1996 Annual Review and Forecast of

UTAH COAL

Production and Distribution

December 1997

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Executive Summary

In 1996, both Utah and the U.S. set new coal production records. It was the third consecutive year that U.S. production exceeded the one billion-ton mark at 1,057 million tons of coal. Utah produced 27.1 million tons of coal for the third consecutive year of increase and an all-time high. The U.S. exported 90 million tons of coal in 1996, an increase of 1 million tons from 1995. Utah exports reached an all-time high of 5.5 million tons, which was 43 percent higher than the previous export record set in 1995. The value of coal produced in Utah passed the half billion-dollar mark in 1996.

In the Mountain West, only Utah and Wyoming increased coal production in 1996. Wyoming's production increase of 14 million tons was the highest tonnage increase in the nation, while Utah's 8.1 percent production increase represented the largest percent increase in the West.

Utah mines distributed 27.8 million tons of coal, exceeding 1995's record year by 2.4 million tons. This distribution surge came from international exports, which increased by 1.7 million tons, and out-of-state electric utilities, which increased by approximately 0.7 million tons. During 1997, Utah's production and distribution should pass the 28 million and 29 million-ton mark, respectively, and set new all-time records.

Utah's coal mines remain the most productive underground mines in the United States. In 1980 and 1981, the productivity of Utah mines was just under two tons per miner-hour (tpmh). Mine productivity has been on the rise ever since, reaching new highs almost every year. In 1996 Utah's mines did not achieve a new record partly because of the start-up and development of Willow Creek mine. However, the industry expects Utah mines to achieve a new record in 1997, although only by a small fraction.

The high productivity of Utah mines is largely credited to excellent management decisions, capable engineering and geological staff, sophisticated mechanization and a highly skilled workforce. These factors, in conjunction with Utah's thick coal seams and favorable geology, have led to more competitive coal prices for Utah's coal mines. This has enhanced and guaranteed the success of the state's coal industry.

Electric utilities consumed the bulk of Utah's coal production. Hunter, Huntington and Carbon Plants of Utah Power, Intermountain Power Agency's (IPA) Intermountain Power Plant (IPP), and Bonanza Plant of Deseret Generation and Transmission Co. purchased 11.923 million tons and consumed 12.159 million tons in 1996. Together these five plants purchased 44 percent of all coal produced in Utah, making the electric utility sector Utah's best coal customer.

In 1996, out-of-state electric utilities and cogeneration plants consumed 7.3 million tons of Utah produced coal. Altogether, electric utilities in the United States consumed 71 percent of the coal produced in Utah. Including exports to the Pacific Rim, electric utilities consumed 91 percent of all the coal produced in Utah.

During 1996 Utah purchased and consumed 1.12 million tons of coking coal from out-of-state. Since Utah ceased production of metallurgical coal in 1994, all coking coal has been purchased from out-of-state mines.

In 1996 industrial coal consumption was Utah's third largest consuming sector. Kennecott consumed 61 percent of the 0.52 million tons of Utah's industrial coal. Various cement and lime plants in Utah consumed the balance. The out-of-state industrial consumption of Utah coal amounted to 2.3 million tons in 1996; key out-of-state consumers were chemical and cement plants in California and cement plants in Nevada. About 0.2 million tons went to the other Mountain States and a small amount to Illinois.

Far behind the industrial sector, residential and commercial customers consumed almost 0.31 million tons of Utah coal.

The Pacific Rim countries of Japan, Korea and Taiwan con-

sumed some 5.47 million tons of Utah coal, primarily for electric power generation. This market is expanding and should account for more than six million tons in 1997.

1996 Utah Coal Production

Utah coal production increased by 8.1 percent over 1995 production. Gross production topped 27,807,000 tons and net production came in at 27,071,000 tons (see Appendix, Tables 1 and 2). This was the highest production level in 127 years of recorded production in the state.

MINER PRODUCTIVITY

The productivity of Utah coal miners rose from 12,595 tons per year in 1995 to 13,034 tons per year in 1996. However, because the number of days worked increased from 225 to 235, coal production per miner per day actually decreased from 55.9 tons to 55.5 tons. This slight decrease in productivity may be because of development work undertaken by Cyprus Plateau at Willow Creek mine.

During 1996, a total of 2,077 miners produced 27,071,000 tons of coal. Working an average of 235 days per year (488,095 miner days), miners produced an average of 6.72 tons per hour (see Appendix, Table 2). This figure is about 3.3 percent lower than 1995's 6.94 tons per hour. (Note: these figures are based on net production.) On the basis of gross production, productivity was much higher.

MAJOR COAL FIELDS

The Wasatch Plateau coal field was again the major coal producer in 1996). More than 87.2 percent of Utah's 1996 coal production (23.6 million tons) came from this field. Book Cliffs accounted for the remaining 12.8 percent or 3.5 million tons. Emery coal field, the only other significant producer in recent years, has not produced any coal since 1992.

During 1997 Wasatch Plateau coal field is expected to produce a record of 24.2 million tons, representing 84.8 percent of total production. In contrast, about 4.3 million tons or 15.2 percent of Utah's coal production is expected to come from Book Cliffs coal field.

For the sixth year in a row, no production is likely from Emery coal field (see Appendix, Table 3).

COAL PRODUCTION BY COUNTY

On a county basis, the majority of Utah's coal production had shifted from Carbon County to Emery County. Sevier County's production remained stable in 1996 and ranks third below Carbon County.

The shift in production from Carbon County to Emery County is due to Skyline mine (now owned by Canyon Fuel) and Starpoint mine (owned by Cypress Plateau) production shifts. These mines shifted production from leases in Carbon County to leases in Emery County. The balance of coal production by county shifted dramatically from Carbon to Emery

Utah Coal Industry Production, Employment, Productivity and Prices

	Production	Employment	Productivity	Prices
	Million Short Tons	No. of Employees	Tons/Miner Hour	$/Ton
1981	13.80	4,166	1.99	26.87
1982	16.91	4,296	2.05	29.42
1983	11.82	2,707	2.59	28.32
1984	12.25	2,525	2.94	29.20
1985	12.83	2,563	2.80	27.69
1986	14.26	2,881	3.08	27.64
1987	16.52	2,650	3.25	25.67
1988	18.16	2,559	3.69	22.85
1989	20.51	2,471	4.42	22.01
1990	22.01	2,791	4.22	21.78
1991	21.87	2,292	4.79	21.56
1992	21.02	2,106	5.13	21.83
1993	21.72	2,161	5.43	21.17
1994	24.44	2,024	6.22	20.07
1995	25.05	1,989	6.94	19.11
1996	27.07	2,077	6.72	18.50
1997	28.56	2,168	7.09	18.32

1997 values are forecast

because these two mines combined account for about 27 percent of total coal production in Utah. The actual shift by both mines started in 1991, became more pronounced in 1992, and almost completed itself in 1993 (Appendix, Table 4). However, Skyline mine production started shifting back to Carbon County in 1994, resulting in more production from Carbon County leases and less from Emery County. Compared to Skyline mine, the Starpoint mine shift was more accelerated. This shift will be even more pronounced from 1997 onwards as Cyprus Plateau moves its coal operation from Starpoint mine to Willow Creek mine, located entirely in Carbon County.

FEDERAL, STATE AND COUNTY LANDS

The volume of coal mined from federal leases during 1996 increased to a record high of 26 million tons. Its contribution as a percentage of total state production also grew because of decreased production from state and county lands. Never before has so much coal been produced from federally owned land on a tonnage basis (26 million tons) or as a percent of total production (96 percent) than in 1996.

From 1980 to 1991 state lands production did not reach the one million-ton mark. However, in 1992 production easily surpassed that mark with a 1,384,000-ton coal production and again in 1993 with a record 1,682,000-ton coal production.

In 1994 production from state lands decreased to 1,227,000 tons, a figure still higher than at any time in the 1980s. During 1995 production from state lands decreased to less than half of the 1994 level. In 1996 it was lower by more than 125,000 tons than in 1995 and totaled 446,000 tons.

As a percentage of total production, state lands production has historically only accounted for between one to five percent from 1983 to 1991, which increased to above six and seven percent in 1992 and 1993; in 1994 it fell back to five percent and in 1995 to 2.3 percent. During 1996 state land production registered the lowest percentage production level since 1988, at 1.6 percent.

Production from county lands has always been minimal and erratic. During 1996 county-owned lands produced 15,000 tons, amounting to 0.06 percent of total production.

FEE LANDS

For the first time in a decade, fee lands coal production slipped below two million tons (1.735 million tons) in 1992. In 1993, production decreased again by 50 percent to 826,000 tons, dropping further in 1994 to 415,000 tons or 1.7 percent of total production. In 1995 production moved up by 11 percent to 461,000 tons or 1.8 percent of total production. During 1996 production from fee lands went up to 2.3 percent of total production. On a tonnage basis, production increased by 33 percent compared to 1995. By contrast, coal produced from fee lands in 1983 amounted to almost 40 percent of total production (see Appendix, Table 5).

LONGWALL PANELS AND CONTINUOUS MINERS

During 1996 eight operating longwall panels accounted for 72 percent of total Utah production or 19,576,000 tons. This amounted to an average of more than 2.45 million tons of coal production per panel, per year. Twenty-five continuous miners produced a total of 7,488,000 tons of coal for an average of 300,000 tons per machine, per year. In recent years including 1996, however, some machines have produced between 400,000 and almost 600,000 tons per year.

Utah Coal Markets: Distribution of Utah Coal

From 1990 to 1993 distribution of Utah coal remained within a one percent range of 21.6 million tons. Between 1993 and 1994 distribution jumped by 6.9 percent. Between 1994 and 1995, distribution increased 8.5 percent. In 1996 distribution was 9.3 percent greater than in 1995.

By tonnage, coal distribution hit an all-time high of 23,441,000 tons in 1994 and set yet another record of 25,443,000 tons in 1995. Distribution in 1996 surpassed these levels with 27,816,000 tons—an increase of more than two million tons over 1995.

Never in the 127 years of Utah's coal industry has so much coal been distributed as in 1996. Distribution of Utah coal to consumers in Utah stood at 12.7 million tons. The distribution to consumers in other states totaled 9.6 million tons, about 0.6 million tons more than in 1995. Overseas exports amounted to 5.5 million tons, about 1.7 million tons above the 1995 export level.

ELECTRIC UTILITY MARKETS

Over two decades ago, electric utility consumption of coal surpassed the consumption levels of industrial coal and coke plant coal. Electric utility consumption became the top market for Utah coal operators. Today more than 71 percent of Utah's coal production is consumed to generate electricity in Utah and other states. Including exports, about 91 percent of Utah's coal production is consumed to generate electricity. This accounts for 88.6 percent of Utah's total coal distribution.

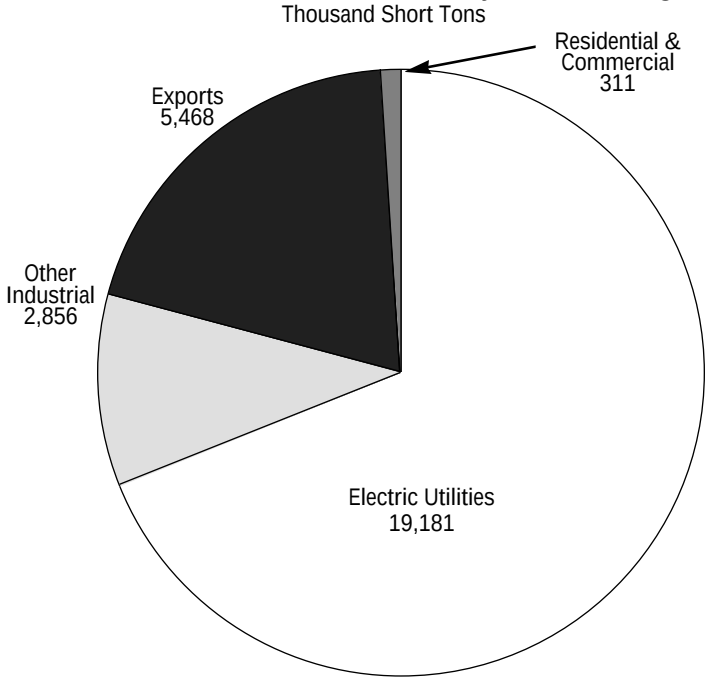
Out-of-State Markets

Distribution of Utah coal to out-of-state markets during 1996 increased by 10.5 percent over the 1995 level. Utah shipped a total of 7.3 million tons; never before has this much coal been sold to out-of-state electric utility/cogeneration customers.

Distribution by State

About 46.2 percent of this shipment went to coal-fired power plants and cogeneration facilities in Nevada and California. Illinois and Tennessee received the lion's share of Utah's electric utility coal to the east. Canyon Fuel, Co-op and White Oak were the major shippers of coal to Illinois while White Oak, Genwal and Canyon Fuel supplied the entirety of the shipment to Tennessee (partly in compliance with the contract detailed in the 1994 coal report). The total shipment to these two states increased by about 41 percent.

1996 Distribution of Utah Coal by Consuming Sector



The only other states to the East that received Utah coal for electric utility use were Kentucky and Wisconsin (see Appendix, Table 6).

Distribution to Nevada

In Nevada, four electric power generation facilities burn bituminous or subituminous coal. Three of these plants, Nevada Power Co.'s Reid Gardner Plant,

Sierra Pacific Power Co.'s North Valmy Plant and the recently completed Pinon Pine Power Plant also burn Utah coal.

In 1996 Reid Gardner Plant, rated at 636 megawatts (MW), purchased a total of 1.606 million tons of coal and burned 1.657 million tons of coal for a net generation of 3,450 gigawatt hours (GWh) of electricity. Approximately 1.312 million tons of this purchase came from Utah with the remaining 0.293 million tons coming from Colorado.

Before 1993 Reid Gardner's four units relied almost entirely on Utah coal. One of Nevada Power's four major contracts with Utah coal producers was with ARCO, which originally supplied the coal from its Gordon Creek mines and, later, from its Trail Mountain mine. In September 1992 ARCO sold Trail Mountain to PacifiCorp but continued to fulfill its contractual obligation to Nevada Power from its stockpile in Utah and through local purchases. However, between 1993 and 1996, ARCO fulfilled the major portion of its obligation from its West Elk mine in Colorado. During 1997 Nevada Power's coal purchase from Utah will decrease slightly; its purchase from Colorado will decrease more than the purchase from Utah.

North Valmy Plant

The two units of the Sierra Pacific Power Co.'s North Valmy Plant (owned jointly with Idaho Power Co.) have a combined generation capacity of 521 MW and require about 1.45 million tons of coal per year. In 1996 Utah coal shipments to North Valmy Plant totaled 1.031 million tons, which represented an increase of 61 percent over 1995. Sierra Pacific purchased an additional 0.18 million tons of coal from Black Butte Coal Co. near Rock Springs, Wyoming.

In 1996 the two units of North Valmy Plant had an average availability of 91 percent and a capacity output factor of 53.5 percent. The units burned 1.166 million tons of coal to generate 2,671 GWh of gross electricity and 2,488 GWh of net electricity. During 1997, this plant is expected to generate about 3,000 GWh of gross electricity or 2,800 GWh of net electricity by consuming 1.3 million tons of coal.

This increase came in spite of the greater availability of hydropower from the Northwest and the increased use of natural gas for electric generation; the coal that the North Valmy Plant purchased from Utah increased by more than 61 percent. However, the plant's Wyoming coal purchase decreased by 48 percent.

Pinon Pine Power Plant

Pinon Pine Power Plant began in September 1991 when nine projects were selected under Clean Coal Technology Programs (CCTP), Round IV. This 107 MW electric generation plant is located at Sierra Pacific Power Co.'s Tracy Station 17 miles east of Reno, Nevada.

The project's main objective is to demonstrate commercial feasibility of a low-Btu gas combustion turbine fed by an air-blown, pressurized, fluidized-bed Integrated Gasification Combined Cycle (IGCC) unit under an environmentally acceptable condition. During August 1992 the DOE and Sierra Pacific Power Co. (SPPC) signed a cooperative agreement to carry out the project. The DOE and SPPC provided the required funding of $308 million on an equal basis.

The core of the project is a fully conventional combined cycle power plant capable of operation on natural gas. The M.W. Kellogg Co. provided the technology for this advanced IGCC. The company used a Kellogg Rust Westinghouse (KRW) version of the World War II vintage coal gasification technology.

The project's Environmental Impact Statement (EIS) was completed on November 8, 1994, and construction began February 1995. In 1996, the power plant was completed and the unit went into commercial operation in December.

The coal gasifier was completed in early 1997. The coal gasifier converts coal into clean burning gas to be consumed in the General Electric combustion turbine. This unit will operate for the next four years as a demonstration unit and the cost of fuel and operation will be shared equally by DOE and SPPC.

The net design efficiency of this unit is about 40.7 percent, which is equivalent to a heat rate of 8,390 Btu/kWh. It is the most efficient coal-based unit in the country. Because the fuel produced by the gasifier is cleaned, the emission of NOx and SO2 is

reduced by over 90 percent.

After this fuel is burned in the gas turbine to generate electricity, the excess heat from the turbine is used to produce steam. The steam is used in a steam turbine generator to generate more electricity.

