Montana State Legislature

Exhibit Number: 9

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General Facts About Coal

distributed throughout the United States, with 46% occurring the Mississippi River and 54% in western states and Alaska. 3% of total U.S. land area, encompassing some 458,000 square ple quantities are found in 38 states; in 31 of them the coal is able, and mining operations currently take place in 25 states.

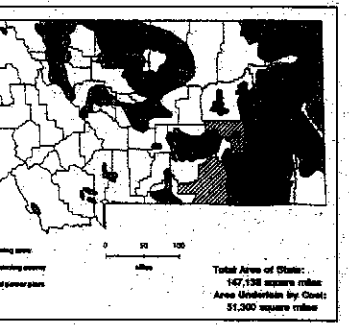
ly flat coal beds at depths of less than 200 feet below the sur- rly suitable for surface mining. Coal beds that dip or lie very surface generally must be extracted through underground min- e Energy Information Administration estimates that about 32% nstrated reserve base can be mined with surface methods, with located west of the Mississippi River. Conversely, 54% of the erve base coal requiring underground mining is located in states ssippi.

S. is mined from about 400 beds or veins, but approximately oduction comes from only about 10 beds. Coal beds are gener- ut may be inclined, folded or faulted as a result of geologic the thickness of the coal beds mined ranges from less than 2 feet, most of the mining is in beds 2-8 feet thick. The average beds mined is a little more than 4 feet in the Appalachian et in the Midwest, and about 30 feet in the West.

Reserve Base (Millions of Tons)	Ranked by Reserve Base	2002 Production (Millions of Tons)	Ranked by Production
119.7	1	37.4	6
105.1	2	33.3	9
68.8	3	373.2	1
35.4	4	150.1	2
32.0	5	124.1	3
28.6	6	68.4	4
23.7	7	21.2	13
16.8	8	35.1	8
13.0	9	45.2	5
12.5	10	28.9	11
9.9	11	35.3	7
9.4	12	30.8	10
6.1	13	1.1	14
6.0	14	.2	15
5.9	15	25.3	12

gy Information Administration

coal-producing states, Montana ranks first in coal resources and y 120 billion tons. The Energy Information Administration estimates those tons are presently recoverable reserves. This includes only e from producing coal mines. At the present rate of mining, approxi- tons per year. Montana could sustain over 35 years of mining from coal. In terms of the coal reserve base, if it all became mineable, the current rate, it would sustain mining for more than 3,000 years.



Surface Mining and Reclamation

Surface coal mining companies are required to reclaim and return mined land to a productive capacity that is equal to or better than before mining occurred.

The reclamation operation takes place concurrently with the mining operation. The first step taken is to remove the top soil from an area to be mined, stockpile it and stabilize it with temporary vegetation to prevent erosion.

The initial removal of overburden (the remaining material covering the coal) is called a box cut and the cavity that is left when the coal is removed will receive the overburden from the second cut. In most cases, a dragline is used to lift over burden from a new section and deposit it in the section that has just been mined. To loosen the overburden for the dragline, it is blasted. The coal is fractured in the same way and then removed by large loaders, deposited in coal haulers and transported to the mine storage and loading facility.

Once the dragline has deposited overburden over the mined-out cavity, bulldozers smooth it out and contour it to blend with the surrounding landscape. This process is much like that employed in construction projects. After that, reclamation becomes very similar to any farming operation. The soil is scarified to guard against erosion, top soil is replaced and the area is planted with seed mixtures that are prescribed by the regulatory agency. In some cases, ponderosa pine and other woody plants are part of the approved reclamation plan. Companies may apply a fiber mulch to further protect against erosion and while fertilizer may be used during the early growing seasons, irrigation has not been necessary.

Before any company is permitted to mine, it is required to post a bond sufficient to cover the cost of reclamation if an operator fails with his reclamation efforts. That bond is not released until successful reclamation is verified. Based on precipitation rates in the West, the law dictates that, in no case, can the bond be released sooner than ten years from the date of seeding.

