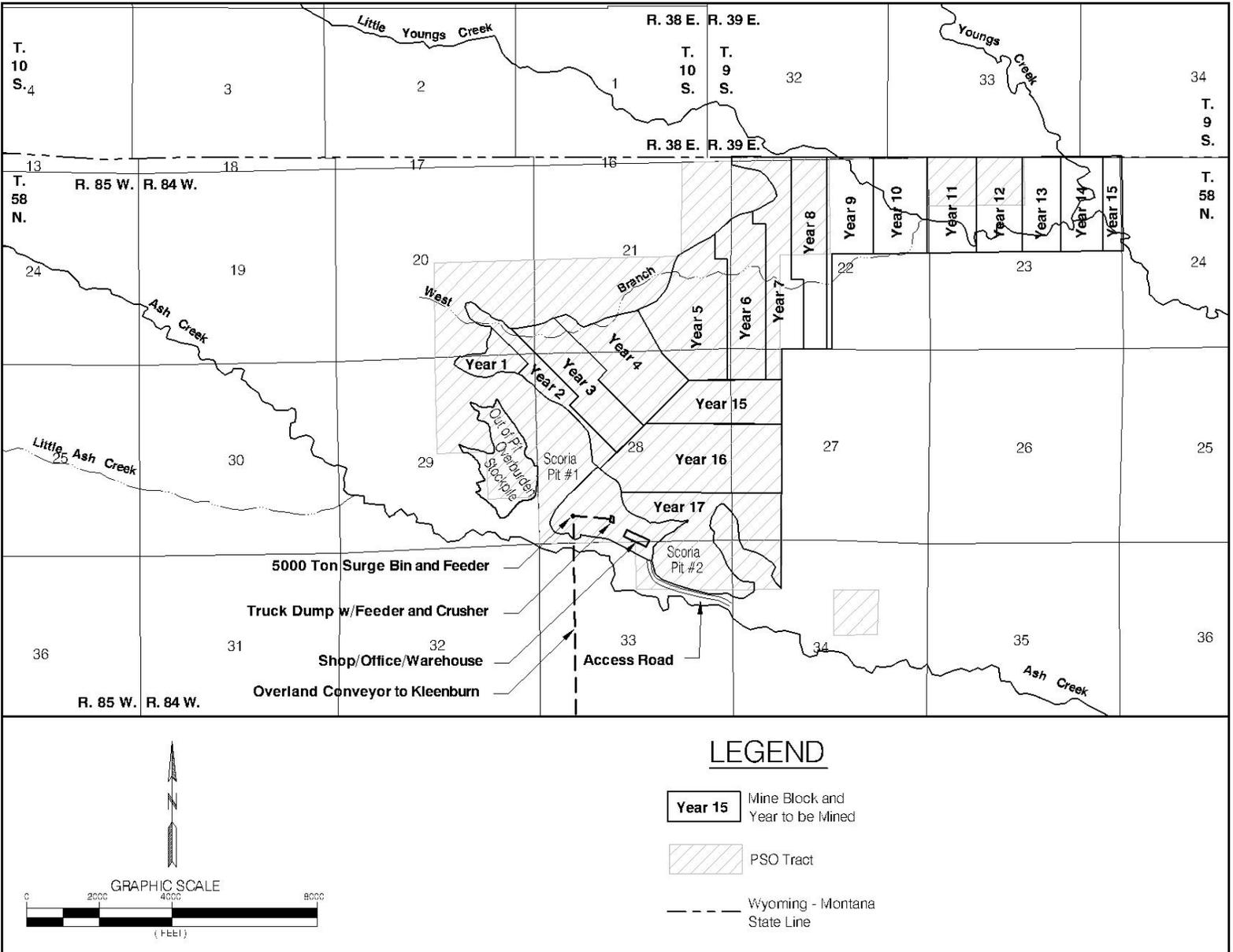


Figure ES-6: Schematic Mine Plan for the Ash Creek Mine.

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 provided information suggesting that they would consider selling these lands on a competitive bid basis. These sales could result in subdivision and rural development of these lands.