The unit's advanced design boosts its efficiency by 20 percent over that of conventional power generators, a process which results in 25 percent less CO2 emission for the generation of the same amount of electricity. This unit also uses 20 percent less water to generate the same amount of electricity as conventional generators which makes it a very desirable unit in the arid region of the American West.

The IGCC is designed to consume different grades of coal. On a regular basis, central Utah operators will supply the required coal, which could amount to 320,000 tons per year. At times, however, other coal, specifically high-sulfur coal from the Midwest, may be consumed to evaluate the technology's possible applicability elsewhere in the U.S. or abroad. This unit's flexibility of fuel usage allows it to use natural gas, coal or any combination of the two for maximum fuel cost savings. The unit's other advantage is its ability to generate electricity by consuming only natural gas when the gasifier is down for repair or maintenance.

During 1996 the coal purchased for this unit was minimal and for 1997 it should be about 50,000 tons. As the plant's coal gasifier section comes on line and is tested for its optimal operating level, some Utah coal will be used, but not as the plant's exclusive fuel. It is anticipated that by 1998 coal consumption will be above 200,000 tons per year.

California

More than 1.01 million tons of Utah coal went to cogeneration facilities in California. The electric utility market for Utah coal in California presently includes six coal-fired cogeneration unit.

Stockton, Calif., Plant

Stockton, Calif., is the site of the first coal-fired cogeneration facility ever to burn Utah coal. This unit is operated by Air Products & Chemicals, Inc. and began commercial operation in March 1988. This 49.9 MW unit is capable of consuming 220,000 tons of coal per year to generate about 425 GWh of electricity.

In 1996, this plant purchased 153,000 tons of coal, all of which came from Utah. It consumed the same amount of coal to generate a total of 486 GWh of gross or 438 GWh of net electricity. Some of the electricity and all of the steam by-product were used by an adjacent corn wet milling plant owned by Corn Product Co. International. Pacific Gas and Electric Co. (PG&E) purchased the remainder.

During 1997, this plant will purchase 104,000 tons of coal and is planning to generate 397 GWh of net electricity. Most of this will be sold to PG&E.

Mt. Poso Field-West Plant

In May 1989 a second coal-fired cogeneration facility was commissioned. It is owned by Mt. Poso Cogeneration Co., a consortium of Ahlstrom Development Corp., Pacific Generation Co. and Bechtel Enterprises, Inc. This 49.9 MW plant is located in the San Joaquin Valley and is operated by Pyropacific Operating Co. and Pacific Generation Co..

During 1996 operators purchased and burned 174,000 tons of Utah coal to generate 426 GWh of gross or 376 GWh of net electricity which was sold to PG&E. The operations in the Mt. Poso Field-West used the steam by-product for enhanced oil recovery. During 1997 this unit will consume 12 percent less coal and generate 22 percent less electricity.

ACE Plant

The largest coal-fired cogeneration facility in California, has a 96 MW of installed electric generation capacity. Located in Trona, Calif., the ACE Plant is owned by ACE Cogeneration Co., which is in turn owned by Ahlstrom Development Corp., Constellation Holding, Inc. and Kerr McGee Chemical Co. This unit started operation in September 1990. North American Chemical Co.'s two soda ash plants adjacent to the ACE Plant use the steam by-product. This unit has the capacity to burn 300,000 to 350,000 tons of coal per year to generate between 650 to 750 GWh of electricity.

During 1996 the firm purchased and burned 359,000 tons

of Utah coal to generate 828 GWh of gross electric generation. Southern California Edison Co. purchased the net 753 GWh of electricity. This unit is expected to burn about the same amount of coal during 1997.

Rio Bravo Plant

Ultra Power, Constellation and Hadson are the owners of a twin cogeneration plant in Bakersfield named Rio Bravo Poso and Rio Bravo Jasmin. Construction of this twin plant started on December 1987 and was completed on March 1990. The plant started commercial operation on September 1989 and came online early in 1990.

During 1995 Rio Bravo Poso purchased 73,000 tons of Utah coal. It burned about 80,000 tons to generate 287 GWh of electricity sold to PG&E. The Rio Bravo organization used the steam by-product in its oil field for enhanced oil recovery operations. During 1997 this plant will consume six percent less coal and will generate 5 percent less electricity than in 1996.

Rio Bravo Jasmin purchased 81,000 tons of Utah coal. It burned 75,000 tons to generate 275 GWh of net electricity sold to Southern California Edison. Rio Bravo oil field also used this plant's steam by-product for enhanced oil recovery. During 1997 this plant is expected to purchase and burn slightly less Utah coal, as compared with 1996, and generate close to the same amount of electricity.

Energy Factor Plant

Energy Factor, a cogeneration plant, is located in Stockton. This 45 MW cogeneration plant was first bought by Sithe Energy in 1990 and then sold to a partnership of National Power Co. and ESI in 1993. ESI, a wholly owned subsidiary of Florida Power Co., originally backed only this transaction, but later decided to take a more active role in the plant's daily operation.

This plant is now operating under the name of Port of Stockton District Energy Facility (POSDEF) Power Co. L.P. The steam by-product from this plant goes to three processing facilities within the same industrial complex: California Cedar Products Co., which manufactures cedar wood products including Dura Flame logs; Cargill and Liquid Sugar, both of which import raw sugar from Hawaii and manufacture various food products for human and animal consumption. This cogeneration unit is capable of using about 200,000 tons of coal per year. This company's coal supply contract is with Oxbow Carbon and Minerals, Inc. of Colorado (previously known as Pacific Basin Resources).

During 1996, this company purchased 169,000 tons of coal, all of which came from Utah. This unit consumed 166,000 tons of coal to generate 360 GWh of gross electricity; 312 GWh net generation was sold to PG&E. For the foreseeable future, it is likely Utah will supply all of this unit's required coal.

Shipments of Utah's coal for consumption by electric power plants in Nevada are expected to decrease by 12.8 percent from 1996's total to 2.04 million tons in 1997. During 1993 the amount of Utah coal sold to electric utilities within the U.S. (excluding Utah, Nevada and California, the main users of Utah coal) nearly doubled from 556,000 to 1,087,000 tons. During 1994 this consumption reached 1,710,000 tons, more than 200 percent over 1992 and about 60 percent over 1993 levels. In 1995 this consumption shot up to 3,395,000 tons, which was almost twice that of 1994. In 1996 this consuming sector surpassed 3.9 million tons, an increase of nearly 15 percent over 1995.

States receiving electric utility coal from Utah included: Tennessee (1,902,000 tons); Illinois (1,847,000 tons); Wisconsin (114,000 tons); and Kentucky (43,000 tons). During 1997 this consumption should increase by 3.6 percent from 3,906,000 tons to 4,049,000 tons. In spite of this increase, Utah coal distributed to all other states for electricity generation is expected to decrease from 7.258 million tons in 1996 to 7.024 million tons in 1997.

Utah Markets

Coal consumed in Utah to generate electricity amounted to nearly 12.16 million tons in 1996—a level which fell below expectations. Utah coal shipped to electric utility plants in this state was 11.92 million tons.

Hunter Plants

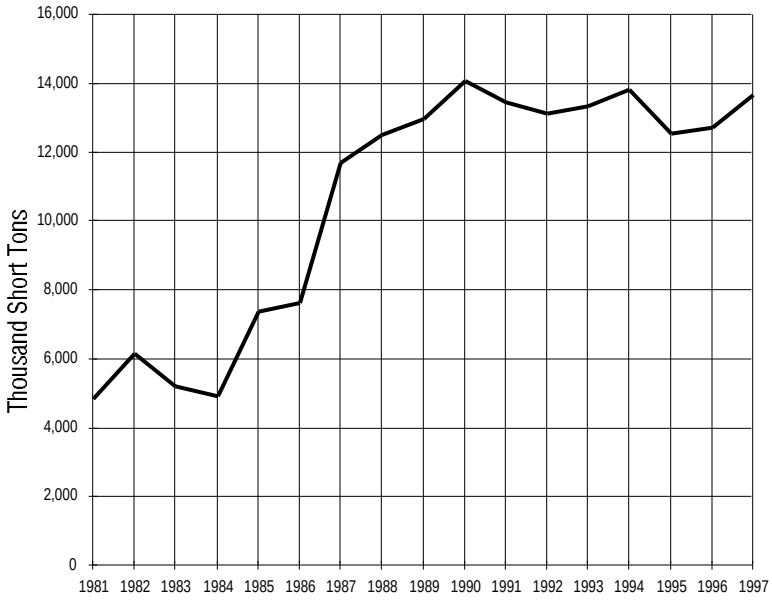
PacifiCorp's Hunter I, II and III, with availability of 93.86 percent and utilized availability of 93.93 percent, consumed 4.189 million tons of coal to generate 9,246 GWh of electricity. The

coal came mostly from PacifiCorp's Cottonwood mine and some from Deer Creek mine. During 1997, this plant should be working at about four percent less availability, but four percent more utilized availability than in 1996. This will result in slightly more coal burned and electricity generated.

Carbon Plant

Carbon Plant, with availability of 94.89 percent and utilized availability of 96.75 percent, consumed more than 657,000 tons of coal to generate 1,411 GWh of electricity. The coal for this plant was mostly produced by Deer Creek mine of PacifiCorp; some was purchased from other coal operators.

Distribution of Coal to Utah Electric Utilities



1997 values are forecast

Huntington Plants

Huntington I and II, with plant availability of about 88.7 percent and utilized availability of 97.35 percent, consumed 2.905 million tons of coal to generate 6,409 GWh of electricity. The coal came from PacifiCorp's Deer Creek mine. During 1997 this plant should be working at 85.7 percent availability and 100 percent utilized availability. This will result in three percent less coal burn and slightly higher electricity generation.

It is very likely that the capacity factor for PacifiCorp's three plants could be slightly higher in 1997 than in 1996, and coal consumption could increase from 7.751 to 7.808 million tons. PacifiCorp may increase its stockpiles. As a result, 1997 coal production for distribution to Utah electric utilities is likely to increase much more than consumption.

IPP Plant

In 1996 the Intermountain Power Plant (IPP) of Intermountain Power Agency (IPA), with availability of 87.23 percent, operated at utilized availability of 78 percent. The plant's two units, with the total nameplate capacity of 1,640 MW, burned 4 million tons of coal to generate 9,765 GWh. States primarily outside of Utah consumed the generated electricity. During 1997, this plant will burn approximately 5.2 million tons of Utah coal to generate 12,660 GWh of electricity, nearly all of which will be sold outside of Utah. The higher availability of hydropower in the Northwest caused a decrease in coal burned at IPP during the spring and summer of 1996.

Bonanza Plant

During 1996 Deseret Generation and Transmission's (DG&T) Bonanza Plant with a rated peak capacity of 420 MW, had an availability of 98.1 percent and a capacity factor of 70.2 percent. This plant consumed 1.322 million tons of Colorado and Utah coal to generate 2,582 GWh of electricity. Of this total, 1,188 GWh or 46 percent was sold outside of the state.

DG&T purchased 530,500 tons of coal from the Deserado mine, located just 36 miles east of the plant in Colorado. Out of the remaining 791,300 tons, 517,200 tons were purchased from Utah mines and 274,100 tons from other Colorado mines. The total coal purchased in 1996 was 1.3 million tons.

During 1997 the availability is expected to decrease to 88 percent. The capacity factor should increase to 85 percent

and coal consumed will equal 1.495 million tons. This will result in 3,138 GWh of electricity generation. Of this total, 36.8 percent or 1,155 GWh will be sold outside Utah.

UTAH COKING COAL MARKETS

The market for coking coal in Utah is limited to Geneva Steel Mill in Orem, Utah, owned by Basic Manufacturing and Technology of Utah, Inc. Geneva Steel is the only integrated steel mill operating west of the Mississippi River. The company acquired the steel mill and related facilities in a leveraged buy out from USX Corp. in August 1987. Located in Orem, 45 miles south of Salt Lake City, the firm manufactures hot-rolled steel plate, sheet and pipe for markets primarily in the western and central United States.

Geneva's customers include service centers, distributors, steel processors and various end users which include: manufacturers of welded tubing, highway guardrail, storage tanks, railcars, ships and agricultural and industrial equipment.

To enhance its competitive position, Geneva is undergoing an extensive modernization program. The program includes reducing operating costs, expanding product lines, improving quality and significantly increasing throughput capacity. With these improvements in place, Geneva Steel will strengthen its position as a low-cost steel producer while becoming one of the industry's more environmentally advanced steel mills.

Coal purchased by Geneva Works to make coke totaled 1.12 million tons during 1996. The plant consumed about the same amount of coal to make coke for steel production.

As the coke-making battery of Geneva Works ages, its capacity decreases, thus limiting the plant's steel-making capacity. To overcome this constraint in 1996, Geneva directly purchased 423,000 tons of coke (49,000 tons from Japan and 374,000 tons from China) in addition to its own manufactured supply, to produce about 2.4 million tons of steel. To meet its requirement of low- to mid-volatile hard coking coal, Geneva Works has negotiated a long-term contract with eastern producers and a five-year, 500,000 ton-per-year transportation contract with Southern Pacific railroad, now part of Union Pacific railroad.

During 1996 Geneva bought 230,000 tons of low-volatile Pennsylvania coking coal from Cooney Brothers Coal Co. of Cresson, Pennsylvania. In addition, Geneva bought 405,000 tons of high-volatile Colorado coking coal from San Born Creek mine of Oxbow Carbon and Mineral, Inc., (previously known as Pacific Basin Resources) of Littleton, Colo. This coal is from the same seam as the coal Geneva purchased from Bear Coal Co., Inc. of Somerset, Colorado during early 1990s.

Geneva also bought 27,000 tons of mid-volatile coal from United Coal Co. of Bristol, Virginia, mostly from Lady H mine. The mine is situated just east of Quinwood which is on highway 39 about 35 miles northeast of Beckley in Greenbrier County in southwestern West Virginia. Geneva also purchased and consumed 331,000 tons of coal from Wellmore Coal Co. of Virginia, situated just east of Grundy which is on the north end of highway 460 in Buchanan County in the toe of Virginia about 10 miles from the Kentucky border. Furthermore, Geneva purchased 78,000 tons of high-quality West Virginia coking coal from Commonwealth Coal Co.'s War Eagle mine, situated just west of Balt which is on county road 99 about 15 miles due west from Beckley in the southwestern part of West Virginia. Geneva also received one trainload (about 9,000 tons) of mid-volatile Virginia coking coal from Knox Creek Coal Co. situated just west of Richlands, which is on highway 460 and 19 in Russell County in the toe of Virginia near Graceland railroad station. Geneva bought 40,000 tons of mid-volatile West Virginia coking coal from J.B. Harris mine also situated just east of Quinwood which is on highway 39 about 32 miles northeast of Beckley in Greenbrier County in southwestern West Virginia. During 1997 Geneva will purchase a similar amount of coal as in 1996 and about the same amount of coke.

OTHER INDUSTRIAL COAL MARKETS

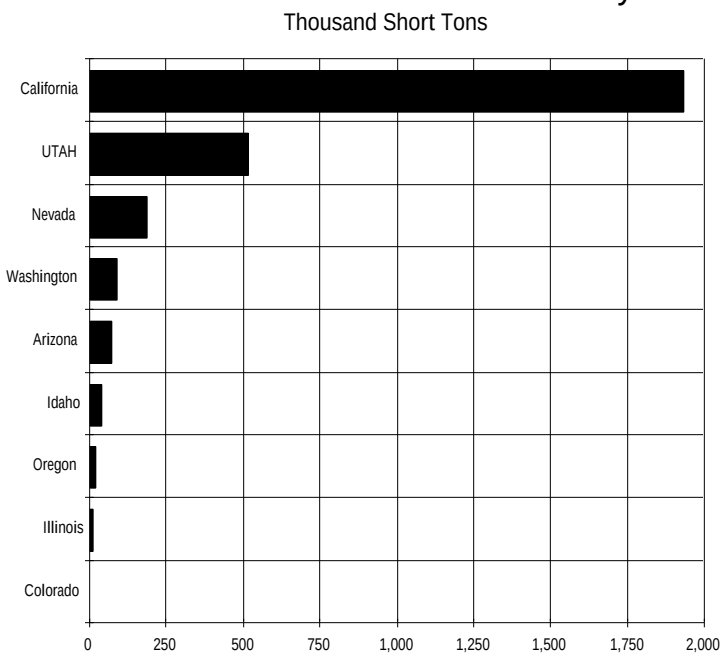
Out-of-state Markets

Since 1989 when shipments

of Utah coal to other states for industrial consumption peaked at 2.4 million tons, consumption for this market sector has been fluctuating. It reached only 2 million tons in 1992. During 1993 shipments increased for the first time in four years and in 1994 this trend continued as six operators shipped 2.32 million tons of industrial coal to ten states outside Utah. In 1995 there was a slight increase to 2.4 million tons but in 1996 this consumption decreased slightly to 2.34 million tons.

The largest recipient of industrial coal was California. More than 82 percent of all industrial coal from Utah went to chemical and cement manufacturing plants in the Golden State. Nevada received 183,000 tons for use mainly in cement plants. This consumption was 11 percent less than the 205,000 tons consumed in Nevada the previous year.

Shipments to Washington amounted to 87,000 tons. Arizona shipments ranked fourth with 69,000 tons followed by Idaho which purchased 38,000 tons. Oregon purchased 17,000 tons followed by Illinois (11,000 tons) and Colorado (1,000 tons). In 1997 industrial consumption should increase to 2.6 million tons.