Royalties

Unlike a tax paid to government on the production of coal or its realized profits, royalties are a monetary payment to the owner of the coal as agreed upon in the terms of pre-mining leases. State and federal government still are major beneficiaries of these payments, however, because a large percentage of the mineral right ownership of coal in Montana has been retained by the federal government, with payments from the coal producing school sections going to the state. In addition, the 1976 federal leasing law mandates that 50 percent of the royalties collected from development of federal leases be returned to the state. Other coal lessors include Indian tribes and private (or fee) owners.

Best Available Figures
Cumulative Royalty Payments from
Montana Surface Mining Operations Through December, 2003

Company	Federal	State	Indian	Private	Total
Big Sky Coal	$ 21,835,151			$ 32,293,872	$ 54,129,023
Decker Coal	313,327,592	$61,676,308		91,437,995	466,441,895
Spring Creek	130,802,149	3,142,299		7,197,228	141,141,676
Western Energy	155,133,328	3,948,959		99,610,441	258,692,728
Westmoreland Resources		4,617,797	$57,133,947		61,751,744
Westmoreland Savage	3,993,253			569,844	4,563,097
	$625,091,473	$73,385,363	$57,133,947	$231,109,380	$986,720,163

Source: Individual Companies

Employment and Payroll

Montana's surface mining industry furnishes some of the highest-paying and most-sought-after jobs in the state.

	Number of Employees	Estimated Payroll
Big Sky Coal Co.	59	$ 3,919,000
Decker Coal Co.	150	7,500,000
Spring Creek Coal Co.	117	10,030,000
Western Energy Co.	320	18,701,000
Westmoreland Resources	96	5,000,000
Westmoreland Savage	12	609,000
	754	$45,759,000

Source: Individual Companies

Production and Value

The following chart shows production for 1994 through 2003. The price per ton at the various sites depends on the quality of coal (heating value, moisture content, sulfur and ash content; etc.) but an average for Calendar Year 2003 was $6.59 per ton making the value of that coal over $243 million. The price is established by the Department of Revenue after three state and two federal taxes are deducted.

Coal Production

Year	Million Tons
1994	41.6
1995	39.5
1996	37.8
1997	40.8
1998	42.6
1999	41.1
2000	38.3
2001	39.2
2002	37.3
2003	37.0

Source: Department of Labor & Industry, Safety Bureau

Coal Mine Safety

Incidence Rates by Industry, Montana,
1996 Nonfatal Occupational Injuries & Illnesses
(Incidence Rate Per 100 Full-Time Workers)

Agriculture, Forestry, Fishing	17.2
Construction	13.4
Manufacturing	12.9
Wholesale Trade	10.3
Retail Trade	8.3
Metal Mining	8.2
Services (i.e., restaurant workers)	8.1
Coal Mining	**4.1**
Finance, Insurance, Real Estate	3.5

Source: Department of Labor & Industry, Safety Bureau

This brochure was prepared by the staff of the Montana Coal Council with the assistance of informational sources quoted. The Montana Coal Council is a trade association whose members are involved in the production of coal in Montana. We support realistic state and national environmental and social standards. The council also recognizes the need for a federal energy policy that will lead to the development of domestic energy sources and reducing this nation's dependence on foreign oil.

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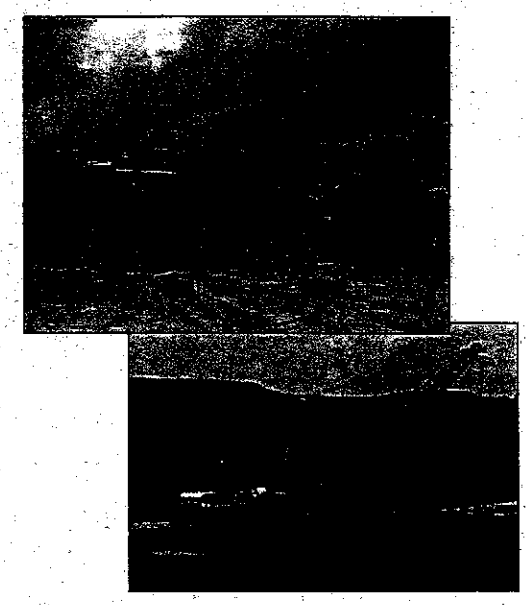


Every ton of Montana coal replaces 3 1/2 barrels of foreign oil.

ce Tax - Prior to 1975, Montana's coal severance tax was assessed basis. In 1975 the Legislature enacted the highest severance tax in on percentage of the mine-mouth price of the coal. The percentage eating quality of the coal - 30 percent for subbituminous and 20 . However, the 1987 Legislature enacted a law to gradually reduce n 5 percent increments over the next few years if a target tonnage of was produced in Fiscal Year 1988. That target was met; and the tax rcent on July 1, 1988; to 20 percent on July 1, 1990; and to 15 1991.