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. These alternatives assume that P&M would be willing to sell the offered lands for the appraised value. If they were, BLM does not have funding or a funding mechanism to acquire these lands through purchase. BLM could not lease the coal in the PSO Tract and use the revenue generated from the lease to buy the offered lands without Congressional approval. 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, hazardous or solid wastes, water quality, wetlands/riparian zones, invasive non-native species, environmental justice, and areas of critical environmental concern. Prime or unique farmlands, floodplains, 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 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 lions, and black bear. The streams may be occupied by Colorado River Cutthroat trout. Threatened, endangered, candidate and proposed species that may potentially be present in this area include grizzly bear, bald eagle, Canada lynx, Ute-ladies' tresses, Kendall Warm Springs dace, ponytail chub, black-footed ferret, Colorado pikeminnow, humpback chub, razorback sucker, gray wolf, whooping crane, mountain plover, and black-tailed prairie dog

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

<b>Item</b>	<b>Proposed Action</b>	<b>No Action Alternative</b>
Mineable Federal Coal	112.5 million tons	none
Recoverable Federal Coal	107.0 million tons	none
Area of Federal Coal Exchanged	2,045 acres	none
Area of Federal Coal to be Mined	1,244 acres	none
Total Area to Be Disturbed by coal mining <sup>1</sup>	2,595 acres	none
Average Annual Coal Production	10 million tons	none
Average No. of Employees	70	none
Total Projected State Revenues <sup>2</sup>	\$ 80.25 million	none
Total Projected Annual Revenues to Sheridan County <sup>3</sup>	\$ 6 million	none

<sup>1</sup> Includes disturbance due to mining, overburden stockpiling, construction of surface facilities, scoria mining and related disturbance.

<sup>2</sup> Projected revenue to State of Wyoming is \$0.75 per ton of coal sold and includes income from severance tax, property and production taxes, sales and use taxes, and exclude Wyoming's share of federal royalty payments (University of Wyoming 1994) (refer to Section 4.4.19 of this EIS). Figures are for PSO Tract only.

<sup>3</sup> 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.

(see Appendix C for additional discussion). The tracts 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 8 permittees in the La Barge Common grazing allotment.

The JO Ranch Lands 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 are 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, candidate and proposed species that may potentially be present in this area include Ute-ladies' tresses and mountain plover (see Appendix C for

additional discussion). 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 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, bald eagle, mountain lion, 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, candidate and proposed species that may potentially be present in this area include bald eagle, black-footed ferret, black-tailed prairie dog, Ute-ladies' tresses and mountain plover (see Appendix C for additional discussion). The property has historically been used principally for livestock grazing and crop production. Recreational opportunities include hunting, hiking, biking, photography. 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 in the closed Acme Mine No. 42 was located south of and immediately adjacent to the Welch lands. The previous owners of the Welch lands had obtained a permit to mine coal in a portion of the Welch lands in 1979. They began stripping topsoil and constructed a road, but that disturbance was reclaimed in 1999.

If the exchange is completed as proposed, the Welch lands would become public lands. The BLM would also acquire 800 acres of coal estate, but the rest of the mineral ownership would not change. The BLM Buffalo Field Office would develop an

amendment to their land use plan, with public input, that would address BLM management of the Welch lands. 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, which has protected the natural resources and pristine conditions.

The PSO Tract is located in the Powder River Basin (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 feet to 20 feet in thickness. The Dietz 3 coal seam is present across the proposed mining area and averages 41 feet in thickness. The overburden ranges from 20 to 275 feet. The interval between the two coal seams thickens from east to west and ranges from 20 to 140 feet. Two northeast-trending structural faults outline the northwest and southeast boundaries of the proposed mining area. 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.

The West Branch of Little Youngs Creek lies within the PSO Tract. 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 alluvial valley floor characteristics. Jurisdictional wetland inventories completed on the PSO Tract in 2001 identified an estimated 6.2 acres of jurisdictional wetlands on the tract.

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 strutting ground is present on the tract. Threatened, endangered, candidate and proposed species that may potentially be present in this area include bald eagle, Canada lynx, black-footed ferret, black-tailed prairie dog, Ute-ladies' tresses and mountain plover (see Appendix C for additional discussion).