Utah Markets

In 1996 industrial consumption of coal in Utah decreased by 19.5 percent. In tonnage, consumption fell from 642,000 tons in 1995 to 517,000 tons in 1996.

Kennecott Copper

Kennecott Copper used more than one half of the total to generate electricity. During 1996, Kennecott purchased 316,000 tons of Utah coal and consumed the same amount during an eight-month period to generate 752 GWh of electricity. During the other four months, Kennecott consumed a little more than 765 million-cubic feet of natural gas to generate 60 GWh of electricity. The coal purchase in 1996 decreased by nearly 20 percent in comparison with the previous year's figure.

In 1997, Kennecott's coal-fired generation will jump 39 percent and the natural gas generation will be reduced to three quarters of the previous year. Total coal consumption will amount to 440,000 tons and natural gas consumption will be reduced to 0.49 billion cubic feet.

Cement Manufacturers

Prior to 1995 Utah's cement manufacturers foresaw increased demand because of the growth of the housing industry. They began to expand their cement production capacity. Production capacity also increased due to the I-15 reconstruction project and various other state and county road expansions. Both Holnam and Ashgrove started to increase production before 1996. By 1997 they were producing considerably more cement.

Holnam

Devil's Slide Plant of Ideal Basic Industries, Inc., a leading cement producer based in Denver, Colorado, has been a part of Holnam since 1986. A series of mergers and acquisitions established Holnam, Inc., as one of the largest cement companies in North America. Dundee Cement

Co., Santee Cement Co., Northwestern States Portland Cement Co., Ideal Basic Industries and United Cement Co. have all been brought together under the Holnam banner. Holderbank controls 89.3 percent of Holnam's common stock. In the consolidation process Holderbank's share in St. Lawrence cement was brought into Holnam, which now holds a 60 percent interest in St. Lawrence.

In 1986 Holderbank acquired a 66 percent interest in Ideal Basic Industries, Inc., which had encountered some financial difficulties and required financial restructuring. The nine-plant Ideal Basic system fit in well with the Dundee Cement Co. system, offering new markets to the West, Southwest, and Mid-Central regions of the United States. The whole establishment, comprised of 19 cement plants and 113 distribution terminals in most U.S. states and three provinces of Canada, is now referred to as Holnam.

Devil's Slide Plant switched from Wyoming coal to natural gas in 1991 and continued to burn natural gas until August 1992. In that year, the price of natural gas increased and coal consumption became more economical. During the remainder of 1992, Devil's Slide Plant used 27,000 tons of coal. A significant event occurred when this plant converted from natural gas to coal; it did not automatically switch to Wyoming coal as it had in the past but, instead, started using Utah coal.

During 1993 Devil's Slide Plant purchased 60,000 tons of coal, 40,000 tons of which came from Utah and the remainder from Wyoming. In 1994 the plant's purchase of Utah coal increased to 59,000 tons; the plant purchased only 4,000 tons of additional coal from Wyoming. By 1995 the plant purchased only Utah coal (25,000 tons). The plant used 30,600 tons of coal in total. Some of this coal came from the stockpile and was used with natural gas for summer use and treaded tires and diaper plastics (materials obtained from the Kimberly Clarke plant in Ogden) to produce 351,000 tons of cement. In 1996 this plant purchased and consumed 29,000 tons of Utah coal plus some natural gas, tires from Salt Lake Treading Co., and diaper plastics from Kimberly Clarke to produce 350,000 tons of cement.

For 1997 the operators plan to change over to a new 5-stage preheater kiln, which is a dry process and is much more energy efficient. Even though the cement production may increase to twice the previous production, the coal burn is not expected to increase beyond 70,000 tons, versus the 60,000 tons in 1993. The new plant will also burn treaded tires, diapers and related materials.

Ashgrove Cement

During 1996 Ashgrove Cement expanded operations to increase clinker production by 20 to 25 percent. The project actually started in 1995 and was completed in early fourth quarter of 1996. Incorporation of the project into the operation took place in May and June of 1996 when the total clinker producing operation shut down. During the remainder of 1996 and early 1997 Ashgrove solved the expansion problems. However, the production did not reach the intended target until June 1997 when Ashgrove decided to increase the capacity of the main fan. Ashgrove also added a 30,000-ton cement silo for more storage capacity.

During 1996 Ashgrove's coal consumption decreased by about 7 percent to 76,000 tons, due to a 4 percent decrease in cement production. The economic benefits of consuming waste oil and treaded tires diminished as the price per Btu of waste oil and tires approached that of coal. As a result, in 1996 Ashgrove did not use these substitutes. During 1997 Ashgrove may increase coal consumption by 25 percent because of a similar increase in cement production.

Gypsum and lime plant operators consumed nearly 96,000 tons of coal. Industrial coal consumption in Utah should increase by about 33 percent from 517,000 tons in 1996 to about 688,000 tons in 1997.

RESIDENTIAL AND COMMERCIAL COAL MARKETS

Out-of-State Markets

Since the mid-1980s when consumption stabilized at about 300,000 tons per year, demand for residential and commercial coal has been on the decline. By 1990 it stood at only 59,000 tons, its lowest level. In 1991 sales to the residential and commercial

sector increased to 76,000 tons and in 1992 to 81,000 tons. During 1993 out-of-state consumption jumped by 63 percent to 134,000 tons; by 1994 this sector consumed 308,000 tons.

This unusual increase was due mainly to consumption of 193,000 tons by Illinois, which did not buy any Utah coal in 1995. As a result out-of-state consumption decreased to 68,000 tons in 1995. During 1996 this sector further decreased to 51,000 tons, its lowest ever.

Idaho and Washington bought larger quantities. In contrast, Colorado, Nevada and California purchased relatively small amounts (see Appendix, Table 6). Residential and commercial sector consumption in these states will probably increase in the short-term, though with some fluctuations. For 1997 an increase of more than 100 percent is very likely.

Utah Markets

During 1996 residential and commercial coal consumption in Utah increased by 43 percent to 260,000 tons. This level of consumption was one of the highest in the past 15 years. Only between 1989 and 1992 was there more consumption in this sector. In some rural counties such as Emery, Wayne, Millard, Juab, Sanpete, Sevier and Carbon the number of homes using coal for heating is between 15 to 20 percent.

In comparison, the urban Wasatch Front counties of Salt Lake, Utah, Weber and Davis consume very little coal for home heating. Commercial consumption of coal for space heating in Davis, Weber and Salt Lake counties is also low.

Two elements affect residential and commercial sector's consumption: environmental standards set by various air quality control agencies and the cost of fuel. When the price of natural gas is low there is a strong tendency on the part of the residential and commercial sector to consume more natural gas. But as the price of natural gas increases, the less expensive coal becomes more attractive in spite of environmental considerations. Utah coal producers might not see an increase in consumption of Utah coal by residential and commercial markets unless the price of natural gas increases again. For 1997 coal consumption may fall within Utah, but could increase in states outside of Utah. This would result in slightly higher total consumption than in 1996.

COAL IMPORTS

Utah imports coal for coking applications and a coal-fired power generation plant in Uintah County. There are no imports bound for the industrial, residential or commercial sectors. In 1996, companies operating in Utah imported 1.925 million tons of coal.

Utah previously imported low- to mid-volatile hard coking coal to mix with its own high-volatile coking coal for Geneva Steel Mill. Since February of 1994, when the coal supply contract between Geneva and Sunnyside Reclamation and Salvage Co. expired, Utah has relied entirely on out-of-state coking coal and coke for steel production. This accounts for the major increase in imported coal to Utah.

Imports of industrial coal to Utah were used primarily at Devil's Slide Plant located in Morgan near the Wyoming border. However, this plant's consumption is now being met by Utah coal, and further imports were ceased in favor of Utah coal. The only other coal import to Utah is about 1 million tons of electric utility coal used in Deseret Generation and Transmission's (DG&T) Bonanza Plant.

Compared to 1995, coal shipped to Utah from out-of-state mines increased by 5 percent in 1996. This increase occurred due to slightly higher consumption of out-of-state coal by Bonanza Plant and Geneva Steel Mill.

Bonanza Plant purchased 0.8 million tons of coal from Colorado and, for the second year in a row, augmented its consumption with Utah coal in 1996. In 1997 imports may rebound as Bonanza Plant resumes a higher level of electric generation.

Geneva Works' coal imports should stay at the 1996 level.

Ideal Basic Industries' Devil's Slide Plant purchased a little more than 9,000 tons of Wyoming coal when it switched from natural gas during the second half of 1992. During 1994 this plant purchased 4,000 tons

of industrial coal from Wyoming. In 1995 and 1996 it did not purchase any out-of-state. This firm is not expected to purchase any Wyoming coal in 1997.

There is no indication that coal will be imported into Utah for use by the residential and commercial sector in 1997. Altogether, the imports of coal into Utah are expected to increase from 1.925 million tons in 1996 to 2.5 million tons in 1997.

OVERSEAS EXPORTS

Utah coal exports to overseas markets during 1996 surpassed all previous export records. Previous records broken include 3.472 million tons in 1981 (which stood as an export record for 13 years) and the all-time high of 3.811 million tons in 1995. For the second year in a row all Utah mines had exports resulting in an all-time high total record of 5.5 million tons. That's an increase of more than 1.65 million tons over the previous year.

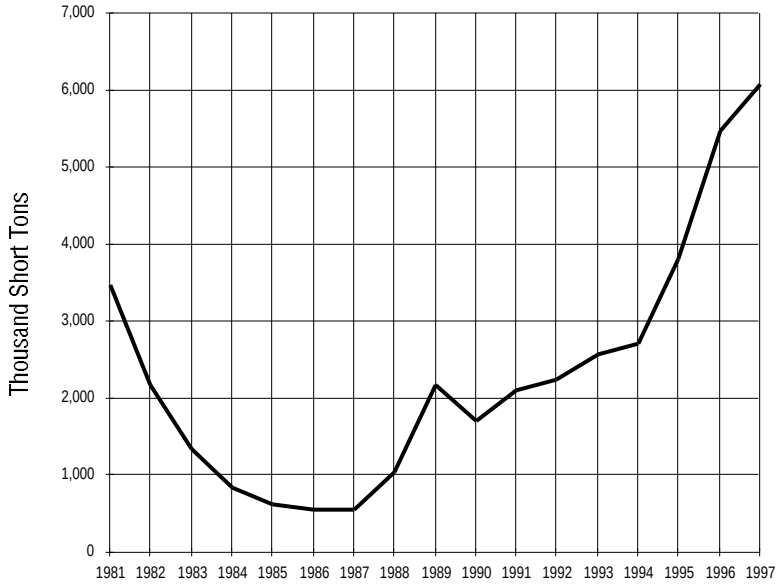
Utah is uniquely situated in the coal export market. Its low-cost, low-sulfur and high-Btu coal is closer to West Coast ports for shipment to Pacific Rim countries than any other U.S. coal source. In the past, U.S. coal exceeded the cost of other coals in the Pacific Rim region, despite offering several quality advantages such as high Btu and low sulfur content. In addition to the coal quality, U.S. coal producers are considered the most reliable. Pacific Rim countries value very highly this quality of Utah coal producers.

The production cost and price of Utah coal steadily decreased over the past decade, largely because of increased productivity. Because of this productivity, Utah coal is nearly as competitive on a price-per-million Btu basis as coal produced in other countries. Indeed, by 1995 Utah coal became quite competitive with Australian and other coals in the Pacific Rim. In 1996 the price of coal stayed relatively flat in the Pacific Rim market; indeed a ten-cent drop per ton of coal did not have a significant effect. During 1997 Pacific Rim consumers managed to extract a $2.50 concession from the Australian producers. Utah coal producers were hoping to keep their concession below a one-dollar level but were not totally successful in that endeavor. The level of concession ultimately matched the average of what the Australian coal producers agreed to and what Utah coal producers were hoping to give.

There are two factors which contributed to the increased level of Utah exports to the Pacific Rim countries. For one, this market is one of the fastest growing major markets for Utah coal with an increase in consumption of well over 5 percent per year. The other factor is Utah coal prices, which are continuously becoming more competitive.

In 1996 Utah exports broke through the 5 million-ton mark and in 1997 should break through the 6 million-ton mark. This should come about by slightly increasing sales to previous customers as well as making some spot sales to companies which were not buying Utah coal before.

Utah Coal Exports to Pacific Rim Countries



1997 values are forecast

Activities of Utah Coal Operators

PACIFICORP ENERGY WEST

Energy West Mining Co., a subsidiary of PacifiCorp, had its most productive year of coal mining in 1996. It mined 8.16 million tons of raw coal. Deer Creek mine produced 4.34 million tons of coal. That's up from 4.14 million tons mined in 1995. This increase in production was made even though more adverse mining conditions were encountered in 1996 than in the previous year.

In the first month of 1996, longwall production shifted from the east side of the Third North Mains to the west side. The panels in the east side of the Third North Mains were in thick coal and dry conditions. The panels on the west side were located in thinner coal, and wetter mining conditions prevailed. In addition, faults were intersected in the 1996 development that hindered production.

1996 saw the first full year of longwall production in Trail Mountain mine. Production totaled 3.83 million tons at Trail Mountain. This is a dramatic increase over 1995 when combined production for Cottonwood and Trail Mountain mines was 3.50 million tons.

Trail Mountain mine coal was shipped by truck to the wash plant near Hunter Power Plant. There it was blended with other stockpiled coal to achieve the desired ash level. When blending alone couldn't produce the desired ash level, a portion of the coal was washed.

Energy West Mining is anticipating another successful mining year in 1997 with production continuing at or above 1996 levels in both Deer Creek and Trail Mountain mines.

In mid-1997 PacifiCorp announced the acquisition of The Energy Group, which includes Peabody Coal Co.. PacifiCorp continues to pursue acquisition of The Energy Group through Britain's Monopolies and Mergers Committee. PacifiCorp met on September 16 with the committee, whose report is due November 21. The Secretary of State for Trade and Industry then can approve (with or without conditions) or reject the merger. PacifiCorp believes the transaction is (1) consistent with the strategic objectives of both PacifiCorp and The Energy Group; (2) is financially solid and will benefit all stakeholders, including electricity customers of The Energy Group.

CANYON FUEL CO., LLC

In late 1996 ARCO (65%) and Itochu Corp. of Japan (35%) entered into an LLC (Limited Liability Company) agreement with Coastal Corp. to acquire the former Coastal States Energy Co. properties in the state of Utah. This agreement added 270 million tons of recoverable coal reserves to ARCO's resource base. ARCO stated that the purchase of these Utah coal properties recognized the worldwide demand for low-sulfur, high-Btu western U.S. coals. Those three underground coal mines produced well in excess of 9 million tons n 1996 and sold that coal to power plants and industrial customers in both the United States and Japan. In 1997, Canyon Fuel (CFC) expects to produce approximately 11 million tons of Utah low-sulfur coal.

In April of this year, ARCO announced that they had determined that coal was not one of their core assets and, consequently, they would evaluate the possibility of a sale, spin-off (IPO) or some combination of the two to dispose of their coal assets.

The disposal of the assets should not result in significant changes in the CFC mines operations. Unless Itochu chooses to sell some or all of their interest in CFC, the LLC (Limited Liability Co.) would have to remain intact should ARCO chose to sell its coal properties. In that case, ARCO's share of CFC would likely be sold to a single buyer. Of course, if there is an IPO, ARCO's share of the CFC assets would become part of the spin-off company with no significant operational changes contemplated.

WHITE OAK MINING AND CONSTRUCTION CO., INC.

In 1996 White Oak Mining produced 1.1 million tons of clean coal from its White Oak No. 2 mine. All of this production was from the Lower O'Conner Seam.

Mining progressed to the

south during the year and a total of four faults were encountered and crossed. These faults ranged in displacement from 8 feet to 30 feet. Mining conditions and productivity were both negatively impacted in these fault zones.

Employment levels at White Oak peaked at 145 people in January of 1996 and declined for the rest of the year to 105 people in December.

Exploration and permitting efforts continued on the areas to the south of White Oak's current leases as well as the leases adjacent to White Oak's rail loadout.

ANDALEX RESOURCES, INC.

Andalex moved its longwall from Pinnacle mine to Aberdeen mine in 1995 and during 1996 moved the longwall back to the Aberdeen mine. The move took place in a little more than two weeks time. With both Pinnacle and Apex mines temporarily idle, all of Andalex's effort is concentrated on developing the Aberdeen mine, where one longwall and three miner sections are being put in place to produce about 2.5 million tons of coal.

Andalex is one of the three top Utah coal exporters and enjoys a very good relationship with the coal consumers in the Pacific Rim. Representatives of the Japan Coal Development Council visited the Aberdeen mine in 1996. In all, coal exports in 1996 exceeded three-quarters of a million tons.

In 1996, Andalex installed a new radial stacker at the Wildcat load out. This increased the capacity of the load out from 2.5 million tons to 3.5 million tons per year. With less than 120 employees during 1996, Andalex produced coal at an average rate of 205,000 tons per month. This production rate is well above 10 tons per miner hour. That should bode well for Andalex.

GENWAL RESOURCES, INC.