Severance Tax Collections*

Fiscal Year	
1975/76	$ 23,965,000
1976/77	35,906,000
1977/78	34,372,000
1978/79	42,689,000
1979/80	75,125,000
1980/81	70,415,000
1981/82	86,187,000
1982/83	80,045,000
1983/84	82,823,000
1984/85	91,749,000
1985/86	84,217,000
1986/87	76,547,000
1987/88	84,638,000
1988/89	58,566,000
1989/90	67,871,000
1990/91	50,458,000
1991/92	43,434,000
1992/93	38,181,000
1993/94	41,200,000
1994/95	40,416,000
1995/96	36,261,000
1996/97	37,740,000
1997/98	35,045,000
1998/99	36,768,000
1999/00	35,470,000
2000/01	32,337,000
2001/02	31,614,000
2002/03	29,424,000
	$1,483,463,000

ked Fund Allocations 1975/76 through 2002/03

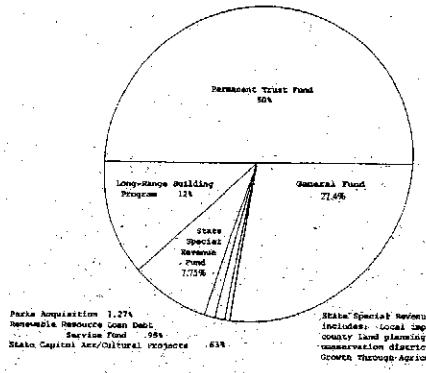
Trust Fund	$674,311,139	
	331,494,737	
enue Fund**	22,269,993	
ding Program	32,370,543	
	90,616,117	
ning	6,119,376	
Trust	22,079,143	
t/Cultural & cts	2,920,843	
mission	4,801,351	
ricts	1,916,714	
nt	4,275,441	
ugh Agriculture	3,207,594	
Debt Service	2,462,399	
ding Program Debt Service	933,565	(ended in FY 99/00)
Develop.	11,169,855	(ended in FY 98/99)
ruction Trust	52,731,221	(ended in FY 94/95)
Parks	1,482,985	(ended in FY 94/95)
Aid to Schools	102,574,928	(ended in FY 94/95)
ic Sites	550,165	(ended in FY 91/92)
und	75,318,623	(ended in FY 89/90)
Research	18,354,255	(ended in FY 88/89)
ty Improvement	15,117,192	(ended in FY 79/80)
	4,737,441	(ended in FY 79/80)
es & Areas	1,647,532	(ended in FY 79/80)
	$1,483,463,152	

Department of Revenue

res do not include coal severance taxes paid since 1988 by sources Inc. on coal owned by the Crow Tribe. WRI pays coal nd gross proceeds taxes directly to the Crow Tribe and not to the or the county.

Revenue Fund includes Local Impacts, County Land Planning, vation Districts and MT Growth Through Agriculture Act. Unspent General Fund.

MONTANA COAL TAX DISTRIBUTION
Source: 15-35-108, MCA
Effective 7-1-03



2. **Net (prior to 1975) and Gross Proceeds Taxes** - These are additional taxes paid on the value of the coal to support county government in the counties where the mines are located. $315,971,636 has been collected by Big Horn, Richland and Rosebud Counties through FY 2002. The figure for FY 2003 is $10,568,037, bringing the total to date to $326,539,673.

Source: Montana Department of Revenue

3. **Resource Indemnity Trust Tax** - As of 1973, all nonrenewable resource producers have been required to pay this tax which is now 0.4 percent of contract sales prices. The total collections from FY 1973/74 through FY 2001/02 were $29,399,027. The FY 2002/03 figure was $963,464 making the total taxes paid $30,362,491.