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, but most of the surface of the PSO Tract is owned by P&M and P&M does not allow sport hunting on the tract. No conventional oil and gas wells have been drilled on the tract, but several CBM wells have been drilled or permitted to drill on the

tract. The development of CBM in Sheridan County (Wyoming) and Big Horn County (Montana) has been affected by uncertainty due to difficulties in disposal of the produced water. There are three potential coal seams on the tract that would be expected to produce CBM. They are the Dietz 3, the Monarch, and the Carney.

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 considerable long-term change on the PSO Tract under the Proposed Action. The replaced overburden would be a relatively homogeneous mixture

compared to the premining layered overburden.

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 from mining activities, but could be drained 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. Total suspended particulate (TSP) concentrations would be elevated in the vicinity of mining operations on the tract, but would not violate

federal or Wyoming primary and secondary standards outside the mine's permit boundary. Dust may be visible to the public from State Highway 338. Concentrations of gaseous emissions would remain within acceptable federal and state standards.

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. 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 are 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. Total dissolved solids levels in the backfill would initially be expected to

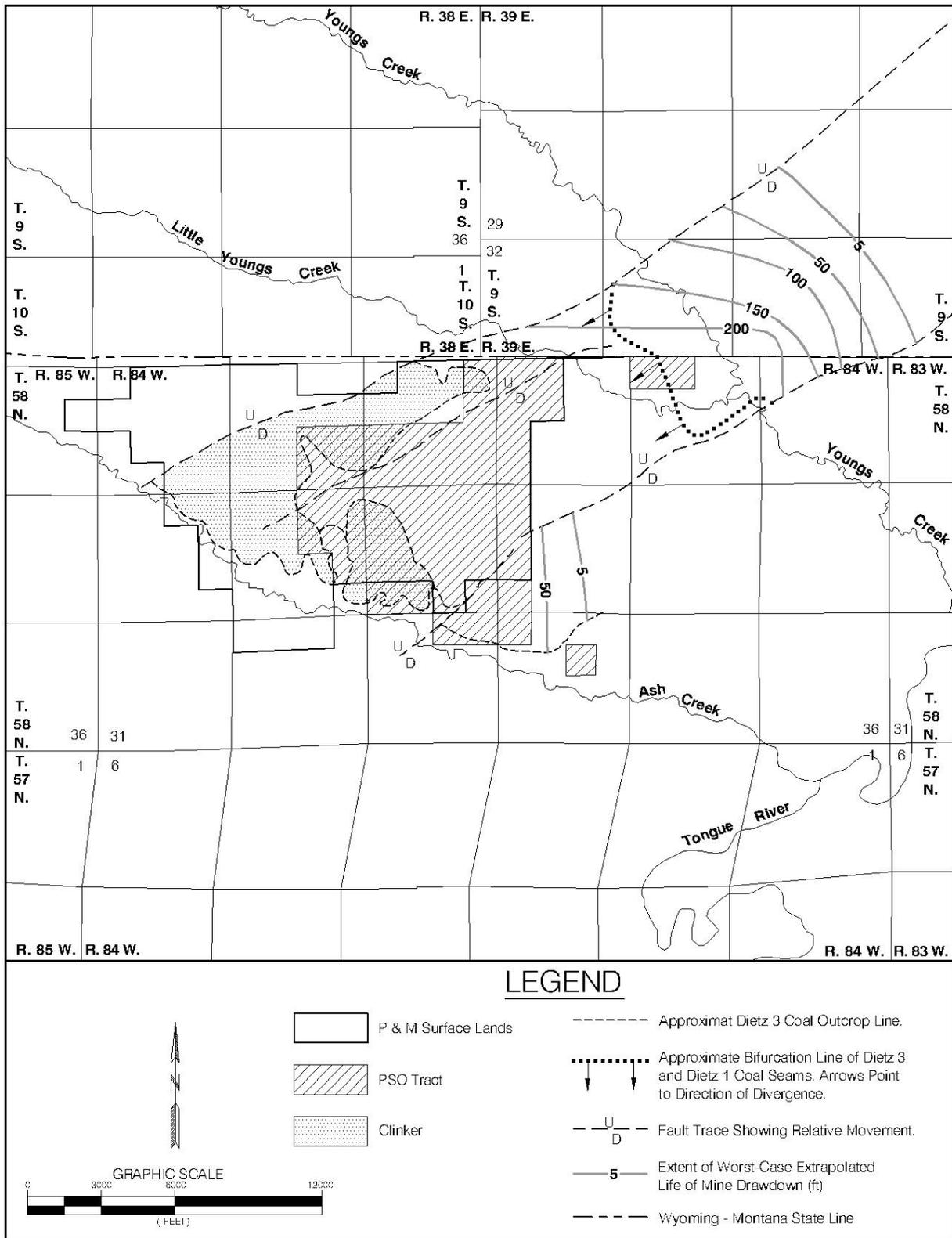


Figure ES-7. Life of Mine Drawdown Map, Resulting from Proposed Action.

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

There are 6.2 acres of jurisdictional wetlands on the PSO Tract. 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.

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. (See Appendix C for additional discussion.)

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. The main private landowner is P&M, who 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. The cumulative impacts of energy development (coal mining, oil and gas) in the PRB are and will continue to contribute to a reduction in hunting opportunities for some animals (pronghorn, mule deer, and sage grouse).

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. CBM wells have been drilled but production has been delayed due

to water disposal issues. 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 drained 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 State Historic Preservation Office (SHPO) consultation is required for concurrence with determination of the eligibility of sites for inclusion on the National Register of Historic Places (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 the SHPO.

No sites of Native American religious or cultural importance have been identified on the PSO Tract. If such 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. An overland conveyor proposed for transporting coal to the railroad loadout facility would be visible 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. The nearest occupied dwelling is approximately 1,300 feet 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. 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.