In 1996 Genwal Resources, Inc., produced 2.5 million tons of coal and began work toward increasing the production to 3.5 millions tons annually. The production increase was based upon two actions: (1) the purchase of a new longwall, which would allow mining thicker coal seams; (2) the construction of a new truck loadout at the mine, removing a bottleneck.

In 1997 the new longwall was purchased and put into operation in September. Also, after considerable permitting and design activities, construction on expanding the surface facilities, including a new truck loadout, began in July. The new surface facilities should be operational in January 1998.

Additionally, progress was made in acquiring additional reserves when the Forest Service completed an Environmental Assessment on the Mill Fork Lease Application in mid 1997. The BLM should hold the lease sale in early 1998.

The market for Genwal's high-quality coal continues to be power plants, cement plants and exports. The demands from these markets stimulated the production increase.

CO-OP MINING CO.

Co-op Mining Co. was started in 1940 and has operated continuously for the past 57 years. Co-op is an independent coal producer of lower-sulfur, high-Btu coal.

Co-op operates in Bear Canyon near Huntington, Utah. Annual production in the last several years has been 400,000 to 500,000 tons per year. 1997 tonnage is projected at approximately 700,000 tons. Co-op's marketing has been directed at industrial consumers, households and Utah and Nevada utilities. Additional tonnage is sold to the Midwestern market east of the Mississippi River.

Co-op controls over 30 million tons of coal reserves. Approximately 75% of the reserves are private and fee coal. The balance consists of federal coal. The reserves are located east and west of Bear Canyon. Current mining operations are west of Bear Canyon.

There are three mineable seams on the property. They are the Tank, Blind Canyon, and Hiawatha Seams. The Tank Seam is the top seam, the Blind Canyon Seam the middle, and the Hiawatha Seam the bottom. Co-op is presently mining in the Tank Seam. Seam thickness varies between 12 to 20 feet in the Blind Canyon, 5 to 9 feet in the Hiawatha Seam and 8 to 10 feet in the Tank Seam.

Bear Canyon mine operates

continuous miners and shuttle cars, and has the capability to run three sections. At the present time two sections are in operation. Present mining equipment would allow production of up to 1 million tons per year.

A modern screening facility has been installed at the mine site. It gives the mine the capability to participate in the market for oil-treated stoker and household coal.

Co-op has the ability to ship unit-train shipments of up to 120 cars. The facility is designed to load 100 cars in less than 2 hours.

CYPRUS PLATEAU MINING CO.

The last twelve months has proven to be a period of transition for Cyprus Plateau Mining Co.. Reserves suitable for longwall mining are rapidly being depleted at Star Point mine in the Wasatch Plateau coal field. The last panel to be mined should be completed in September 1997.

At the same time, development of mains, gates and bleeders in the new Willow Creek mine property in Book Cliffs (which started cutting coal in September 1996) is preparing for a first longwall startup in late 1997. Extensive surface work has also been completed, including new overland conveyors, a refurbished preparation plant, new bath house, shop, and warehouse and a new railroad spur to service the planned 5 million-ton-a-year production schedule. Shipments as of August 1997 were comprised of coal moving to Asian ports as well as to domestic power plants.

Transition to the Willow Creek Mine has been complicated by two things. First is the necessity of operating two mines simultaneously while attempting the orderly transfer of personnel to the new location. Second is dealing with troublesome geologic features. Overall production for 1996 was approximately three million tons.

Management is reviewing options related to the old Star Point mine.

COASTAL STATES ENERGY CO.

During 1996 there was only one federal coal lease sale in Utah. On January 10, 1991, Coastal States Energy Co. filed an LBA for 2,020 acres of federal land in Winter Quarters Canyon in Wasatch Plateau coal field for the development of its Skyline mine (now owned by Canyon Fuel). The application covered sections 2, 3, 10 and 11 in Township 13S and Range 6E Salt Lake Meridian (SLM). The tract delineation had been made for 3,351 acres covering all or parts of sections 26, 34 and 35 of Township 12S and Range 6E and sections 2, 3, 10 and 11 of Township 13S and Range 6E. An Environmental Assessment (EA) for the tract was prepared by the U. S. Forest Service.

The processing of this LBA, however, was delayed for two reasons. First, BLM and Coastal had arrived at two different figures for the amount of recoverable coal existing in the delineated area. It is possible that the treatment in the vicinity of the faults caused this discrepancy.

Second, the other problem dealt with the mining method. Coastal employs longwall in all of its operations except for mine development. Longwall mining allows the mined panels to collapse and create a subsidence that may adversely affect the stream beds. The Forest Service prefers only fully supported mining operations under perennial streams.

After these issues were resolved, a public auction was held on May 30, 1996 for the sale of 3,820 acres of the Winter Quarters Tract. Coastal's bid was the highest at $6.5 million or $1,701.63 per acre. This amounted to 23.2õ per ton of recoverable coal. Coastal needs more reserves as it extends Skyline mine. Adequate reserves are essential for long-term coal contracts. On the basis of their ongoing sales volume, most coal operators attempt to keep a 30-year coal reserve.

GENWAL COAL CO.

On February 4, 1993, Genwal Coal Co., which is now a 50/50 subsidiary of Intermountain Power Agency (IPA) and Andalex Resources, filed an LBA for 4,051 acres of federal coal leases. These leases cover all or parts of sections 1, 10, 11, 12, 13, 14 and 15 of Township 16S and Range 6E and sections 6, 7 and 8 of Township 16S and Range 7E, called Mill Fork Canyon. This area is on land adjoining Genwal's presently operating mine and the previously purchased LBA.

Because there was some unleased federal coal east and south of Genwal's application area that should have been added to the LBA to avoid a bypass situation, the Tract Delineation Team considered it prudent to add these areas to the tract being offered for auction. Originally Genwal did not include this area in its LBA because of the coal quality, seam thickness and possible environmental concerns associated with hydrology and escarpment protection in the area.

Previous studies conducted by the Forest Service concluded that this land could be leased. The environmental analysis for the tract based on the presently-available information will determine the feasibility of leasing the tract.

The final proposed tract to be leased will contain 6,442.82 acres covering all or parts of sections 1, 10, 11, 12, 13, 14, 15, 22, 23 and 24 of Township 16S and Range 6E and sections 4, 5, 6, 7, 8, 9 and 18 of Township 16S and Range 7E, containing 68 million tons of recoverable coal in Blind Canyon Seam and Hiawatha Seam. This LBA may go out for bid in 1998.

PACIFICORP ELECTRIC OPERATIONS

PacifiCorp Electric Operations (Utah Power) of Salt Lake City submitted an LBA on February 26, 1991, for 7,864 acres in the North Trail Mountain/Cottonwood Creek area of Wasatch Plateau coal field in Emery County. This covers all or parts of sections 2, 3, 4, 9, 10, 11, 14, 15, 16, 21, 22, 23, 24, 25, 26, 27, 28, 29, 32 and 33 of Township 17S and Range 6E. This application is in full conformity with responsible and prudent coal operation.

In reviewing this LBA, the Tract Delineation Team noted

some areas where adjustments could be made in the tract configuration. Along the western edge of the tract, the Forest Service identified some areas in their forest plan as unsuitable for coal leasing. They were deemed unsuitable because of the need to protect the escarpment along Joe's Valley. However, the Forest Service recommended the inclusion of additional land to fill the gap left between the LBA and their existing leases. As a result the Tract Delineation Team will recommend that the Cottonwood Canyon Tract shall include all or parts of sections 2, 3, 4, 9, 10, 11, 12, 13, 14, 15, 16, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 32 and 33 in Township 17S Range 11E, in total 9,243.87 acres containing 75 million tons of recoverable coal.

Because it was going to take some time for the public sector to complete the EIS for this tract, the BLM offered PacifiCorp to allow a third party to conduct the study. It may be that the great urgency to pursue the completion of this LBA has subsided because of the 100,000-acre national limit on federal lease holding by a single company.

HORIZON COAL CORP.

On August 10, 1995, Horizon Coal Corp. of Wise, Va., applied for an LBA covering an area of 1,280 acres in Township 13S and Range 8E, covering all or parts of sections 6, 7, 8, 17 and 18, containing 8 million tons of coal. The National Environmental Policy Act (NEPA) compliance document for Beaver Creek Tract is being prepared by a third-party contractor.

Horizon presently has access and extraction rights to coal resources which will provide coal production for about one year. This LBA would enable Horizon to continue operation for another 10 to 15 more years and adequate surface facility and access should Horizon decide to obtain other federal leases in the future. The final NEPA document should be ready by mid-September. By the fourth quarter of this year, the tract could be ready for public auction.

CANYON FUEL

On December 16, 1996, Canyon Fuel filed for an LBA covering 5,858 acres of federal coal leases named "the Pines" in Wasatch Plateau coal field. The requested lease contains some 50 million tons of coal existing in all or parts of sections 35 and 36 of Township 20S and Range 5E, and sections 1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25 and 26 of Township 21S and Range 5E. Delineation of the tract is being finalized and the lease will go to auction after 1997.

ANDALEX RESOURCES

During March 1997 Andalex Resources purchased B Canyon coal reserve from BP America, a British Petroleum subsidiary, and started the process of permitting the mine. Andalex plans to have the mine producing coal in the year 2000 from a longwall operation. This longwall operation should produce at a minimum rate of 3 million tons per year. B Canyon reserve (renamed West Ridge) should increase Andalex's reserve of recoverable coal by at least 40 million tons.

AMCA Coal Co., the leasing agent for Andalex Resources, filed for an LBA in July 1997 for 1,600 acres of federal coal lease property existing in all or parts of sections 1, 3 and 12 of Township 14S and Range 13E, and sections 6, 7 and 18 of Township 14S and Range 14E, and section 35 of Township 13S and Range 13 E. These areas contain some 10 million tons of recoverable coal. This LBA, which is called Bear Canyon, is adjacent to the above mentioned lease. The BLM is now collecting baseline data and consulting with Andalex to find the best way to accomplish NEPA compliance. The sale of this tract is still in the distant future.

Outlook for Utah's Coal Industry

FORECAST FOR 1997

Prices

Over the past 12 years, coal prices in Utah have declined. In 1984 Utah coal, on average, sold for $29.20 per ton. During 1996, the same coal sold for $18.50 per ton. This represents a decrease of 36.6 percent in current dollars, but a decrease of almost 58 percent on a constant dollar basis.

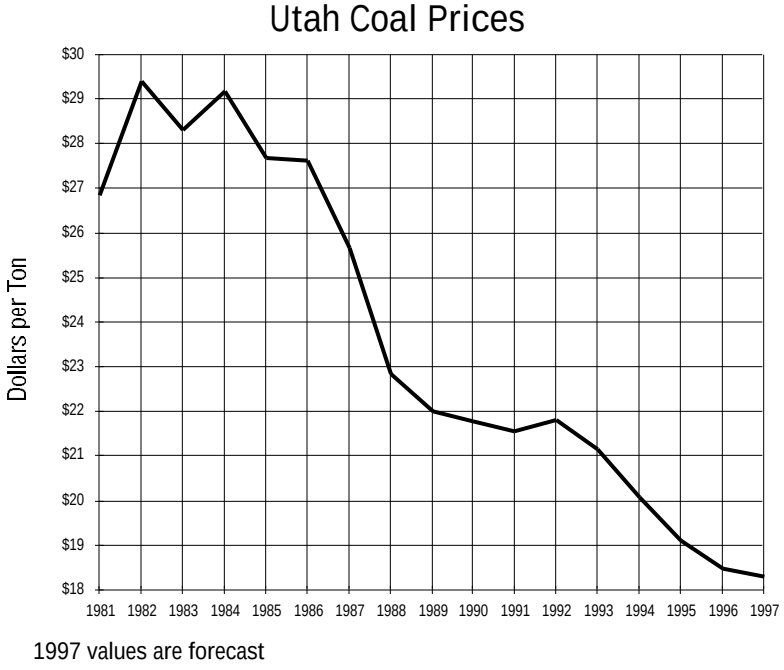
From 1990 to 1993, average prices fluctuated around $21 per ton and hit a new low of $20.07 in 1994. In 1995, another new low was established at $19.11 and still another one in 1996 at $18.50. Even though this appears to be a decline in coal prices, in reality, it is not.

The increase in sales occurred mostly in the export market and new contracts with the eastern utility market which were at the lower end of price scale. At the same time, the reduction of delivery to consumers such as IPP (about 0.7 million tons) occurred in markets that were at the upper end of the price scale. This, therefore, indicates a possible "bottoming out." In the near term, the average price will most likely remain stable; for 1997, the average price of coal will probably be about $18.32 per ton.

The average spot price of coal stood at $14.72 during the 1996 period, fluctuating between $14.00 and $15.07. It started to rise during the first quarter of 1997, and ended the quarter at $17.00 per short ton. The firming up of the spot price had more to do with the supply than the demand.

During 1997 Utah coal production will likely increase by 1.5 million tons, from 27.1 to 28.6 million tons. This could lead to some softening of the spot prices though it is unlikely prices will go below $16.25 per ton.

Utah's spot coal price changes are not just a function of demand changes or Utah's coal supply. They are also a function of the availability of coal in the neighboring states, more importantly Colorado. Just as much as Cyprus' Twenty Mile mine production problems contributed to the tightening of Utah's spot prices in 1996, its anticipated increased production in 1997 could also play a part in softening the spot price of Utah coal.



1997 values are forecast

The current dollar prices will start moving up after 1997; however, the price of coal as measured in constant dollars is expected to continue to fall slightly. In other words, even though the average dollar price per ton will increase, the rate of increase should not exceed the rate of inflation.

It is important to bear in mind that Utah's coal prices are also influenced by the world price of coal. The correlation may not be high, but the existence of a strong influence cannot be denied. During 1996 world coal prices remained relatively flat but started to fall off in 1997.

Coal operators in Utah recently agreed to a concession of one-dollar-plus per ton of coal exported to the Pacific Rim countries of Taiwan, Korea and Japan. Other countries such as Australia and South Africa gave concessions ranging up to $2.50 per ton.

Export prices for Utah producers were not a determining factor in overall coal prices because the sale takes place on marginal production; however, as the amount and the percentage of the exported coal relative to total production increases, the effect of the export price on the average price of coal becomes more relevant.

Other factors also tend to soften prices. Technological developments in coal production and handling continue to lower the break-even point for production and to reduce prices overall. Large volume production allows operators to reduce profit margin per ton by lowering prices and still keep overall profit high. The abundance of coal supply on the international market will continue to exert pressure on Utah producers to keep prices competitive.

World recoverable coal reserves stand at 1.141 trillion tons. World production and consumption is around five billion tons per year. At the present rate of consumption, the world has an adequate supply for the next 227 years. This, of course, is based on the recoverable reserves that are known and reported at this time. There are many coal reserves that remain undiscovered and some that are discovered but not reported.

There is also some question about the "recoverable" fraction of the recoverable reserves. That is, resources that we can mine efficiently with today's technology. However, future technology may yield more recoverable resources, hence a much greater recoverable reserve.

The rate of consumption also directly affects the remaining number of supply years. As the world's population increases, the demand for energy, including coal, will increase. As developing countries with high growth rates expand and add energy-intensive industries, the demand for energy and coal will increase in tandem.

Presumably, at the same time, new technologies will create much greater efficiency in our energy conversion. Today, on average, we burn 10,080 Btu (0.84 lb. of 12,000 Btu per pound of coal) to generate 1 kWh of electricity which has 3,413 Btu. In other words, in the process of conversion we lose 6,667 Btu or 66.1 percent and end up with 33.9 percent of the energy used.

Sierra Pacific's Pinon Pine Power Project is now operating at about 40% efficiency and, by the turn of the century, many of our energy conversion units will have a heat rate of 6,800 Btu/kWh or slightly more than 50 percent efficiency. This means that by the turn of the century we should be able to use the same amount of coal to generate 50 percent more electricity than we do today. The reserve-to-production ratio will increase and extend the life of our reserves. This supply overhang will ultimately keep the supply up and the price down.

There are also other forces acting to move the price of coal up, specifically Western coal. As the year 2000 approaches, the second phase of the Clean Air Act Amendments of 1990 becomes effective. This will spark a renewed wave of interest in low-sulfur coal throughout the country. In 1997 the interest in new sources of low-sulfur coal will not be great but from mid-1998 into 1999 there should be some strong interest in Western coal again. Utah's coal production, now at the upper percentage of capacity, should respond to the greater demand by showing some firming up in the price of coal.

Production

Utah coal production for 1997 will surpass 28 million tons, reaching an all-time high in the industry's 128-year history. Three factors will account for the record: (1) increased industrial consumption of the coal in the West; (2) increased steam coal consumption by the electric utilities in the West; and (3) higher levels of exports.

Electric utilities in the West and in the East will continue using greater amounts of Utah coal in the years to come. In addition, Pacific Rim consumption will increase after the completion of the $180 million expansion of the Port of Los Angeles Dry Bulk Terminal. In June 1995,

the Phase II design and engineering contract was awarded to Jacobs Engineering Group, Inc., of Pasadena. Coal will be unloaded from unit trains by tandem railcar dumper and stockpiled by an overhead traveling stacker. Pile activators and belt conveyors will then reclaim the coal and convey it over land to the ocean-going vessels.