Source: Montana Department of Revenue

4. **Personal Income Tax** - While it is difficult to determine the amount of personal income tax paid to the state by surface mine employees, we have made a general estimate based on an average gross income of $60,688 per year with two exemptions. Under that formula, the state of Montana would receive more than $2.3 million annually and the actual amount is probably higher. It may be of interest to note that perhaps as many as 50 percent of mine employees who work in Montana and pay its state income tax live in Sheridan County, Wyoming, because it is the closest urban center.

5. **Federal Taxes** - In addition to state taxes, Montana surface mining operations pay a tax for abandoned mine reclamation, mostly abandoned hardrock mines, consisting of 10 percent of the FOB mine price up to a maximum of 10 cents per ton for lignite or 35 cents per ton for all other types of coal.

Also, 4.4 percent of the FOB mine price (less the black lung tax) or 55 cents per ton, whichever is less, is paid to a fund for black lung disease victims, even though this disease is primarily suffered by underground miners.

PM^{10} Emissions (Respirable-Size Particulates)
Comparison Between
Colstrip Units 1-4 and Montana Wildfire

Wildfire puts out over 1,000 pounds of PM^{10} per acre. In the year 2000, 965,000 acres burned in Montana resulting in 482,000 tons of PM^{10} in the air. Colstrip Units 1-4 emit 255 tons/year of PM^{10}. PM^{10} emitted by wildfires in Montana in the year 2000 is equal to 1,892 years of Colstrip Units 1-4.

Sources: North Elkhorns Environmental Assessment, Helena National Forest, & Montana Department of Environmental Quality

Major Holders of U.S. Coal Reserves (billion short tons)

Holder	Estimated Reserves
1. U.S. Government	91.3
2. Great Northern Properties Limited Partnership	20.0
3. Peabody Energy Corp.	9.0
4. CONSOL Energy Inc.	4.2
5. Arch Coal, Inc.	2.9
6. The North American Coal Corp.	2.6
7. Massey Energy Co.	2.2
8. RAG American Coal Holding Inc.	2.0
9. Kennecott Energy Co.	1.9
10. Pocahontas Land Corp. (Norfolk Southern)	1.8
11. Horizon Natural Resources Co.	1.6
12. Natural Resource Partners LP	1.4
13. Westmoreland Coal Co.	1.3
14. BHP Billiton	1.1
15. Murray Energy Corp.	1.1

Source: National Mining Association

15 Largest U.S. Surface Coal Mines, 2002 (million short tons)

Mine Name	State Located	2002 Tonnage	Operating Company
1. North Antelope/Rochelle	WY	75.4	Peabody Energy Subsidiary
2. Black Thunder	WY	65.9	Arch Coal, Inc.
3. Cordero-Rojo	WY	38.2	Kennecott Energy Co.
4. Jacobs Ranch	WY	31.7	Kennecott Energy Co.
5. Antelope	WY	26.8	Kennecott Energy Co.
6. Caballo	WY	26.0	Peabody Energy Subsidiary
7. Eagle Butte	WY	24.9	RAG Coal West, Inc.
8. North Rochelle	WY	23.9	Triton Coal Co., LLC
9. Buckskin	WY	18.3	Triton Coal Co., LLC
10. Belle Ayr	WY	17.5	RAG Coal West, Inc.
11. Freedom	ND	15.7	The Cotean Properties Co.
12. Martin Lake	TX	11.7	Texas Utilities Mining Co.
13. Rosebud	MT	10.1	Western Energy Co.
14. Decker Coal	MT	9.9	Kiewit Mining Group, Inc.
15. Spring Creek	MT	8.9	Kennecott Energy Co.

Source: National Mining Association

Did You Know?

- Coal provides about 55% of the total amount of electricity used in the United States each day.
- Coal mining is one of America's great basic industries, providing $15.5 billion annually in direct economic impact in 1995.
- Since 1970, the electric utility industry has increased its use of coal by nearly 154%, yet since the 1970's total U.S. emissions of sulfur dioxide have declined more than 20%.
- The coal industry routinely reclaims thousands of acres of mined lands each year, returning them to productive use in the ecosystem.
- Coal is actually "buried sunshine," because it originated from prehistoric plants that lived some 300 million years ago.
- Coal accounts for about 95% of America's fossil energy reserves and is larger than either world petroleum or natural gas reserves, when measured in terms of oil equivalency.
- The largest coal producing state is Wyoming with 376.6 million tons of production in 2003.
- Coal provides employment for over 90,000 miners directly, with an additional seven jobs created throughout the economy for each miner's job (electric utilities, transportation, manufacturing, etc.)