There would be no royalty or bonus payments for the coal for the federal or state government 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 state would realize revenues from severance taxes.

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 this area. 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 impacts described in the preceding paragraphs to topography and physiology, geology and minerals, soils, air quality, water resources, alluvial valley floors, 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.

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

One issue of current concern in the area of existing coal mining in Campbell and Converse Counties, Wyoming is the release of NO<sub>x</sub> 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 mines to take steps designed to mitigate the effect of

the gaseous emissions during blasting.

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 the North American Power Group's Two Elk and Two Elk Unit 2 Power Plants east of the Black Thunder Mine; construction of Wygen #1 power plant to be located at the Black Hills Corporation energy complex near Gillette, Wyoming; construction and operation by North American Power Group of a 500-megawatt coal fired power plant at the Cordero Rojo Complex; 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:

## *Executive Summary*

---

*Final Environmental Impact Statement, Powder River Coal Region, BLM, December 1981;*

*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 because CBM production levels were not anticipated in the 1990 and 1995 regional EISs.

At this time, the development of CBM in the Tongue River drainage has been delayed by issues related to the quality of the produced water and whether that water should be discharged on the surface. If and when this issue is resolved, the rate of CBM development is likely to increase in the general area of the PSO Tract. 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 as part of the PRB Oil and Gas Project EIS under the direction of the BLM. This analysis was prepared to analyze the potential air quality impacts of the proposed CBM development in the Powder River Basin 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 the years of estimated maximum cumulative activity in the basin.

Potential NO<sub>x</sub> and SO<sub>2</sub> emissions were analyzed in the PRB air quality impact assessment to predict potential impacts at 16 PSD Class I areas located in Wyoming, Montana, North and South Dakota (Argonne 2001). Based on the analysis, all potential direct cumulative NO<sub>2</sub> and SO<sub>2</sub> impacts would be at or below applicable PSD Class I increments. Potential impacts to sensitive lakes identified in the study would be below applicable significance thresholds from the identified emission sources. Visibility impacts were generally predicted to be below assumed threshold limits.

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, which 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. Wildlife monitoring indicates that wildlife are using reclaimed areas in other areas of the PRB.

This EIS presents the BLM's analysis of environmental impacts under authority of the NEPA and associated rules and guidelines. The BLM will use this analysis in making a public interest determination on whether to exchange coal for the offered lands. 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.