This project, which will initially handle seven to eight million tons of coal per year, is expected to be completed and operational before the end of 1997. The success of this terminal is virtually guaranteed. The shareholders are diverse, representing every facet of the coal market including coal producers, transporters and consumers. Because of the Pacific Rim expansion, industry analysts believe shipments of Utah coal will increase to more than seven million tons by the end of the decade.

To meet the additional demand, Skyline production should increase by about ten percent. White Oak's production could experience a 20 percent increase. Soldier Canyon should also expand by nearly 20 percent. Andalex, Plateau, Co-op and Genwal should experience some increase in production albeit small. Sufco should have a moderate increase also.

Distribution

During 1997 distribution of Utah coal will probably reach 29 million tons while production will top 28 million tons. Distribution of electric utility coal to out-of-state customers will decrease by as much as 0.24 million tons from 7.26 to 7.02 million tons.

On January 1, 1995, TVA and White Oak Mining and Construction Co., Inc., signed a ten-year contract for annual delivery of 1.5 million tons of coal per year. Another 10-year coal contract for delivery of 0.5 million tons per year was signed on the same date between TVA and Genwal Coal Co. This was the first time in a decade that Utah coal started to flow to electric utilities in the East on a long-term basis even though numerous spot sales had been made to that region.

This two million tons of additional coal through 2005 was a boost to Utah's coal production. It will lead to more jobs in Utah's coal industry as well as many indirect jobs in local communities. In addition to TVA Utah now has four companies sending coal to two electric utilities in Illinois. There are also three companies sending electric utility coal to Wisconsin. Our forecast for the first decade of the 21st century shows that electric utility coal going east should be about 5 million tons per year.

Distribution of Utah coal to electric utilities within the state should show very little year-to-year change, unless new facilities are built or some of the older units are retired. Currently, there is no indication that either will happen. Older units experience more down-time due to maintenance and repair, so a slight decrease in distribution is expected; however, companies could increase their electric generation marginally by ramping up their operation.

The only unit that could materially affect electric utility coal consumption within the state is Intermountain Power Agency's IPP plant. During years with higher precipitation in the Pacific Northwest, more hydropower becomes available at costs below those of coal. This will, to some extent, curtail the operation of IPP units, resulting in less consumption of Utah coal. For 1997, this unit will purchase and burn about 1.2 million tons more than it did in 1996. PacifiCorp distribution will also increase by another 0.1 million tons while the consumption of coal and generation of electricity at the plants increases. DG&T's Bonanza Plant consumption of Utah coal will decrease by 0.37 million tons.

During the first decade of the next century, the electric utility sector's consumption of Utah coal within the state should increase from 11.75 to over 13.0 million tons per year.

Distribution of Utah industrial coal within and outside the state during 1997 will increase by almost half a million tons. It will increase only slightly in the future as only out-of-state consumption increases. This trend should continue through the first decade of the 21st century.

Distribution to the residential and commercial sector will also increase during 1997. However, any movement in this sector is ultimately tied to the price of natural gas. Some commercial operations may begin switching from

natural gas to coal, resulting in increased consumption.

Finally, in the export market during 1997, distribution will increase by more than 11 percent, or almost 0.66 million tons to more than 6 million tons. The export market is going to be the fastest growing market for Utah coal. The forecast for this consuming sector for the first decade of the next century is above ten million tons per year.

The general outlook for Utah's coal industry is bright even though some coal operators have moved their operations to other states, sold, or otherwise disposed of their Utah coal properties. Still, a number of companies expanded operation and doubled in size within a span of three or four years. Many companies have applied for new federal coal leases in Utah. A new mine opened in 1996, an activity that bodes well for the future of Utah coal. This may well be the beginning of many more mines opening in Utah as some of the older mines curtail operation and relocate.

Coal production in Utah has enjoyed steady growth since the mid-1980s and has more than doubled in size within the past decade. Despite coal prices that have declined steadily for a decade, coal production in Utah has increased. This is indicative of a strong and healthy coal industry.

In 1997 all consuming coal sectors within and outside of Utah are expected to have moderate growth. The coal contracts with Eastern utilities should add permanence to electric utility consumption outside of Utah. The forecast of total production for the first decade of the 21st century is about 36 million tons.

On September 18, 1996, President Clinton declared 1.7 million acres of Central Southern Utah the "Grand Staircase-Escalante National Monument." This monument was left in the care of the Bureau of Land Management (BLM) to develop a management plan, working closely with the state of Utah.

The task force was later organized with headquarters in Cedar City. On the state side, the task force included a geologist (from Utah Geological Survey), a wildlife biologist (from Division of Wildlife Resources), a paleontologist (from State Parks), an economist/planner (from the five-county Association of Governments) and a historian/social anthropologist (from University of Nevada assigned through Utah Travel Council), working closely with a number of BLM employees in similar capacities.

The main purpose of the task force is to identify the scope of activities to be conducted within the monument's boundary in order to preserve Utahns' rights and honor the valid existing rights of those who possessed it before the declaration of the monument. One task the BLM has responsibility for is the exchange of land belonging to School and Institutional Trust Lands Administration, which is interspersed within the 1.7 million acres, with other lands outside of that designated area.

It is the policy of BLM to carry out this land exchange on an equal value basis. This policy is something that requires further review, discussion and negotiation and, at this time, is beyond the scope of this report. In any case the BLM policy is something that should not be taken as given and is definitely worthy of a serious review.

Usually, independent appraisers are hired to determine the value of the land subject to exchange. One of the factors that affects how independent appraises determinate land value is the presence of minerals.

Kaiparowits coal field which, according to a recent USGS study, contains 62 billion tons of in-place coal, is located mostly within the monument. To assess the value of this coal reserve BLM hired BXG, Inc., a Colorado coal consulting firm, in January 1997. BXG issued their findings in March 1997. Mr. David Tabet of Utah Geological Survey and F.R. Jahanbani of the Office of Energy and Resource Planning, conducted a detailed review. On the basis of this analysis, the Department of Natural Resources (DNR) concluded that the report seriously underestimates the extent and quality of the Kaiparowits coal field. Some of the points which DNR questioned are listed below.

BXG's estimates of recoverable reserves contained on Kaiparowits Plateau were based on recovery rates of coal resources in Appalachian coal fields of the eastern United States. On this basis, they calculated that Kaiparowits coal fields contained between 4 billion to 6 billion tons of recoverable coal. DNR emphatically challenge BXG's use of Appalachian coal fields as an indicator of recovery rates that could be obtained by mining coal on Kaiparowits Plateau.

Due to more favorable geology of the Kaiparowits coal fields (such as seam thickness and more horizontal geometry of coal seams, and the use of more advanced longwall mining technology), it is our opinion that the BXG study underestimates economically recoverable coal reserves by at least one-half.

Present longwall mining techniques recover up to 70 percent of a given seam. By applying a very conservative recovery rate of a little over 30 percent, as suggested by Doelling and Smith (1982), to our thirty billion tons of mineable coal in various beds, we believe a more accurate estimate of economically recoverable reserves would be 11.3 billion tons. At least 6.75 billion tons of this are high-Btu, low-sulfur coal. In addition, the average coal quality of the Tropic and Escalante areas suggests additional recoverable reserves of compliance coal exist

The most troubling assumption BXG incorporates into its market analysis is the assignment of an average coal quality for the entire Kaiparowits Plateau coal field. According to their

report, average coal quality in Kaiparowits is estimated at 0.73 percent sulfur and 10,400 Btu/lb. BXG observes that this is significantly lower than Utah's current average for compliance coal produced on Wasatch Plateau of 11,671 Btu/lb. and 0.47 percent sulfur. In doing so, BXG fails to differentiate between distinctly different coal qualities of the three regions (Tropic, Escalante and Smoky Mountain) that comprise the greater Kaiparowits Plateau coal field.

Averaging the coal quality across the entire plateau dilutes the quality of Smoky Mountain coal field. These recoverable reserves total 6.75 billion tons and average 11,207 Btu/lb. and 0.68 percent sulfur, ranking these reserves as a high-Btu compliance coal. Coal companies would view these reserves as the most logical target for initial future development. By averaging coal quality across the entire Kaiparowits Plateau, BXG draws a blanket conclusion that Kaiparowits coal is disadvantaged on the basis of lower coal quality. This is not the case. Comparisons with the quality of coal mined on Wasatch Plateau and Book Cliffs indicate that coal from Smoky Mountain coal field exhibits Btu and sulfur attributes that are comparable to compliance coals from these areas in central Utah.

The BXG report also developed estimates for production costs in order to evaluate market potential vis-a-vis other Utah and Colorado mines that produce high-Btu, low-sulfur coal. Using historical data from underground coal mines in the West and BXG's coal mine cost model for Utah, a series of cost estimates were prepared for a generic longwall mine on Kaiparowits Plateau. According to the model, a mine at this location producing 5 million tons per year would require a sale price of $16.87 FOB mine to be economically viable.

Again, a number of inaccurate assumptions were used by BXG in their analysis. The result is that their model reports operating and capital costs for mines in Kaiparowits Plateau coal fields that are higher than we believe the costs are likely to be.

First, for purposes of comparison, the relevant coal field is the higher quality coal of the Smoky Mountain area of south Kaiparowits, not the entire plateau. Second, mine operators in Smoky Mountain coal field are likely to have higher rates of productivity than reported by BXG. BGX assigns a labor productivity rate to the Kaiparowits cost model that is based on data from all Western longwall coal mines between 1990 and 1995.

Utah's underground coal mines are the most productive mines in the entire U.S. The geology of Smoky Mountain coal field would tend to make new mines even more productive than mines in central Utah and much more productive than all other longwall operations in the Western U.S. Third, the thick, flat nature of Kaiparowits coal beds and their shallow over-burden would result in lower costs for roof support and minimize operational down-time required to move longwall equipment. The lack of previous mine workings will lower development costs associated with constructing long entry tunnels to work around old workings.

Finally, the non-gaseous nature of the coal seams would reduce the cost required for more extensive ventilation systems typically required in central Utah's coal fields. These factors, including higher productivity and lower development and operating costs, will lower the costs of mining coal in Smoky Mountain coal field on Kaiparowits Plateau. BXG states in their report that the models were run using a contingency factor of 20 percent, a relatively conservative estimate compared with the 10-percent factor typically used for Utah mines.

Based on DNR's analysis of their assumptions, BXG's use of an additional 10-percent contingency expense in their Kaiparowits cost model is not justified. Using assumptions that more accurately reflect likely mining conditions, expected FOB mine costs of a ton of coal mined from Smoky Mountain field will be lower than BXG's estimate by a minimum of $2 per ton.

Another weakness of the BXG report is its estimate and comparison of transportation costs. The BLM's consultant estimates the cost of transporting a ton of coal to a rail load-out facility in Utah to be 7.5 cents per ton-mile. In New Mexico and Arizona, where truck hauling would

be required to a railhead at Flagstaff, the BXG report assigns a truck transportation charge of 10 cents per ton-mile. According to transportation companies, a more accurate figure for coal haulage cost for proposed mines in the area would be 20 to 25 percent lower. Accordingly, the BXG report overestimates the transportation costs of a new mine in Smoky Mountain coal field by 25 to 33 percent.

Forecasts developed by BXG for markets currently supplied by Utah coal mines project demand to rise from 28 mmtpy in 1996 to 35 mmtpy by 2015. By analyzing projected production from existing mines, mine expansions and planned new mines in central Utah, BXG reports that future demand can be supplied by Wasatch Plateau and Book Cliffs until 2018. Therefore, they conclude it is unlikely that a lower quality, higher delivered cost product (Kaiparowits coal) could compete in this market before 2020.

DNR took issue with a number of assumptions that underlie the BXG analysis of future demand for Utah-produced coal. First, forecasts of demand by DNR's Office of Energy and Resource Planning (OERP) exceed BXG's by an average of 2.7 mmtpy between 1996 to 2020. Underestimating demand has significant impact on the timing of reserve depletion at existing Utah mines, which in turn retards the time frame under which new sources of coal will need to be found. OERP's forecasts suggest demand will outstrip central Utah production by several million tons starting in 2015 when reserves at Skyline and Willow Creek mines are projected to be exhausted. At this time there will be a need for a new coal supply. Based on an evaluation of coal quality and estimates of cost of production, OERP projects that coal from the Smoky Mountain area of Kaiparowits Plateau would be a viable source of coal supply by as early as 2014, six years earlier than forecasted by the BXG study.

Second, DNR also disagrees with BXG's characterization of utility demand for Utah coal. BXG estimates utility and industrial demand falling from 22.4 mmtpy in 1997 to 15.2 mmtpy by the year 2003. While this represents a significant decline of over 32 percent, BXG provides no justification or explanation of the assumptions that underlie this decline.

BXG has gone to great lengths to establish a case against Kaiparowits coal as an economically viable source of supply for steam coal markets. The BXG report concludes that while sufficient reserves exist to support mine development on Kaiparowits Plateau, lower average quality coal and higher production and transportation costs will keep this coal out of the current term contract and spot markets and will hamper future efforts to establish a market for this coal until central Utah coal fields are mined out.

Debate about whether Kaiparowits coal is economical — given current market conditions — is not relevant to the fact that central Utah coal reserves are in decline. As supplies tighten and costs of production increase in the future, Kaiparowits coal will become increasingly competitive with mines in central Utah. DNR's critique of the BXG report demonstrates that coal mined from Smoky Mountain coal field of Kaiparowits Plateau is of sufficient quantity and quality to make it a major player in the future coal supply market of Utah. This coal field is likely to have production costs that could make it an economically viable source of supply for many Western utility and industrial coal markets within the next few years and certainly by 2014.

- Electric utility deregulation undoubtedly will set in motion forces that would affect the coal industry-electric utility relationship. These forces will not necessarily be detrimental to the coal industry and they might even be favorable. As the electric utility industry starts to reshape itself, the coal industry must adjust as well.

A new trend of vertical integration of generation business and fuel producers may emerge. One example is the PacifiCorp tender offer for the Energy Group, one of whose holdings is Peabody Coal Co. This action owes its impetus to electric utility deregulation. Zeigler Coal Co. is also on a similar path.

Before long we will see other mergers and integrations that will add to the momentum of stream-

lining. Natural gas will invariably become a part of this equation. Whether it is on the basis of pure economic forces or environmental regulation, natural gas will have a greater part in the generation mix. The coal industry may not have to carry the entire burden of increased natural gas use. Other resources in the energy mix might carry their own share.

There is no doubt that change is imminent and the better the coal industry prepares itself and welcomes the change, the more successful the industry will be in years to come. These changes are not restricted to the electrical utility, coal or natural gas industries but may also affect the railroad industry. Most of the one billion plus tons of coal produced in this country is moved by railroad. If the railroad industry does not reduce its costs, coal may lose market share to natural gas, something that neither the coal industry nor the railroad industry can afford.

There are two schools of thought as to which energy sector, natural gas or coal, would emerge as the more predominant in the new deregulated environment. Natural gas has the advantage of being cleaner and emitting less CO2 for delivered Btu than coal. The reserves of natural gas available for electricity generation are abundant and more people believe in its value than ever before.

Coal on the other hand has always been abundant and its lower price per delivered Btu has always sustained its attractiveness worldwide. Fuel switching in favor of natural gas will decrease coal consumption to some extent. The use of more natural gas would not, however, significantly erode the total tonnage consumed.

On the other hand, clean coal technology, a multi-billion dollar, government-industry cooperation, has come a long way in ensuring the greater use of coal-fueled electric generation. The new technology would reduce the SO2 and NOx emission. By increasing the efficiency in thermal conversion into electricity, the new technology would also reduce the CO2 emission per unit of generated electricity. These lower emission levels and our willingness to rethink and reinvent a new workable relationship between the coal producers, electric utility generators and the transportation sector would go a long way in decreasing the price of coal-based electric generation and guarantee a flourishing future for a more environmentally friendly coal industry.

The electric utility coal industry relationship has been evolving over the past decade and a half by expanding the parameters of product specification, increased price flexibility, and shorter term contracts as well as relying more on spot market. This mutually beneficial relationship is now a prelude to much more proactive and inspired initiatives.

Appendix

History of Coal Mining in Utah

If we were to pick one energy resource that has had the greatest effect on the life of Utahns and the development of the state of Utah, it would be coal. Indeed, the history of coal in Utah is the history of Utah: The two are inseparable. No sooner than the early settlers arrived in the Salt Lake Valley, that the search for coal was underway.

There were two fundamental reasons behind this urgent search. The first was a need to secure a viable source of fuel for heating. It was soon realized that the available timber was too difficult to harvest and costly to remove from the depths of the canyons. Furthermore, the timber harvested was deemed best suited for the construction of homes rather than used as a fuel. The second was the need to create a steel-based industry whose manufactured goods were the prerequisite of a modern industrial economy. To this end, smelting processes were required. Coal would soon prove to be the obvious fuel of choice.

The early settlers were availed of a strong leadership, numerous artisans, and skilled workers, as well as men of craft and artistic ability. However, they also lacked the financial resources to purchase their requirement and transport manufactured goods from areas east of the Mississippi. There was another consideration that gave impetus to coal mining: a desire to develop the precious metal deposits of the state, though this goal was of less importance than the critical reasons stated above.

It was at this time that the building of the railroad gave an added boost to the coal industry and made coal more readily available and at lower cost than before. Whether it was the blossoming of the coal industry that brought the railroad to central Utah or whether it was

the coming of the railroad that made the coal industry, one cannot readily say; to be sure this chicken vs. egg dilemma cannot be addressed at length in this short recitation.