Glossary of Coal Terms

Anthracite - Called hard coal, highest rank of economically usable coal. Has a large heating value of 15,000 Btu; carbon content of 86-97%; and moisture content of less than 15%. Used primarily for space heating and generating electricity. Anthracite coal deposits total some 7 billion tons and are located primarily in Pennsylvania.

Btu - British thermal unit. A measure of the energy required to raise the temperature of one pound of water one degree Fahrenheit.

Bituminous - Called soft coal, most common type. Has a heating value of 10,500-15,500 Btu; carbon content of 45-86%; and moisture content usually less than 20%. Mined chiefly in Appalachia and Midwest. Reserves are widely scattered across the country and total some 238 billion tons.

Coal Resources - Total coal deposits, regardless of whether they can now be mined or recovered. The U.S. may have as much as 4 trillion tons of coal resources, according to the U.S. Geological Survey.

Coal Seam - A bed or stratum of coal; usually applied to large deposits of coal.

Coal Washing - The process of separating coal of various sizes, densities and shapes by allowing them to settle in a fluid.

Demonstrated Reserves - Coal deposits which are potentially mineable on an economic basis with existing technology. The U.S. Energy Information Administration estimates that there are about 494.1 billion tons of demonstrated reserves in the U.S.

Fossil Fuel - Any naturally occurring fuel of an organic nature, such as coal, crude oil and natural gas.

Gasification - Any of various processes by which coal is turned into low, medium, or high Btu gases.

Lignite - Brownish-black coal with generally high moisture content and lower heating value (4,000-8,300 Btu). Carbon content of 25-35%; moisture sometimes as high as 45%. Demonstrated reserves of 45 billion tons are mined primarily in Louisiana, Montana, North Dakota and Texas. Mostly used to make electricity at power plants located relatively close to the coal mine.

Liquefaction - Converting coal into synthetic liquid fuel, similar in nature to crude oil and/or refined products such as gasoline.

Magnetohydrodynamics - Also known as MHD. Coal and preheated air are fired in a low-resistance time burner at very high temperatures. Potassium salts are added, producing a gas of high conductivity. The gas is then passed through a magnetic field, producing electricity. This process is still in the research stage.

Mine-Mouth Plant - Commonly a steam-electric plant built close to a coal mine which delivers its electricity output to a distant point by transmission lines.

Recoverable Reserves - The amount of coal that can be recovered from the demonstrated reserve base. The recovery factor for surface mines is about 80-90% and for underground mines about 60%. Using these percentages, there are about 296.5 billion tons of recoverable reserves in the U.S., enough to last more than 250 years at current production levels.

Scrubber - Any of several forms of chemical-physical devices which operate to remove sulfur compounds formed during coal combustion. These devices combine the sulfur in gaseous emissions with another chemical medium to form inert "sludge," which must then be removed for disposal.

Slurry Pipeline - Pipeline for transporting viscous mixture of coal and liquid medium. Only one such line, a 273-mile system from Arizona to Nevada, is currently operating, although several others have been proposed. Water is the medium now is use, but experiments with oil, liquid methane or carbon dioxide show promise of increased efficiency and reduced environmental concerns in areas where water supplies are scarce. These pipelines might also be used for short-haul transport, such as from a port facility to a nearby power plant, reducing or eliminating the need for large stockpiles of coal.

Subbituminous - Dull black coal with heating value ranging between 8,300-11,500 Btu; carbon content, 35-45%; and moisture content, 20-30%. Demonstrated reserves total about 180 billion tons and are located in Montana, Wyoming, Colorado, New Mexico, Washington and Alaska. Primarily used for generating electricity and for space heating.

Tons - A short or net ton is equal to 2,000 pounds; a long ton or British ton is 2,240 pounds; a metric ton is approximately 2,205 pounds.

Unit Train - Long train of 60-150 hopper cars carrying only coal between a mine and a customer. A typical unit train can carry at least 10,000 tons of coal in a single shipment.