I. The Period of Discovery: 1849 - 1878

In the winter of 1849, just two and a half years after arriving in Utah, a Mormon expedition under the leadership of Parley P. Pratt found deposits of coal in the Kolob coal field in Iron County. Coal was also discovered the following year in Wales, in Sanpete County, by two former Welsh coal miners who also founded the town in 1857, and soon after other miners discovered coal resources in the Coalville coal field, in Summit County.

Coal was first produced from the Kolob field in 1852 (some records show 1851) less than five years after settlers arrived in Utah; and from the Wales coal field in 1855 (some consider this to be actually the first coal production), and from Coalville coal field in 1859. Since the Kolob and Wales coal fields were far away from Salt Lake City and the coal which was coked was only good enough for lead but not for iron smelting, more expenditure of effort was concentrated on Coalville, which was only 40 miles from Salt Lake City. This field was producing 50,000 tpy by 1880 and by its last closure it produced 4.3 million tons.

Even though the Coalville coal field was active through the 1870s, the reasonably priced and better quality Rock Springs coal, produced by Union Pacific (UP) owned mines, reached Salt Lake City at a lower price than Coalville coal. It was during this decade that UP coal was completely unrivaled.

In late 1874 by some accounts, or early 1875 by others, coal was discovered around Scofield (Pleasant Valley) in what is known today as the Wasatch Plateau coal field. In the ensuing five years numerous mines opened up in the area with some having lasted for more than 50 years, others just a few years. Notable among these were:

Fairview Coal and Coke Company which opened a mine in Huntington Canyon and built a settlement called Connelsville in 1875. One year after coal was discovered in Carbon County, coal was coked locally and sent to Springville by wagon, but this proved to be too costly and after a few years of operation the mine

and the settlement were abandoned.

Winter Quarters, on the other hand, was more of a success story. Milan O. Packard and Myron Crandall, owners of the newly acquired coal claim, had the coal extracted and transported by wagon to Springville. Pleasant Valley Coal company was incorporated the following year and the Pleasant Valley Railroad Company started to build a line from the mine to Springville in 1877. Rio Grand Western Railroad purchased the mine and the railroad in 1882. When this mine was closed in mid-1940 it had completed more than 65 years of successful operation and had produced 10.8 million tons of coal.

Utah Central Coal Company was started by Mr. Hatch of Springville in 1876 and purchased by Mr. Pugsley of Salt Lake in the following year. On the first day of 1884 the first Utah coal fatality occurred in that Mine. In 1890, Union Pacific Coal Company purchased this coal property which sold it to Scofield Coal Company in 1917. This mine did not produce coal after 1936. Altogether this mine operated for sixty years and produced just under 2.0 million tons of coal.

From 1851 to 1878 Utah had gone through the age of discovery. Many coal fields were located both close to and far from population centers, some too far to be economically viable, and some were not too close but close enough that an adequate transportation system made them economically feasible to mine.

A successful coal mining operation has always required five factors: a good quality coal, the ease of mining, a skilled labor force, capital expenditure, and an adequate transportation facility. Transportation has played a particularly important role in the success of a coal mining operation. It was also the interrelationship between the transportation companies that gave rise to central Utah's coal field success.

II. Period of Infrastructure Building: 1879 - 1899

During this period, Utah's coal industry went through a period of infrastructure building. Many mines were opened, the railroad system to get the coal to the market was expanded, and a strong labor force was assembled.

The preeminence of Carbon County in Utah's coal production was inextricably tied to the competitive forces in transportation. Denver and Rio Grande Western (D&RGW), which recently merged with Southern Pacific (SP), in a move to seize the coal production and transportation from Union Pacific (UP), (which a few months ago merged with SP), purchased Pleasant Valley Coal Mines and Railroad and became a major force in the life and livelihood of Carbon County residents.

Utah Fuel, a subsidiary of D&RGW, acquired Winter Quarters Mine in 1882, Castle Gate in 1888, and Sunnyside Coal Properties in 1890. Winter Quarters had its good and bad moments. On May 1, 1900 an explosion occurred in the No. 4 Mine killing two hundred miners. In that same year when Utah coal production surpassed the one million ton mark, more than 900,000 tons of the amount was produced by Utah Fuel Company. The mine, however, operated successfully until the depression of the 1920s; it finally closed in mid-1940.

During the expansion of D&RGW through Carbon County, a coal seam was discovered north of Helper which was deemed adequate for steam locomotives at the time. D&RGW built the facility, north of Helper, to mine this coal. The first groups of miners were brought in from the Winter Quarters Mine of Utah Fuel Coal Company. Later, Italians and Greeks were hired to work in the mine. On March 8, 1924, a gas explosion at the mine killed 172 miners, 62 of whom were Greek.

By 1974, McCullough Oil Company had bought Castle Gate, Kenilworth, Clear Creek, Spring Canyon and Hardscrabble coal properties. McCullough dismantled the town of Castle Gate in order to use the site for a preparation plant and loadout.

In 1890, Pleasant Valley Coal Company, which had acquired the Castle Gate property in 1882 and started producing coal in 1888, erected 80 eight-foot beehive ovens at the Castle Gate site; by 1900 an additional 124 ovens had been built. Pleas-

ant Valley also acquired Sunnyside mines in 1890. After the Sunnyside mines became fully operational in 1898, it was determined that this coal was more suitable for coking than Castle Gates' coal. For the first five years, Sunnyside Coal was hauled to Castle Gate for coking but after 1903 Pleasant Valley started building coking ovens at Sunnyside. By 1919, the Sunnyside coke plant was the largest single beehive in operation in the country with 819, 12- to 13-foot ovens. Sunnyside Mine did not become fully operational until 1898; however, the mine was starting to produce coal before that time and, prior to its closure in 1994, it had celebrated its Centennial.

Pleasant Valley Coal Company also found coal in a little logging camp six miles south of Scofield just before the turn of the century in what is known today as Clear Creek. The town grew rapidly. Coal production reached its peak in the second decade of the Century with the hard work of mostly Finish miners who had recently immigrated to this county. The town reached a maximum population of 600 before declining. The coal became too deep by late thirties and most of the miners moved out. Currently there are still people living in this town for part of the year.

III. Period of Rapid Growth: 1900 - 1921

Coal production in Utah was first recorded in 1870. In that year, the state produced 5,800 tons of coal. During the period of discovery from 1851 to 1978, the production started to increase and, by the end of this period, we produced an average of 50,000 tons per year (tpy). In 1899, with the infrastructure in place, Utah produced 878,000 tpy. From 1900 to 1921, Utah's coal industry went through a period of rapid growth. Production at the end of this period increased nearly 700 percent as compared to the production at the end of the previous period.

At the turn of the century, more mines opened. In 1904 we had 155 coal mines in Utah requiring more miners. Though there were many mines operating in Utah they were mostly wagon wall mines. Most of the coal during this period was produced by six mines: Sunnyside, Clear Creek, Winter Quarters, and Castle Gate of Utah Fuel Company, each producing more than one-quarter of a million tpy; Kenilworth of Independent Coal and Coke and, finally, Scofield Mine (Pleasant Valley Mine) of UP Coal Company also produced about one-quarter of a million tpy. By the middle of this period more than half of the miners were immigrants from Japan and many European countries such as Greece, Germany, Finland, Austria, France, Italy, Ireland, Sweden and England. The conditions were harsh and the work was hard, but the hard work paid off in the long run and they found a decent quality of life in the coal fields of Utah. Soon it was realized that the Eastern Book Cliffs' coal had a good coking quality. By 1917 more than one million tons of coking coal was produced from this field. This period is also marked by improved mechanization and a better transportation system. By the end of this period, Utah's coal industry and Utah's coal resources were held in high esteem.

In "Mineral Industry of Utah" (1919), the author described the coal resources of Utah as enormous and states that "the amount of coal in the state would suffice to supply the coal requirements of the entire world for nearly one hundred years. Of course 11 years later this claim had been reduced to: "the total reserves would supply the entire United States at the present rate of consumption for 100 years."

Spring Canyon Coal Company, located west of Helper in Sowbelly Gulch, had its beginning in 1895 when Teancum Pratt started taking coal from the outcrop for personal use. By 1911, Union Coal Company started exploring the possibility of mining the coal. The mineral rights of the Spring Canyon were purchased by Jesse Knight who started to build the town and produced from the mine in 1913. Just after World War II, the town had a population of one thousand, which was a relatively good size town for Utah. However, by 1970, the mine closed and the town was abandoned. By 1975, the town all but disappeared.

Another mining town that survived was Kenilworth, situated less than five miles east of Helper. Heber Stowell found coal cropings in this area in 1904 and

formed the Independent Coal and Coke Company (IC&C) in 1906 to mine the coal. The town of Kenilworth was subsequently built high on the hill. Except for the tramway that rises above the town, no trace of mining operations is visible in this otherwise beautiful setting. The mine operation was also quite successful and mining was continued until recently.

During the period of rapid growth which began before World War I many independent coal operators, including Charles Strevell of Independent Coal and Coke Company, Jessee Knight of Spring Canyon Coal Company and the brothers Fred and Arthur Sweet of Standard Coal Company, wanted to expand their production and marketing activities; but their desires were to some extent stifled by D&RGW as they were not availed of competitive transportation rates. Their ordeal finally led to the creation of the Utah Public Utilities Commission which regulates railroad rates. To some extent this demonstrated the power of the transportation industry to manipulate the marketing activities of rival coal operators.

Panther Coal Company gave its name to a small town that was settled in 1911 roughly two miles northeast of Helper. The name was later changed to Carbon. Just before the start of World War I, production of coal started from the mine. During the same year U.S. Fuel Company purchased this company and renamed the town Heiner. Before the Great Depression, the company town population grew to 600 and was later abandoned in the 1930s. Today, there is almost nothing left of the town.

In June of 1912, United States Fuel Company, a subsidiary of Sharon Steel of Miami, Florida, purchased the last of the company-built towns including: Hiawatha, Moahland and Black Hawk properties. U.S. Fuel also acquired the Consolidated Fuel Company, Castle Gate Coal Company, Black Hawk Coal Company and the Panther Coal Company.

Concurrently the Utah Railway, another subsidiary of Sharon Steel, was organized to connect the King mines of U.S. Fuel to the town of Helper. It was during the second part of this period that Utah coal played an important part in the successful continuation of the opening of the west by fueling the trains and sending coal to the west for industrial and transportation consumption.

IV. Period of Stagnation: 1922 - 1940

In these two decades, Utah experienced a period of stagnation and decline. During the first decade of this period coal production hovered around 4.5 million tpy peaking at just above five million tpy in 1929 and pulling back to an average of 3.3 million tpy through the next decade.

During this period, while Utah mines were to some extent disadvantaged due to transportation constraints, they competed successfully in spite of The Depression-induced shrinking coal market. Opening of the Columbia Steel's Ironton Plant near Provo also gave an added boost to an otherwise contracting industry. Columbia Steel used the Book Cliffs coal in its plant to make coke which was much more efficient than the traditional beehive coke ovens. Mechanization was changing this labor intensive industry. In the absence of a robust market most organizations constrict their capital expenditures, but some Utah coal operators decided otherwise. They streamlined their operations and continued with their mechanization such that they became very competitive in a declining market. It was during this stagnation period (in 1925) that the first coal-fired electric utility plant, the 20 MW Jordan Plant in Salt Lake city went into operation, which gave a small boost to Utah coal production. It was also during this period (1938) that Carson W. Smith, President of the Consolidated Coal & Coke Company of Denver, approached Harold Silver, a native of Utah who had recently moved to Colorado and, at the Denver Athletic Club, asked him if he could design a machine that would solve the coal mining problems of the day.

By 1940, Consolidated Coal & Coke Company and Silver Engineering entered into a contract to design and build a machine that would take the place of the machines used to undercut, drill, blast and load coal. The construction of the first experimental continuous miner was completed in 1943 and the

first continuous miner entered commercial operation in 1946. During 1947, Joy Manufacturing Company of Pittsburgh, Pennsylvania, bought Silver's invention and agreed to pay him royalties. This machine was listed in Time Incorporated's book Machines in 1964 and cited as the 150th major invention in the history of the world. The Kaiser Coal Company purchased the first two continuous miners in Utah in 1951 for its Sunnyside operation. Kaiser demonstrated its leadership in 1961 again by purchasing one of the first two longwall machines that was used in the country.

The first stagnation period in coal production (from 1921 to 1940) coincided with other energy sources becoming more cost-effective and abundant. We used coal to heat our homes, churches and stores. In the mid-twenties this use was beginning to be replaced first by fuel oil and later in the 1930s by natural gas. The Great Depression of the 1930s resulted in a slowing down of the consumption of coal, but it also helped the consumption of coal by making the changeover cost to other energy sources less affordable. Many homeowners could simply not afford the cost of changing to fuel oil.

We used coal for transportation in our steam locomotives, but this was also displaced by diesel fuel, even though Rudolf Diesel himself had envisioned using some sort of coal slurry in his invention. From the beginning of the 1930s, we replaced our coal-fired steam locomotives with diesel engines and every year we used less coal for transportation and freight. The industrial energy users also started to turn their backs on coal, preferring natural gas for its ease of handling and cleanliness.

This period saw more mines close than open, but nonetheless there were mines being opened.

During the fall of 1920, Amalgamated Mines Company of Denver, incorporated a subsidiary by the name of Blue Seal Coal Company. The mine, which was located about a mile north of Scofield, was opened in the Spring of 1921 and worked intermitantly through the mid forties.

Both Gordon Creek Coal Company and National Coal Company started mining coal in upper Gordon Creek area in 1921. The mines operated through the thirties and reopened during World War II.

Mutual Coal Company located at the west end of the Spring Canyon was incorporated and started working in 1920. It worked successfully for about 18 years until it closed in 1938.

During 1922, Columbia Steel Corporation opened up Columbia Mine in eastern Book Cliffs to provide coking coal for its Ironton Steel Plant in Provo. This mine operated successfully until 1967 when it closed down.

During 1926, Mike Francis incorporated the Maple Creek Mine located in the south east of Standardville and started the construction of the tipple and the excavation of the tunnel. By February 1928, Maple Creek Mine was in operation and worked successfully if profitably until 1937 despite a damaging fire in 1931.

V. Period of Rejuvenation: 1941 - 1957

The vibrant and rapid growing coal industry in Utah that had fallen prey to the vagaries of the Depression was saved primarily by the steel industry and secondly by production for World War II. In addition to Ironton Plant of Columbia Steel, which produced about one million ton of coal for coking per year, Kaiser Steel spent substantial amounts of money to develop the Sunnyside Mine to supply the coking coal requirement of its Fontana Steel Plant in California. Geneva Steel Company of Orem, which was later sold to U.S. Steel (1946), opened Geneva Mine in the eastern Book Cliffs coal field.

From the mid-forties to the mid-fifties there were two forces working in opposite directions that affect Utah's coal production. The steel industry was going ahead in full force consuming an average of 2.5 million tpy or more than forty percent of total production. Also, from 1950 to 1957 three electric generation plants of Utah Power and Light (Hale II, 1950, Gadsby I, II and III, from 1951 to 1955 and Carbon I and II in 1954 and 1957) came on line. These units were using about 1.25 million tpy of coal or more than twenty percent of the average production at the time.

On the other hand, all resi-

dential customers within the periphery of the larger towns and cities that could not afford the changeover to fuel oil or natural gas during the Depression and the early 1940s could now afford to do so -- and they did. A very lucrative sector of the coal industry all but vanished within a relatively short span of a few years.

In the transportation sector the increase in the number of locomotives that were temporarily halted due to forcible participation in World War II, resumed again, but the fuel of choice was no longer coal.

VI. Period of Decline: 1957 - 1972

From 1957 to 1972, a total of 15 years, Utah's coal production went into a decline. Steel production was shifting from the United States to Japan and later to Korea. As a result, there was lower demand for Utah's metallurgical coal. Nearly all of the residential and commercial heating had changed over to fuel oil or natural gas and there was no longer demand for coal in the transportation sector. The Huntington and Hunter Plants of UP&L were yet to be built. The Naughton Plant which was built in Wyoming did not use Utah coal. In other words, there were no additions to capital stock that consumed coal -- only deletions.

In this period of decline, however, there were indications of good things to come. The world's proven oil reserves did not indicate a sustainable future during the boom years following World War II. In many credible publications, 20 to 25 years were given as the length of time that the known crude oil reserves would last. Oil executives started to look at other energy resources and coal appeared to be the most viable. Within a few years companies such as Exxon, Gulf Oil, Standard Oil of Ohio, Texaco, Atlantic Richfield, Phillips Petroleum, Continental Oil, Occidental Petroleum, Kerr-McGee, Humble Oil, Getty Oil, McCullough Oil, Ashland Oil, Quaker Oil and Coastal Energy, became the owners of various coal properties, some also in Utah. It was in the midst of this coal property acquisition that the quadrupling of the oil prices was forced upon us by the Organization of Petroleum Exporting Countries (OPEC) in 1973 which gave rise to the idea of using coal for the generation of electricity in place of fuel oil or natural gas. This marked the end of the decline in Utah's coal market as we entered another period of growth.

VII. Period of Sustained Growth: 1973 - 1996

During this period coal producing companies began to consolidate and become more productive and stronger financially. Today we do not have a hundred coal mines in Utah, but a handful; a handful which are more capable and productive than hundred mines of earlier years.

1. Coastal (ARCO)

Coastal Coal, which has recently been transferred from Coastal States Energy Company (CSEC) to Arco, operates three mines in Utah. CSEC acquired the Skyline reserves in 1978. In 1979, Getty Mineral Resources Company became a 50 percent joint venturer with CSEC in order to share the development costs. OSM issued CSEC, as the operator of the Skyline mines, a mining and reclamation permit in June 1980. Skyline was designed to meet all the new environmental requirements and was the first new underground mine operation to be permitted under the new rules and requirements of the Surface Mining Control and Reclamation Act ("SMCRA"). In 1981, the construction of the coal handling facility, maintenance, warehouse and office complexes at the minesite began for this multiple-seam mining operation. Construction of the rock slope, which provides conveyor belt access to the Lower O'Connor "A" seam, was well underway, and the mine No. III portals were completed, in 1981.

Skyline has evolved into a major Utah coal producer, with coal mining beginning in October 1981. In 1985, CSEC purchased Getty Mineral Resources Company's interest from Getty Oil Company, and the railroad load-out facility was completed. Total production in 1985 was 374,000 tons. The first unit train was shipped in September of 1985. Skyline installed the first longwall in the Fall of 1986, increasing annual production capacity to over two million tons, and a second longwall was added in late 1991, further increasing annual production capacity to over five million tons.

The Southern Utah Fuel

Company ("SUFCO") minesite is located approximately 30 miles east of Salina, Utah, at the southern end of the Wasatch Plateau in East Spring Canyon. The minesite is on United States Forest Service managed land with a rail loadout located 80 miles northwest of the mine on the Union Pacific railroad west of Levan, Utah. The elevation of the mine at the portal is 7,558 feet.

The coal reserve and mine surface facilities are all located in Sevier County, Utah.

SUFCO began operations in 1941 as a small producer with production targeted at local markets and has evolved into a major longwall operation with a current production rate of approximately 4.2 million tons per year. SUFCO's production from 1941 to 1973 was in the 50,000 to 100,000 ton per year range. Coal was sold primarily for home heating as well as some light industrial markets. SUFCO expanded in 1970 to an annual production of 100,000 tons as a result of strengthening coal markets. Of note, SUFCO has remained union-free throughout its existence.

CSEC acquired SUFCO from the original developers in December 1974 and proceeded to increase SUFCO's production significantly over the next 20 years. At the time of the acquisition, SUFCO produced 360,000 tons per year. CSEC undertook an expansion program to increase production to more than 2.2 million annual tons, which was considered to be the optimum production level. CSEC attained this production level in 1982 using six continuous miner sections with diesel haulage. In the late 1970s and early 1980s, SUFCO's productivity ranked among the highest in the nation when compared with other mines using only continuous miners.

After reaching its initial production goal of 2.2 million tons in 1982, CSEC further increased SUFCO's production through the conversion to longwall mining. SUFCO installed a longwall mining system in October 1985, replacing four continuous miner sections and allowing for a 33 percent workforce reduction while maintaining the same production levels. Conversion to longwall mining, and the corresponding workforce reduction, was timed to coincide with the Skyline Mine expansion, thus allowing for some transfer of personnel. Production continued to increase from 1985 levels as SUFCO improved longwall and continuous miner efficiencies, with production reaching 3.1 million tons in 1989. Production over the next seven years matched market demand, with production exceeding 3.9 million tons in 1995.

The most recent action in SUFCO's expansion plan was the early 1995 purchase of additional shields and a new face conveyor to allow production form "super longwall" panels. The super panels were designed to be 930 feet wide and more than 14,000 feet long, each containing approximately six million tons of coal. SUFCO produced 3.9 million tons in 1995 using the super panel technology. All the development for the super panels is currently being accomplished with one continuous miner section. Forecasted production for 1996 is 4.3 million tons at a productivity rate of 85 tons per man shift counting all SUFCO employees. (It should be noted that all CSEC tons per man shift figures incorporated herein include all employees, unlike MSHA statistics, which include underground personnel only.)

Soldier Creek Coal Company's ("Soldier Creek") Soldier Canyon Mine is located in Nine Mile Canyon of Carbon County, Utah approximately 11 miles northeast of the town of Wellington, Utah. The portal facilities are located on BLM land. The elevation of the minesite at the portal is 6,740 feet. Soldier Creek's Banning rail loadout is located 18 miles southeast of the Soldier Canyon Mine on the Sunnyside spur of the Southern Pacific Railroad.

The proposed Dugout Canyon Mine is located in Dugout Canyon of Carbon County, Utah approximately nine miles northeast of the town of Wellington, Utah with the proposed portal on fee property placed at an elevation of 7,075 feet. Both the Soldier Canyon Mine and the proposed Dugout Canyon Mine are within the same contiguous leasehold property located entirely in Carbon County.

The Soldier Canyon Mine's history dates to the mid-1930s when a group of Carbon County residents opened the mien on a 40-acre federal lease. Since its

development by the initial investors, Soldier Creek has had three owners, including CSEC most recently. California Portland Cement Company purchased the mine in 1975 to fuel its cement kilns in California and Arizona. California Portland Cement later merged with Conrock of California to form CalMat in 1984 and sold the mine to a subsidiary of Sun Company, Incorporated in 1985. Sun purchased the property because of its strategic location relative to Sun's adjacent coal reserves that is purchased in the Book Cliffs coal field in 1981 from Pacific Gas and Electric's Eureka Energy Company. The entire property, encompassing both the Soldier Canyon Mine and the undeveloped Eureka properties, was incorporated as Sage Point coal Company (Sage Point) under Sun. Sage Point is the parent of Soldier Creek.

CSEC acquired Soldier Creek (and its associated land company, Sage Point) from Sun Company, Incorporated in September 1993. CSEC's objective in acquiring Soldier Creek was to add another competitive coal company to CSEC's portfolio and allow further penetration into new and established markets. CSEC also saw opportunities to significantly increase the value of the Soldier Creek property for a modest capital investment. After the acquisition, CSEC undertook two principal strategic initiatives: (1) to restructure the Soldier Canyon Mine in order to reduce costs and increase production and; (2) to develop the high-quality Dugout Canyon reserves. Soldier Creek has a current production capacity of 1.0 million tons and employs continuous miners with continuous haulage.

2. UP&L (PacifiCorp)

PacifiCorp, previously Utah Power and Light Company, operates two mines and owns three more mines which are not active at this time.

UP&L's involvement in coal mining began in 1972 with the acquisition of the Deseret Mine from the LDS Church. The Deseret Mine replaced North American Coal Company (Castle Gate) as coal supplier for the Carbon, Gadsby and Hale power plants. Management of the day-to-day mining operations at Deseret was contracted out to American Coal Company. The Mining and Exploration Department (M&E) was formed shortly thereafter to administer and oversee the company's main energy properties: coal and uranium. In 1969 Peabody Coal Company as the lease holder of the coal property and Malcolm McKinnon as the contractor opened up the Deer Creek Mine. He had also previously opened the Rilda Canyon and McKinnon Mine and was the original lease holder of the Skyline Mine which was sold to Utah Fuel Company. In 1976 UP&L purchased the Deer Creek and Wilberg Mines from Peabody Coal Company, securing coal reserves for the Huntington and Hunter power plants. American Coal Company was again retained as independent contractor to operate these mines. The M&E Department administered these arms-length operating agreements, thus providing long-term planning and capital necessary to mine and protect the company's coal reserves.

Prior to the Deer Creek and Wilberg purchase, UP&L had entered into a long-term contractual relationship with Peabody Coal Company in 1971 to supply coal to the Huntington and Hunter Plants. The relationship began to deteriorate soon after as coal costs almost tripled from 1969 to 1976. In 1976 Peabody indicated that further increases were necessary to retain profitability and requested that the contract be renegotiated. At this point UP&L determined that the best alternative was to purchase the properties from Peabody based on the problems with long-term agreements, the future coal requirements of the plants, and the ability of the local coal market to supply the required tonnages at reasonable costs over the life of the plants.

The Deseret Mine began being replaced as the principle coal source for the Carbon, Gadsby and Hale plants in 1978 when contract purchases from Valley Camp Coal Company were instituted. In June 1979, a new contract with Valley Camp was signed, eventually providing 100 percent of the coal requirements to these plants. Currently the coal reserves of the Deseret, Deer Creek and Wilberg Mines are totally dedicated to the Huntington and Hunter power plants. These mines are strategically located allowing coal deliveries to the Huntington Plant via a two-mile conveyor and to Hunter Plant by short truck haul roads

(Wilberg 12.5 miles, Deseret 13.5 miles).

Production capacity has increased since the mines were first purchased to coincide with the addition of electric generating capacity at Huntington and Hunter plants. In May 1979, UP&L began installation of highly productive longwall mining equipment, eventually operating four longwall mining systems in 1981. The UP&L mines now comprise one of the most productive underground mining facility's in the West in addition to being the largest. Since installation of the first longwall mining system, advances in technology and operating techniques have further improved productivity to the point where two longwall systems are now providing the same tonnage as four previously did. This has allowed for significant cost savings reflected in current production costs falling far below previous years levels.

As mining progressed and coal reserves became further defined, additional reserves were acquired to meet expected burn requirements and provide for more logical mine development. In 1981, the Meetinghouse Canyon and Cottonwood properties were acquired and in 1985 the West Appa property was purchased, all adjacent to currently owned UP&L properties. The coal reserves secured to date are anticipated to fulfill the future lifetime requirements of both Huntington and Hunter plants.

American Coal Company operated the mines through April 30, 1979 until Emery Mining Corporation (EMC) purchased the operating agreements from American Coal Company. EMC guided operations through April 1986 bringing the UP&L properties into the longwall era, raising productivity, and significantly lowering costs. Although many accomplishments and improvements were realized, this period was not without problems and tragedy.

A small fire occurred in the Beehive Mine of the Deseret Mine complex in 1983 requiring sealing of the area to extinguish the fire. In 1984, the devastating Wilberg Mine fire occurred claiming 27 lives and suspended operations for over a year. Since the fires, both mines have been brought back to full production although the Deseret Mine complex is currently idle for economic reasons.

3. Cyprus Plateau

Cyprus Plateau Mining Corp. currently operates two mines and plans to complete the mining of the reserve in Star Point Mine by the end of the decade and move completely to Willow Creek Mine site by the end of the decade.

Cyprus Plateau Mining Corp's Star Point No. 2 Mine, located 23 miles southwest of Price, is owned by Cyprus Amax Minerals Company. Star Point Mines' history dates back to 1916 when William Wattis and partners purchased 160 acres to open a mine in a canyon later to contain a small company town of the same name. Following various name and ownership changes, Cyprus purchased the property from Texaco in 1985. Since that time, the mine has expanded to its maximum extent as determined by geology and geomorphology. Remaining reserves are generally bounded by faults and additional adjacent reserves are not economically feasible to purchase from.

The Star Point No. 2 Mine presently produces approximately three million raw tons per year. Production is from three coal seams; the basal Hiawatha, the Middle or Third, and the upper Wattis Seams. Overburden ranges are up to about 1,900 feet. Working faces are approximately five to six miles from the portal and production is from two continuous miner sections and one longwall unit.

This mine was the first non-steel or non-utility owned company in the area to install longwall mining equipment (1982). Since that time, Plateau Mining Corp. has been instrumental in helping develop and pioneer innovative mining technologies in the west including radio imaging, two-entry gate roads with yield pillar, cable bolting, and on-line responsive coal processing. A unit train loadout facility has enhanced Plateau's capacity to meet customer requirements.

Plateau Mining was recently awarded the Cyprus Amax "President's Award" for having the lowest incident rate of all Cyprus underground coal mines in 1995. As well as recovering the maximum amount of the in-place coal resource, mining coal in an environmentally safe and responsible manner is a priority at Cyprus Plateau. The company has

shown that the coal resource can be mined with little environmental damage by thorough evaluation and proper planning. The Utah Division of Oil, Gas and Mining presented Cyprus Plateau with the 1995 Earth Day Award for exceeding regulations in developing Utah's resources.

In 1993, Cyprus decided to purchase additional reserves in Central Utah in order to be an active coal producer in the western U.S. As production at the Star Point No. 2 Mine is phased down, the workforce will be moved to the nearby newly developing Willow Creek Mine property.

The Willow Creek Mine is located approximately two miles north of the town of Helper, Utah in Carbon County, near the old Castle Gate townsite in Willow Creek Canyon. The property consists of the Willow Creek Area to the east, the Castle Gate Area to the west, and the Heart area in the center. Mining in the Willow Creek and Heart areas will be in the three primary seams (D, K and A) and one secondary seam (C).

This property was first investigated by Plateau in 1987. A detailed acquisition study of the Blackhawk Reserve (Willow Creek Area) was completed in-house. With increased production from the Star Point Mine in the early 1990s, the property became a target for acquisition. A detailed investigation into the reserve was initiated and resulted in two formal reports being written. These reports, coupled with a detailed financial analysis, resulted in the leasing of this property from American Electric Power (AEP) in the Fall of 1993.

With the merger of Amax and Cyprus shortly after the leasing of the Blackhawk property, Amax's adjacent Castle Gate Mine property was evaluated. It was determined that most of the reserves on this property (west of Willow Creek) could be accessed in future years by acquiring a new federal coal lease. This lease, named the Willow Creek North Lease, is contiguous to both properties and contains significant additional quantities of recoverable coal. At this point, the feasibility of longwall mining was determined, and the Willow Creek North Lease was pursued. Previous studies, recent drilling results, and recent rock mechanics studies all support the plan to develop a mine with one longwall section and two continuous miner sections. The proposed layout would allow the mine to produce a base of five million tons annually.

Willow Creek Mine will allow Cyprus Plateau Mining Corp. to grow from a three million ton per year producer to a base of five million tons per year, and provide the reserves to grow with market demands. The present 15-year mine plan will access the three principal coal seams mentioned. The average cover for the base mine plan will be less than 2,000 feet. By expanding the mineable cover to 2,500 feet, an additional 10 years of production is possible. The quality of the Willow Creek coal is very similar to Star Point coal and will be sold both domestically and internationally.

4. Andalex Resources

Andalex Resources owns three mines; only one of them is active at this time. Andalex is also a half owner and operator of another mine (Genwal)

In 1976, Andalex Resources acquired the Centennial Development Company's leases in the Book Cliffs coal field under the name of AMCA Coal Leasing.

Subsequently, Tower Resources was incorporated to start work on the leases. From the Summer of 1977 to the Spring of 1980, Tower Resources went through reserve evaluation, mine planning, permitting process and market development.

In the Spring of 1980, Tower Resources started its mine development with surface facilities. In the Fall of 1980, Tower began mining with a continuous miner in the Gilson seam of Pinnacle Mine. This was the first mine to be opened.

Operation of Tower Resources grew more rapidly in 1982 with the opening of the second mine, Apex Mine, which started to produce coal from the lower Sunnyside seam.

The third mine by the name of Aberdeen opened in 1990. Now the entire operation of Andalex Resources (Tower Division) is concentrated on the Aberdeen Mine, though both Pinnacle and Apex have small reserves left.

Andalex also expanded its

lease holdings through leases by application and also by lease modification.

5. Genwal Coal Company

Genwal operates the Crandall Canyon Mine and it is equally owned at present by IPA and Andalex. The Crandall Canyon Project consists of the operating Crandall Canyon Mine, coal properties, and Mohrland loadout located in Emery County, Utah. The Crandall Canyon Mine currently produces 2.6 million tons of clean coal per year utilizing continuous miners, continuous haulage and longwall mining methods. The Crandall Canyon Mine is planning expansion to allow for production to increase to 3.5 million tons of annual production.

The Crandall Canyon Project is jointly owned by the Intermountain Power Agency (IPA), a political subdivision of the state of Utah, and Andalex Resources, Inc., a Utah corporation (GRI) for the operation of the Crandall Canyon Mine and coal properties.

The Crandall Canyon Mine is located 17 miles northwest of Huntington, Utah within the boundaries of the Manti-LaSal National Forest of the Wasatch Plateau mountain range. The portal elevation is 8,000 feet above sea level.

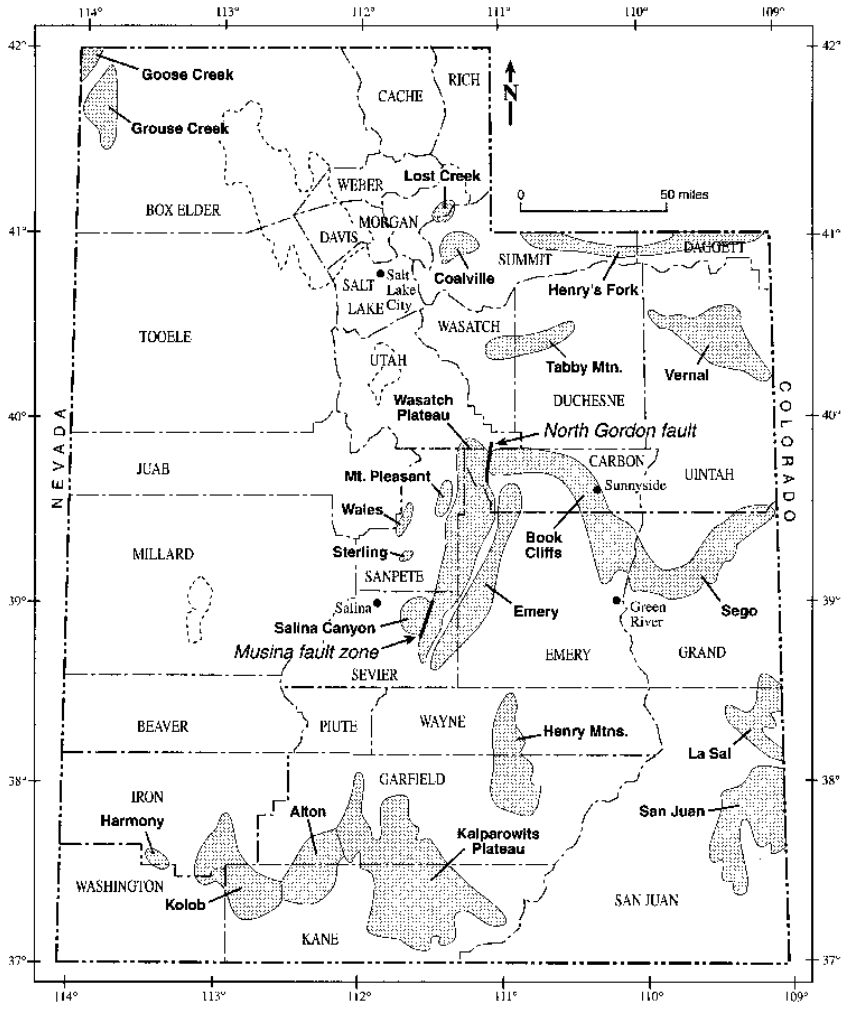
The first coal mined on the current Crandall Canyon Project property was in July of 1939. The mine at that time was known as the Tip Top Mine and was operated by James L. Peterson from Fairview, Utah.

The Crandall Canyon Mine as it is known today was reopened in 1984 by the Bud Gent family of Virginia forming Genwal Coal Company. The original mine was located on a small federal coal lease of 300 acres which provided access to the Hiawatha coal seam. The mine has since been expended on to additional state and federal coal leases.

In 1988, Genwal Coal Company and the Crandall Canyon Mine were purchased by Nevada Electric Investment Company ("NEICO"). NEICO expanded the mine's production from 214,000 annual tons in 1988 to 877,000 annual tons in 1991.

On July 1, 1991, IPA purchased a 50 percent undivided interest as tenant in common with NEICO. The IPA and NEICO joint ownership formed the Crandall Canyon Project. In January 1994, Andalex Resources purchased NEICO's half of Genwal and formed Genwal Resources Inc. Production from the Crandall Canyon Mine continues to

Coal Fields of Utah



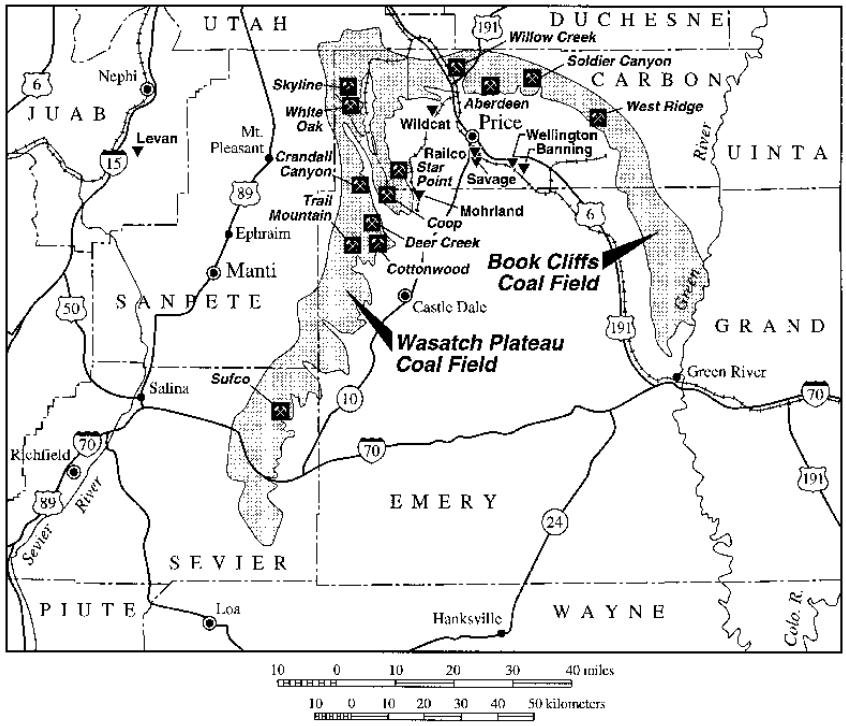
increase and in 1996 an estimated 2.6 million tons will be produced.

late 1993 and started to produce and market the Balina Mine coal very successfully. The mine was also renamed White Oak.

try to remain competitive and grow during a time of falling prices and industry contraction.

The demonstrated resourcefulness of Utah's coal industry in continuing to expand during the last 10 years suggests the continued success of the industry is limited only by access to Utah's coal resources and demand for high quality coal. Utah should remain a leader of the underground coal industry in this country.

Mines and Loadouts in Book Cliffs and Wasatch Plateau Coal Fields



The Crandall Canyon Mine has successfully implemented continuous miner, continuous haulage and longwall mining methods. The Crandall Canyon Mine is a quality geological coal reserve featuring a low ash, low sulfur, high Btu clean coal. The mine is staffed with a highly motivated, experienced, qualified and hard working work force.

6. White Oak Mining & Construction Company

White Oak Mining and Construction Company of Kentucky bought the Balina mines from Valley Camp of Utah, a subsidiary of Quaker Oil Company in

7. Co-op Coal Company

Co-op Mining has kept its operation and marketing to a very manageable size. It is operating totally on fee land and can continue this scale of operations with its existing reserves for years to come.

Today the underground coal industry in Utah is a model for the entire country. The level of productivity of Utah's coal miners is the highest of the industry. Utah's high quality coal and our coal operators' ability to respond to changing market conditions have allowed Utah's coal indus-

Table 1 **Historical Production, Distribution and Consumption of Coal in Utah**

Thousand Short Tons

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
PRODUCTION	11,829	12,259	12,831	14,269	16,521	18,164	20,517	22,012	21,875	21,015	21,723	24,422	25,051	**27,071**	28,563
DISTRIBUTION	12,188	12,074	14,361	13,243	16,989	18,244	20,289	21,680	21,673	21,339	21,935	23,441	25,443	**27,816**	29,050
E U OUTSIDE UTAH	3,404	3,730	3,746	2,989	3,182	2,797	2,623	3,373	3,608	4,000	3,914	4,841	6,570	**7,258**	7,024
E U IN UTAH	5,220	4,912	7,385	7,614	11,677	12,533	12,963	14,053	13,472	13,136	13,343	13,839	12,550	**12,728**	13,668
C P IN UTAH	886	1,392	1,328	868	291	1,259	1,277	1,296	1,310	1,182	1,089	1,198	1,062	**1,120**	1,150
IND OUTSIDE UTAH	1,091	1,542	1,866	1,745	1,813	1,996	2,401	2,327	2,158	2,006	2,146	2,322	2,399	**2,339**	2,616
IND IN UTAH	664	551	450	374	349	739	810	619	624	497	614	647	642	**517**	688
R/C OUTSIDE UTAH	292	311	312	81	83	88	84	59	76	81	134	308	68	**51**	121
R/C IN UTAH	191	258	252	191	204	236	323	382	320	347	228	157	182	**260**	204
OVERSEAS EXPORTS	1,346	849	625	551	555	1,044	2,175	1,708	2,112	2,245	2,567	2,717	3,811	**5,468**	6,076
TOTAL IMPORTS	937	1,539	1,580	1,145	1,165	2,448	2,367	2,137	2,007	2,155	2,100	2,588	1,841	**1,925**	2,497
IMPORTS E U	0	224	193	659	905	1,300	1,400	1,449	1,310	1,517	1,501	1,495	779	**805**	1,347
IMPORTS C P	854	1,229	1,289	383	160	1,088	922	679	695	629	579	1,089	1,062	**1,120**	1,150
IMPORTS IND	83	85	98	103	100	60	45	7	2	9	20	4	0	**0**	0
IMPORTS R/C	0	1	0	0	0	0	0	2	0	0	0	0	0	**0**	0
COAL OPERATORS	15	15	15	16	16	14	14	13	12	12	11	10	9	**7**	8
ACTIVE MINES	25	21	21	21	18	21	20	18	16	16	15	14	12	**12**	12
EMPLOYEES	2,707	2,525	2,563	2,881	2,650	2,559	2,471	2,791	2,292	2,106	2,161	2,024	1,989	**2,077**	2,168
PRODUCTIVITY,T/MH	2.59	2.94	2.8	3.08	3.25	3.69	4.42	4.22	4.79	5.13	5.43	6.22	6.94	**6.72**	70.9
AVERAGE PRICE $/TON	$28.32	$29.20	$27.69	$27.64	$25.67	$22.85	$22.01	$21.78	$21.56	$21.83	$21.17	$20.07	$19.11	**$18.50**	$18.32
TOTAL VALUE $1,000,000	$335	$358	$355	$394	$417	$415	$451	$479	$472	$459	$460	$490	$479	**$500.8**	$522.4

Values for 1997 are forecast.
All distributions include imports. EU=Electric Utilities. CP=Coke Plants. IND=Industrial. R/C=Residential and Commercial.

Table 2 Utah Coal Production (net) by Coal Mine, 1996
Thousand Short Tons

Company	Mines	County	Coalfield	Production
Energy West	Deer Creek,	Emery	Wasatch Plateau	4,297
	Trail Mt.	Emery	Wasatch Plateau	3,618
Canyon Fuel	Skyline #1&3	Emery/Carbon	Wasatch Plateau	4,454
	Soldier Canyon	Carbon	Book Cliffs	977
	Sufco	Sevier	Wasatch Plateau	4,214
White Oak	White Oak #2	Carbon	Wasatch Plateau	1,069
Andalex Resources	Aberdeen	Carbon	Book Cliffs	2,449
Genwal	Crandall Canyon	Emery	Wasatch Plateau	2,494
Co-op	Bear Canyon	Emery	Wasatch Plateau	581
Cyprus Plateau	Star Point #2	Emery/Carbon	Wasatch Plateau	2,911
	Willow Creek	Carbon	Book Cliffs	7
Total				27,071

Table 3 Utah Coal Production by Coal Field
Thousand Short Tons

	Wasatch Plateau	Book Cliffs	Emery	Sego	Coalville	Others	Total
1870-1981	166,404	234,547	5,723	2,654	4,262	2,332	415,922
1982	12,342	3,718	852	0	0	0	16,912
1983	10,173	1,568	88	0	0	0	11,829
1984	10,266	1,993	0	0	0	0	12,259
1985	9,386	2,805	640	0	0	0	12,831
1986	10,906	2,860	503	0	0	0	14,269
1987	13,871	2,348	269	0	33	0	16,521
1988	15,218	2,363	548	0	35	0	18,164
1989	17,146	2,785	586	0	0	0	20,517
1990	18,591	3,085	336	0	0	0	22,012
1991	18,934	2,941	0	0	0	0	21,875
1992	18,631	2,384	0	0	0	0	21,015
1993	19,399	2,324	0	0	0	0	21,723
1994	22,079	2,343	0	0	0	0	24,442
1995	22,631	2,420	0	0	0	0	25,051
1996	23,616	3,455	0	0	0	0	27,071
1997	24,230	4,333	0	0	0	0	28,563
Cumulative Production	409,593	273,939	9,545	2,654	4,330	2,332	702,393

1997 values are forecast and are not included in the total

Table 4 **Utah Coal Production by County**
Thousand Short Tons

	Carbon	Emery	Sevier	Summit	Iron	Kane	Others	Total
1870-1959	211,028	49,166	4,046	4,012	521	45	2,846	271,664
1960	3,698	1,137	49	20	50	0	1	4,955
1961	3,916	1,124	47	20	52	0	0	5,159
1962	3,105	1,077	49	20	46	0	0	4,297
1963	3,493	752	47	18	48	1	0	4,359
1964	3,752	848	47	17	54	2	0	4,720
1965	3,779	1,101	61	13	36	2	0	4,992
1966	3,380	1,170	65	15	4	2	0	4,636
1967	2,971	1,113	72	13	3	2	0	4,174
1968	3,062	1,167	70	13	3	2	0	4,317
1969	3,367	1,200	72	12	4	2	0	4,657
1970	3,349	1,292	79	13	0	0	0	4,733
1971	3,347	1,097	158	12	0	12	0	4,626
1972	2,956	1,656	184	6	0	0	0	4,802
1973	2,866	2,445	339	0	0	0	0	5,650
1974	2,754	2,901	391	0	0	0	0	6,046
1975	2,984	3,126	827	0	0	0	0	6,937
1976	3,868	3,057	1,043	0	0	0	0	7,968
1977	4,390	3,107	1,337	0	0	0	4	8,838
1978	4,005	3,640	1,558	0	0	0	50	9,253
1979	5,292	5,147	1,657	0	0	0	0	12,096
1980	5,096	6,319	1,821	0	0	0	0	13,236
1981	6,123	5,609	2,076	0	0	0	0	13,808
1982	8,335	6,329	2,248	0	0	0	0	16,912
1983	4,194	5,404	2,231	0	0	0	0	11,829
1984	5,293	4,825	2,141	0	0	0	0	12,259
1985	6,518	4,516	1,797	0	0	0	0	12,831
1986	6,505	5,404	2,360	0	0	0	0	14,269
1987	7,495	6,765	2,228	33	0	0	0	16,521
1988	7,703	7,801	2,625	35	0	0	0	18,164
1989	8,927	8,531	3,059	0	0	0	0	20,517
1990	8,810	10,315	2,887	0	0	0	0	22,012
1991	5,816	12,980	3,079	0	0	0	0	21,875
1992	3,386	15,049	2,580	0	0	0	0	21,015
1993	2,642	15,528	3,553	0	0	0	0	21,723
1994	4,523	16,330	3,569	0	0	0	0	24,422
1995	3,801	17,344	3,906	0	0	0	0	25,051
1996	5,985	16,872	4,214	0	0	0	0	27,071
1997	5,535	18,439	4,589	0	0	0	0	28,563
Total	382,514	253,244	58,572	4,272	821	70	2,901	702,394

1997 values are forecast and are not included in the total

Table 5 Utah Coal Production by Landownership
Thousand Short Tons

	Federal Land		State Land		County Land		Fee Land		Total
	Production	Percentage	Production	Percentage	Production	Percentage	Production	Percentage	
1980	8,663	65.5%	1,105	8.3%	0	0.0%	3,468	26.2%	13,236
1981	8,719	63.1%	929	6.7%	0	0.0%	4,160	30.1%	13,808
1982	10,925	64.6%	998	5.9%	0	0.0%	4,989	29.5%	16,912
1983	6,725	56.9%	419	3.5%	0	0.0%	4,685	39.6%	11,829
1984	8,096	66.0%	285	2.3%	0	0.0%	3,878	31.6%	12,259
1985	9,178	71.5%	510	4.0%	0	0.0%	3,143	24.5%	12,831
1986	11,075	77.6%	502	3.5%	0	0.0%	2,692	18.9%	14,269
1987	13,343	80.8%	488	3.0%	0	0.0%	2,690	16.3%	16,521
1988	15,887	87.5%	263	1.4%	0	0.0%	2,014	11.1%	18,164
1989	16,931	82.5%	375	1.8%	153	0.7%	3,058	14.9%	20,517
1990	17,136	77.8%	794	3.6%	606	2.8%	3,476	15.8%	22,012
1991	18,425	84.2%	942	4.3%	144	0.7%	2,364	10.8%	21,875
1992	17,760	84.5%	1,384	6.6%	136	0.6%	1,735	8.3%	21,015
1993	19,099	87.9%	1,682	7.7%	116	0.5%	826	3.8%	21,723
1994	22,537	92.3%	1,227	5.0%	243	1.0%	415	1.7%	24,422
1995	23,730	94.7%	571	2.3%	289	1.2%	461	1.8%	25,051
1996	25,996	96.0%	446	2.3%	15	0.1%	614	2.3%	27,071
1997	27,306	95.6%	514	1.8%	143	0.5%	600	2.1%	28,563

1997 value are forecast

Table 6 Distribution of Utah Coal 1996
By Destination and End-Use, Thousand Short Tons

Destination	Electric Utilities	Other Industrial	Residential &Commercial	Total
Arizona	0	69	0	69
California	1,009	1,933	1	2,943
Colorado	0	1	8	9
Idaho	0	38	23	61
Illinois	1,847	11	0	1,858
Kentucky	43	0	0	43
Nevada	2,343	183	6	2,532
Oregon	0	17	0	17
Tennessee	1,902	0	0	1,902
UTAH	11,923	517	260	12,700
Washington	0	87	13	100
Wisconsin	114	0	0	114
PacificRim	5,468	0	0	5,468
Total	24,649	2,856	311	27,816